California State Medi-Cal Health Information Technology Plan

October 2019

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1 CALIFORNIA'S HEALTH INFORMATION TECHNOLOGY LANDSCAPE

California not only boasts the largest population of the 50 states in the union – approximately 39 million residents – it is also the third largest state geographically. Though 80 percent of California is rural, 87 percent of the population lives in urban areas. Health care services are delivered to Californians through more than 430 acute hospitals and over 143,000 active physicians.

California's large and diverse health care delivery system is characterized by provider organizations of varying sizes, ranging from very large to solo practices. Outpatient providers in a community may be tightly integrated via integrated delivery networks (IDNs), loosely affiliated such as independent practice associations (IPAs), or entirely independent. Hospitals may be part of regional, statewide, or multi-state chains, or they may be independent local facilities. Several large health systems such as Kaiser Permanente, Adventist, Dignity Health, Sutter Health, and Tenet provide services in multiple regions and many operate in more than one state.

Hospitals and community outpatient physicians may be tightly integrated into combined business entities or they may be related only by virtue of physician admitting privileges. Provider organizations that are part of larger commercial entities may be well capitalized and capable of sophisticated infrastructure projects, whereas independent provider organizations and organizations treating underserved populations may be undercapitalized, thus less able to develop and support complex infrastructures.

California has a robust safety net infrastructure comprised of approximately 1,360 community clinic and health center sites. Of those, 877 are Federally Qualified Health Centers (FQHCs), 50 are FQHC look-alikes, and 27 are Rural Health Centers (RHCs). The remaining are free-standing community clinics that, like FQHCs and FQHC look-alikes, are nonprofits that offer care on a sliding fee scale. These clinics and health center corporations range in size from single-site entities to multi-site organizations that span multiple counties and geographic areas. Community clinics and health centers serve more than 5.9 million patients annually through over 18.2 million encounters. Many of these clinics and health centers have sophisticated health information technology systems. This is due to the infrastructure of regional clinic associations, many of which provide technical support to the clinics through the Health Center Controlled Network grants from the Health Resources and Services Administration (HRSA) and funding from the electronic health record (EHR) incentive programs.

Health care in California is funded through a mosaic of payment mechanisms. National, statewide, and regional commercial insurers operate in California. The state and local governments finance care for the underserved through a variety of mechanisms including California's Medicaid program (Medi-Cal), both fee-for-service (FFS) and managed care plans (MCP), and the county medical service programs, with a separate mechanism for managing the state's large prisoner health system. To add to this complexity, Medi-Cal carves out its behavioral health management to county medical service programs in all counties. In January 2013, Assembly Bill (AB) 1494 provided for the transition of 751,293 children[1] from the State Children's Health Insurance Program (SCHIP), known as the Healthy Families Program (HFP) in California, to the Medi-Cal Program.

Fifty-six percent of Californians receive health insurance through their employers, 27.9 percent are covered by Medi-Cal, 1.9 percent are covered by Medicare, 3.2 percent are covered by Tricare/CHAMPVA, 17 percent are covered by individual plans, and the remaining 8.6 percent of the population is uninsured[2]. Insurance payment models include network-based fee-for-service (FFS) plans (network and indemnity coverage), preferred provider organizations (PPOs), network-based capitation plans, such as health maintenance organizations (HMOs). Delegation of risk and other insurance functions via HMOs is more common in California than in most states. Medicare and Medi-Cal delegate risk and claims payment functions to commercial insurance carriers through Medicare Advantage and managed care plans (MCP). Commercial insurers delegate risk and claims payment functions to contracted IPAs or medical groups.

Quality improvement efforts are robust in some segments of commercial health care through pay-for-performance and other similar programs. In Medi-Cal, quality improvements efforts are largely focused on managed care plans which provide coverage to over 82 percent of the Medi-Cal population[3]. Medi-Cal managed care plans are required to report annually on a set of fourteen Healthcare Effectiveness Data and Information Set (HEDIS) measures, including associated indicators, and one non-HEDIS measure developed by the Department

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[1] California Department of Health Care Services, *Healthy Families Program Transition to Medi-Cal Final Comprehensive Report: All Phases January 1, 2013-November 1, 2013*. Accessed on: August 16, 2019.

[2] Fronstin, Paul. California Health Care Almanac, *California's Uninsured: As Coverage Grows, Millions Go Without December 2016 (Updated November 2017).* Accessed on: August 16, 2019.

[3] Research and Analytic Studies Division, October 2019. *Medi-Cal at a Glance, June 2019 as of the MEDS Cut-off for October 2019*. California Department of Health Care Services. Chief Medical Information Officer Approval number CMIO-19-0396, Research and Analytic Studies Division. Accessed on: August 16, 2019.

of Health Care Services (DHCS) and MCPs to be used for a statewide collaborative quality improvement project (QIPs). This brings the total number of performance measure rates required for MCP reporting to 30. In Medi-Cal fee-for-service, which currently serves 18 percent of Medi-Cal recipients, quality improvement efforts are limited to several disease management pilots. The clinical data that practitioners and hospitals are required to report to the Department of Health Care Services (DHCS) for meaningful use (MU) of electronic health records (EHRs) represents a large and new resource for planning and implementing quality improvement efforts in Medi-Cal and statewide.

1.1 EHR ADOPTION AND USE BY PROFESSIONALS

The Medi-Cal Electronic Health Record (EHR) Incentive Program was launched in October 2011 with the goal of improving the adoption and use of electronic health records by Medi-Cal providers in California. A report[4] on the Medi-Cal Promoting Interoperability Program, formerly the Medi-Cal EHR Incentive Program, was submitted to the California Legislature in November 2018. This report covered the activities, accomplishments, and challenges of the program from October 2011 to June 2018. Most of the contents of this report are integrated into the following sections of this updated State Medicaid Health Information Technology Plan (SMHP).

The EHR adoption landscape described in the following pages was derived from a variety of sources over the last several years. Where possible, information is utilized from existing sources in both published and unpublished literature. Appendix 1 describes in detail the data sources used in the pages that follow in this landscape assessment of EHR use in California. Where data sources are out-of-date, or inadequate for some other reason, we have updated these with new sources where available. Data specific to Medi-Cal EHR Incentive Program participation has been made available to the public via the Open Data Portal[5] developed by the California Health and Human Services Agency (CHHS)[6].

1.1.1 MEDI-CAL EHR INCENTIVE PROGRAM PARTICIPATION

Table 1 displays the number of eligible professionals (EPs) who have attested for the program by year. Program Year 2018 attestations are closed and payments are being processed. As of June 2019, DHCS disbursed over $529 million in AIU payments and $239

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[4] California Department of Health Care Services. *Report to the Legislature: Medi-Cal Electronic Health Record Incentive Program Fiscal Years 2016-2017 and 2018-2018* Accessed on August 9, 2019.

[5] California Health and Human Services Open Data Portal. Accessed on August 16, 2019.

[6] California Health and Human Services Agency. Accessed on August 16, 2019.

million in MU incentive payments to eligible professionals. Even though AIU ceased in 2016, a total of 25,004 professionals have attested for AIU payments. Of those, a total of 778 professional applications for AIU were either rejected or withdrawn. Approximately 47 percent (11,720) of unique professionals have progressed from receiving AIU payments to receiving MU payments.

TABLE 1: NUMBER OF PROFESSIONALS WHO ATTESTED FOR THE PROGRAM BY YEAR JUNE 2019

Program Year	AIU	MU Stage 1	MU Stage 2	MU Stage 3	Total Attestations	Completed Program
2011	6,371	0	0	0	6,371	0
2012	4,615	2,129	0	0	6,744	0
2013	3,779	4,187	0	0	7,966	0
2014	2,652	3,900	360	0	6,912	0
2015	3,296	2,476	1,634	0	7,406	0
2016	5,069	2,543	2,301	0	9,913	372
2017	0	0	5,065	15	5,080	517
2018	0	0	4,687	32	4,719	726
Total	**25,782**	**15,235**	**14,047**	**47**	**55,111**	**1,615**

The number of participants has greatly exceeded the number (10,000) projected by the Lewin and McKinsey study conducted in 2010 before the program began (see 2014 SMHP update[7]). There are several potential reasons for this:

- The Affordable Care Act (ACA) increased Medi-Cal enrollment by 30 percent resulting in more professionals meeting or exceeding the 30 percent Medicaid encounter threshold for the program.
- Between January through November 2013, Healthy Families Program (HFP) subscribers were transitioned to the Medi-Cal Program.
- The Lewin and McKinsey study was not able to accurately estimate how many professionals would qualify through group membership. Approximately 70 percent of professionals qualifying for the program have been members of groups.
- The use of prequalification methodologies for individual EPs and groups/clinics (see Section 3.2.4) has encouraged many EPs to participate in the program. Approximately 42 percent of professionals have been prequalified individually or as a member of a prequalified group/clinic.

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[7] DHCS. California State Medi-Cal Health Information Technology Plan (January 10, 2014). Accessed April 19, 2018.

Table 2 below displays the unique number of MU attestations by program and payment year. Program year refers to the year in which an EP submitted an application, while payment year refers to the number of years an EP has received an EHR incentive program payment. Table 2 reflects those EPs that have received an EHR incentive program payment. In 2016, 372 EPs completed all six payment years of the program.

TABLE 2: EP MU ATTESTATIONS BY PROGRAM AND PAYMENT YEARS

Year	2011	2012	2013	2014	2015	2016	2017	Total
1	0	72	109	141	123	105	0	550
2	0	1,982	2,602	1,641	1,591	1,294	402	9,512
3	0	0	1,399	1,597	1,137	1,212	196	5,541
4	0	0	0	853	820	1,099	195	2,967
5	0	0	0	0	445	744	221	1,410
6	0	0	0	0	0	372	150	522
Total	**0**	**2,054**	**4,110**	**4,232**	**4,116**	**4,826**	**1,164**	**20,502**

Table 3 below displays the Medi-Cal EHR Incentive Program AIU and MU participation rates for EPs as of April 2018 according to their licensing boards. Physicians (MDs), both doctors of medicine (MDs) and doctors of osteopathic medicine (DOs) constituted 57 percent of the total number of AIU attestations received. Dentists followed, contributing 21 percent of participants, which is considerably higher than the 12 percent national participation rate for dentists.

TABLE 3: MEDI-CAL ELIGIBLE PROVIDER PARTICIPATION BY PROVIDER TYPE

Provider Type	AIU	MU	MU % (Any Stage)
Medical Board of California	13,324	6,545	49%
Dental Board of California	5,179	569	11%
California Board of Registered Nursing	4,239	1,939	46%
Physician Assistant Committee	1,058	543	51%
Osteopathic Medical Board of California	805	387	48%
California State Board of Optometry	168	49	29%
Total	**24,773**	**10,032**	**40%**

Physician assistants had the highest rate of AIU to MU participation (51 percent), followed by physicians (MDs 49 percent, DOs 48 percent). Dentists have the lowest rate of AIU to MU participation at only 11 percent.

To better understand the barriers for MU participation among dentists, in 2017 DHCS conducted a survey of dentists that had received AIU payments but had not returned to attest for MU. The survey was made available to dentists via Survey Monkey. Email invitations were sent to dentists or their contact person/representative. In order to ensure that all had the opportunity to participate, follow-up emails were sent to those who had not responded. A total of 228 dentists participated in the survey, while 140 additional responses were received from the contact person/representative for the dentists. The response rate to the survey was 12 percent overall but because of the participation of practice representatives, the rate may have been higher in terms of dentists represented in the survey. Results from the survey revealed 56 percent of respondents regularly used their electronic health record/electronic dental record (EHR/EDR). Of those, 44 percent indicated it was very likely that they would submit an application for future MU payments.

The survey revealed that there is some confusion among dentists regarding MU, as shown in Table 4. Others found that, despite this, the use of an EDR was very beneficial as it has led to integration of care.

TABLE 4: DENTIST AND DENTAL STAFF UNDERSTANDING OF MU

Dental MU Survey Questions	Yes (%)	No (%)	Uncertain (%)
I do not believe I can qualify for meaningful use because I am a dentist.	9.5	52.3	38.1
I am aware that many meaningful use measures do not apply to dentists and, therefore, can be excluded.	58.4	41.5	N/A
Many of my patients do not have email addresses or internet access, making it difficult to meet patient portal requirements.	77.7	22.2	N/A
I would like more information about meaningful use requirements.	63.6	36.3	N/A
My certified EHR/EDR does not offer dental-appropriate modules and/or applications.	43.4	56.5	N/A

Many dentists would benefit from additional technical assistance, as 78 percent responded that they are not able to satisfy patient portal requirements. Many comments received in the survey revealed a belief that patients must have an email address in order to comply with the measure requirements. Dentists and their representatives would benefit from knowing

that beneficiaries have the option to opt-out for receiving electronic messages and that several other objectives can be excluded. For dentists requesting additional information, DHCS developed and sent the Dental MU Tip Sheet (Appendix 14). The full survey results are provided in Appendix 13 .

1.1.2 EHR ADOPTION AND USE IN CALIFORNIA BY PROFESSIONALS

A number of studies of EHR adoption and use in California have been conducted since the program began in 2011. These are discussed below. The results of these studies have demonstrated a significant increase in EHR use by all professional types and in all settings.

NATIONAL AMBULATORY MEDICAL CARE SURVEY (NAMCS) (2015)

The Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS) conducted the National Ambulatory Medical Care Survey (NAMCS). Conducted annually, the NAMCS assesses the adoption of certified EHR systems and electronic sharing in physician offices. Based on the survey results released on July 2016, 77.9 percent of office-based physicians reported having a certified EHR system in 2015, up from 74.1 percent in 2014.

California's rates, according to the same survey, are not significantly different from the national averages. Approximately 76.5 percent of office-based physicians have a certified EHR system compared to 77.9 percent national average.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO PHYSICIAN SURVEY (2011, 2013)

DHCS partnered with researchers at University of California, San Francisco (UCSF) to develop and conduct a survey (Appendix 2) of physicians through the Medical Board of California's re-licensure process. Originally conducted in 2011, faculty at UCSF, in conjunction with the California Medicaid Research Institute (CMRI) developed and administered the survey in an effort to understand the extent to which California physicians use EHRs and the number of physicians in California who could potentially be eligible for Medi-Cal incentive payments. A follow-up survey was conducted in 2013, which included the same group of physicians originally sampled in 2011. Between June 1 and July 31, 2013, a questionnaire was sent to 9,762 physicians whose MD license renewals were due for renewal with the California Medical Board. Of those physicians who received the survey, 7,065 met the criteria for inclusion. This included physicians that practiced in California who provided at least one hour of patient care per week. A total of 4,334 physicians completed the survey. Of these, 3,078 physicians had participated in the original survey in 2011. The response rate to the supplemental survey was 61 percent among eligible respondents.

In 2013, 78 percent of physicians reported having some form of EHR at their main practice location. This was a significant increase from 2011, when only 65 percent of physicians

reported having some form of EHR at their main practice location. Additionally, 56 percent of physicians who had EHRs reported that the EHRs had the functions necessary to achieve all 12 of the Stage I MU objectives measured. Table 5 illustrates the availability of other EHR functions that may be helpful for providing patient care and to achieve specific core objectives for MU.

TABLE 5: AVAILABILITY OF FUNCTIONS TO FULFILL STAGE 1 MEANINGFUL USE OBJECTIVES AMONG ALL PHYSICIANS, 2013

	Yes, the feature is available				No, this feature is not available (%)	Don't know (%)	Do not have an EHR/ Did not respond (%)
	Yes, use all or most of the time (%)	Yes, use some time (%)	Do not use (%)	Not applicable (%)			
Collect patient demographics	42	16	10	2	2	6	22
Take clinical notes	67	6	2	1	1	1	22
Generate patient problem list	63	8	3	1	1	1	22
Generate list of patient medications	67	6	2	1	1	1	22
Generate list of medication allergies	68	5	2	1	1	1	22
Order/transmit prescriptions electronically	55	7	7	3	4	1	22
Generate routine report of quality indicators	23	16	20	3	5	11	22
Transmit info electronically to/from providers to whom a patient is referred	24	15	19	3	8	8	22

Physicians were most likely to report having the ability to enter and view clinical notes and to generate lists of patients' problems, their medications, and their medication allergies. Physicians were more likely to use EHR features related to providing care to individual patients, such as lists on medication and medication allergies, than using features related to quality improvement or facilitation of electronic communication with patients or other health care providers.

Among physicians participating in the 2013 follow-up survey, the responses suggested that while a number were eligible, many had not registered. Extrapolation of the physician population with California licenses found that only 4,427 of the 11,650 physicians who may be eligible for the Medi-Cal incentive program had registered for it. This would mean that only 38 percent of respondents who might have been eligible had registered. This figure, however, might have been underestimated. If the physician was a part of a large practice,

an administrator might have included the physician as part of a group, in which case, the administrator might have submitted the physician's registration information. As discussed above, as of April 2018, 13,324 physicians have submitted a Program Year 1 application and 6,545 submitted a Program Year 2 application.

The 2013 survey also asked physicians to report the reasons for not registering. Twenty-seven percent of physicians surveyed did not believe that they were eligible. A small percent, 8 percent, reported a decision not to register due to a belief that available incentive funding amounts were insufficient while 4 percent indicated no plans to adopt or use an EHR. Of those surveyed, 62 percent did not indicate a reason for not registering.

The UCSF surveys found that primary care physicians were somewhat more likely to use EHRs than specialist physicians (81 percent vs. 77 percent in 2013). Among specialist physicians, those with the highest rates were internal medicine specialists (cardiologist, pulmonologist, etc.) at 80 percent and those with the lowest rate were psychiatrists (55 percent).

FIGURE 1: PERCENT WITH ANY EHR BY SPECIALTY, 2011 AND 2013*
(N = 3,078)

*Differences in the percentage with any EHR are statistically significant for at p<0.05 for facility-based specialties, family medicine, general internal medicine, medical specialties, obstetrics/gynecology, and pediatrics. Chart provided by UCSF.
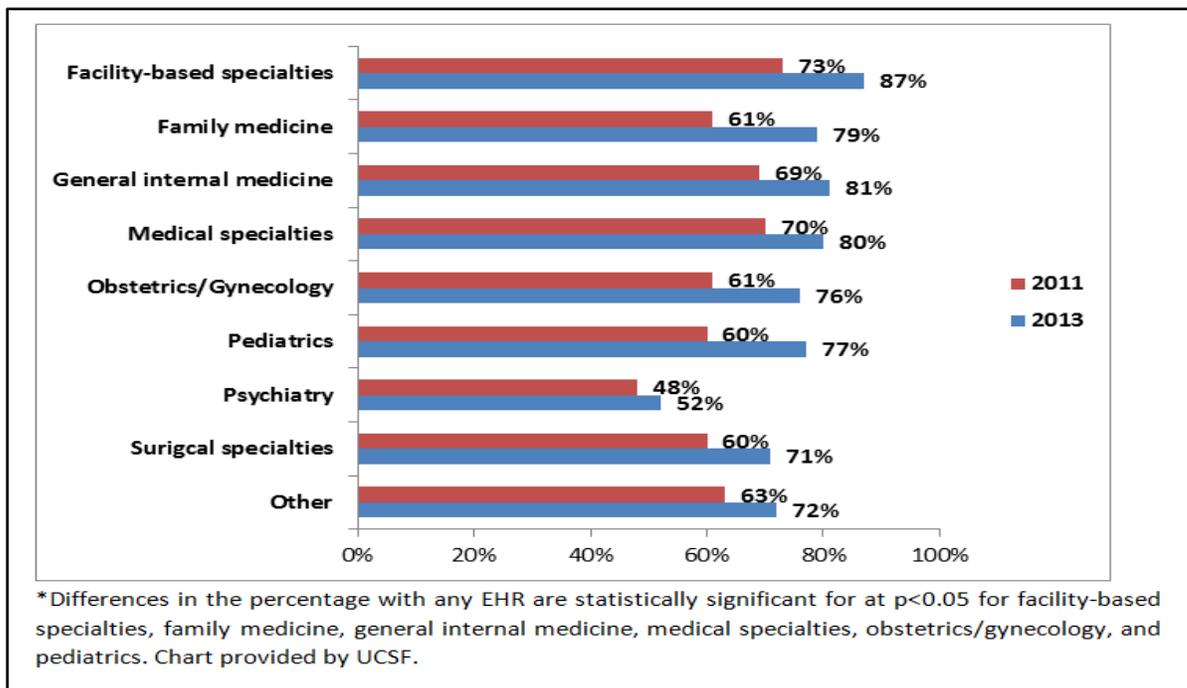
These results are similar to the results of CDC's national survey of physicians in 2015, with 89.6 percent of primary physicians and 84.4 percent of specialist physicians reporting the use of EHRs. This survey also found cardiologists to have the highest rate nationally (95.6 percent) and psychiatrists to have the lowest rate nationally (61.3 percent). To help address

the lower rate of EHR use by specialists, DHCS provided a $500 payment to California Technical Assistance Program (CTAP) contractors for every eligible specialist to whom they provide services (see Section 1.8).

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO NURSE PRACTITIONER AND CERTIFIED NURSE MIDWIFE SURVEY (2012)

In order to help fill the gap of knowledge about EHR use by non-physician providers, DHCS contracted with researchers at the University of California, San Francisco (UCSF) to modify the survey they have developed for the Medical Board of California for use with Nurse Practitioners (NPs) and Certified Nurse Midwives (CNMs). This survey was sent to 5,000 NPs and CNMs with active California certificates on October 21, 2011. The response rate for the survey was 2,624 (or 54 percent). The survey found that 2,506 (or 21.5 percent) of the 11,503 NPs and CNMs employed in advanced practice were potentially eligible for the program at that time.

FIGURE 2: NPS, CNMS, AND DUAL-CERTIFIED ADVANCED PRACTICE NURSES WITH ANY EHR AT THEIR PRACTICE*

*NOTE: 1,988 observations used in calculations. Percentages do not sum to 100% due to rounding. Differneces across type of APRN are not statistically significant (p=0.647).
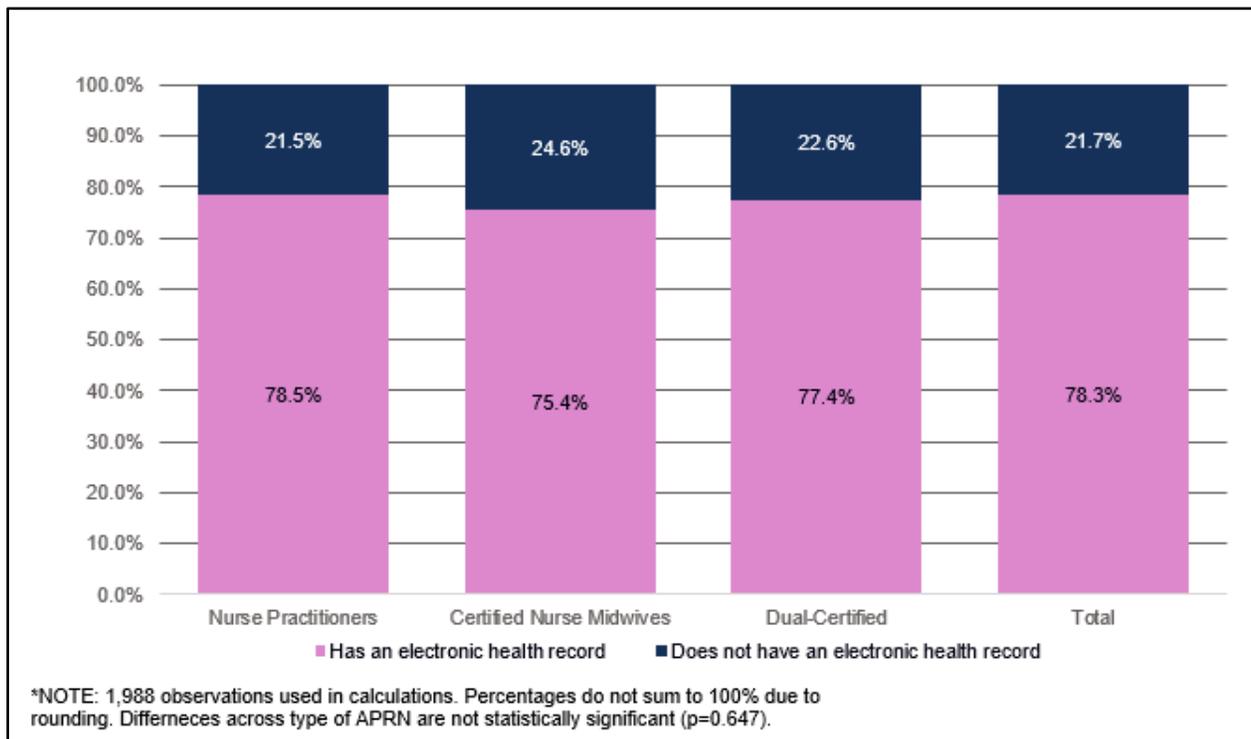
The survey findings from all respondents found 78 percent of all NPs and CNMs across all practice settings had some form of EHR at their main practice location. Of those respondents, 26.1 percent had an EHR at their main practice location that was able to achieve all 12 of the Stage 1 MU objectives measured in the survey. A follow up survey has not been conducted.

As of December 2017, 2,071 NPs and 432 CNMs were enrolled as either FFS or MCP provider for Medi-Cal. A large number of NPs and CNMs (4,239), as of April 2018, have submitted a Program Year 1 application and 1,939 have returned for MU.

1.2 EHR ADOPTION AND USE BY HOSPITALS

1.2.1 MEDI-CAL EHR INCENTIVE PROGRAM PARTICIPATION

As of August 2019, 331 unique hospitals have participated in the Medi-Cal EHR Incentive Program. This number of unique hospitals participating in the incentive program has significantly surpassed the original estimate of 242 hospitals provided by Lewin and McKinsey's study in 2010. Of California's 13 children's' hospitals, 11 have participated in the program.

Of the hospitals that applied, 271 attested to AIU, 24 hospitals attested to Stage 1 MU, and 36 hospitals attested to Stage 2 MU in their first year. A total of 319 unique hospitals in California attested for incentive payments for MU. Of these, 257 unique hospitals have progressed to achievement of Stage 2 MU. DHCS has disbursed over $404 million in AIU incentive payments and $415 million in MU incentive payments to eligible hospitals. This is the largest amount of incentive payments for hospitals in the state.

TABLE 6: NUMBER OF HOSPITALS THAT HAVE ATTESTED FOR THE PROGRAM BY YEAR JUNE 2019

Program Year	AIU	MU Stage 1	MU Stage 2*	Total Attestations	Completed Program
2011	139	0	0	139	0
2012	90	76	0	166	0
2013	19	196	0	215	0
2014	8	136	76	220	63
2015	10	28	147	185	90
2016	5	30	95	130	38
2017	0	0	79	79	19
2018	0	0	60	60	54
Total	**271**	**466****	**457*****	**1,194**	**264**

*Please note, in 2017 and 2018, dually-eligible hospitals could choose to attest for Stage 3 but available data from CMS does not allow DHCS to identify the stage selected. For this reason, all hospitals for these years are listed as Stage 2.
**24 hospitals attested to Stage 1 MU in their first year.
*** 36 hospitals attested to Stage 2 MU in their first year.

A number of studies of EHR adoption and use by hospitals in California have been conducted since the program began in 2011. Some of these are listed and discussed below. They have demonstrated a significant increase in EHR use by hospitals throughout the state.

OFFICE OF THE NATIONAL COORDINATOR REPORT (2008-2015)

In May 2015, the Office of the National Coordinator (ONC) released a report on the Adoption of EHR Systems among U.S. Non-Federal Acute Care Hospitals from 2008-2015. The survey found that 96 percent of all non-federal acute care hospitals reported that they had adopted a "certified" EHR technology and 84 percent of hospitals nation-wide had adopted at least a "basic" EHR technology in 2015. This represents a nine-fold increase since 2008. In California, 320 hospitals were surveyed and of those, 198 hospitals responded to the survey. According to the survey, 85 percent of non-federal acute care hospitals in California reported adopting a basic EHR technology in 2015, compared to 22 percent in 2011 and 9 percent in 2008.

AMERICAN HOSPITAL ASSOCIATION SURVEY (2012)

Detailed data on the adoption of HIT by hospitals is available from a 2012 survey conducted by the American Hospital Association (AHA). The response rate for the survey was 50 percent. Survey results indicated that 49 percent of responding California hospitals were fully electronic and had an EHR system. An additional 32 percent of hospitals had a system that was partially electronic and partially paper-based. Among California hospitals with EHRs, 83 percent had a system that met all of the Stage 1 MU objectives, 11 percent did not meet the objectives and for the remaining 6 percent, data was not available.

California hospitals' EHRs varied in their ability to meet Stage 1 MU menu and core objectives. Ninety-three percent of California hospitals were able to record demographics, while 65 percent could track clinical quality measures. Eighty-five percent of hospitals' EHR systems were able to provide patient lists by condition. Of the hospitals surveyed, 46 percent were able to conduct syndromic surveillance, which assists in the early detection of disease outbreaks. Table 7 shows the detailed data for California hospitals and their ability to meet Stage 1 MU menu and core objectives at the time of the survey in 2012.

TABLE 7: HOSPITAL CAPABILITY TO MEET MU CORE AND MENU OBJECTIVES, CALIFORNIA, 2012

Stage 1 Core Objectives	Percentage
Record patient demographics	93%
Generate list of medication allergies	89%
Record patient vital signs	84%
Record patient smoking status	81%
Generate list of patient active medications	80%
Generate clinical decision support rules	80%
Perform drug interaction checks	78%
Protect electronic health info	77%
Produce electronic copy of health record information	73%
Produce electronic copy of discharge instructions	73%
Generate patient problem list	72%
CPOE for medication orders	68%
Exchange clinical information	67%
Generate routine report of clinical quality measures	65%
Menu Objectives	**Percentage**
View or receive lab test results	70%
Generate list of patients by conditions	37%
Transmit data to immunization registries	17%
Patients able to access their own EHR	31%
Other EHR Functions	**Percentage**
Order laboratory tests	60%
Order radiology tests	56%
View written records of radiology tests	67%
View images of radiology tests	57%

*NOTE: AHA Annual Survey Information Technology Supplement Survey, 2012.

Yes (N=215)

1.3   EHR ADOPTION AND USE BY COMMUNITY CLINICS

Community clinics and health centers are non-profit, tax-exempt clinics that are licensed as community or free clinics under Section 1204 of the California Health & Safety Code. Patients receive services on a sliding scale or at no charge. Many clinics meet federal requirements and definitions to be considered FQHCs or FQHC look-alikes. Community clinics provide a wide variety of services to low-income and medically underserved people regardless of their ability to pay.

1.3.1 MEDI-CAL EHR INCENTIVE PROGRAM PARTICIPATION BY COMMUNITY CLINICS

Information collected in the State Level Registry does not enable DHCS to precisely define how many community clinics have participated in the Medi-Cal EHR Incentive Program. Every year, DHCS reviews data from the Office of Statewide Planning & Development (OSHPD) to qualify certain clinics based on Medi-Cal and other needy individual encounter volumes (see Section 3.2.4). This pre-qualification status allows clinics to submit their registration for the Medi-Cal EHR Incentive program without having to calculate and provide encounter data for their providers. The number of prequalified clinics has increased each program year. For Program Year 2017, there were 1,037 prequalified clinics. For FQHCs and Rural Health Centers (RHC), services provided to other needy individuals may be counted in addition to those provided to Medi-Cal patients. The number of clinics utilizing other needy encounter as a means to prequalify has decreased in the last two program years. This decrease may have been a result of the increased enrollment of beneficiaries in the Medi-Cal program.

1.3.2 EHR ADOPTION AND USE IN CALIFORNIA BY COMMUNITY CLINICS

The following surveys have been conducted of California community clinics since the program began in 2011.

CALIFORNIA PRIMARY CARE ASSOCIATION SURVEY (2014)

A 2014 California Primary Care Association (CPCA) survey of health centers, which had a 65 percent response rate, found that of the 91 respondents, 81 health centers had adopted some form of EHR (55 full electronic, 15 electronic and paper) and had participated in MU. Seventy-seven health centers reported that their eligible professionals had attested for AIU for 2011, 2012, and 2013. In addition, 50 of the 65 health centers with dental programs had adopted an EHR as well.

At the time of the survey, NextGen was the EHR of choice for community clinics, with 36 health center adopters, 22 with eClinical Works, 3 with GE Centricity, 2 with Epic, 2 with AllScripts, 1 with an in-house developed EHR and 13 other systems. Of those who had not adopted an EHR, eight planned to adopt an EHR within six months, one within twelve months, and two within three to four years.

There were 37 health centers that reported participating in electronic exchange of information with external partners, while 21 health centers reported exchanging electronic information internally. Of those, 16 health centers reported intent to exchange information electronically in 2014. Eight other health center locations were scheduled to start in 2015 while two additional locations were expected to implement in 2016. While these efforts

represent significant progress, the health centers reported continued financial challenges in fully adopting EHR and joining health information exchange programs.

UCSF: THE AVAILABILITY OF ELECTRONIC HEALTH RECORDS IN CALIFORNIA (2013)

The 2013 UCSF physician survey found the highest rate of growth in EHR availability was among physicians in community and public clinics where availability grew from 50 percent in 2011 to 81 percent in 2013. Physicians who practiced at a community or public clinic had high percentages of patients who were uninsured or enrolled in Medi-Cal and were more likely to be eligible for the EHR Incentive Program.

HEALTH RESOURCES AND SERVICES ADMINISTRATION (HRSA) HIT FUNDING

Since 2013, HRSA has awarded 48 HIT related grants to California Health Centers, totaling $20,783,832. The names of the recipients, year of receipt, and amount for each grant is listed in Appendix 3. These include:

- Twenty-seven Health Center Controlled Network Grants (H2Q) to six organizations in years 2013-2018 totaling $16,716,668.

Health Center Controlled Networks (HCCN) are groups of safety net providers (a minimum of three collaborators/members) working together to improve access to care, enhance quality of care and achieve cost efficiencies through the redesign of practices to integrate services, optimize patient outcomes, or negotiate managed care contracts on behalf of the participating members. Supported through the Health Center Controlled Network grant program, the networks work collaboratively to:

- Adopt and implement certified electronic health record technology,
- Meet MU requirements under the Medicare and Medicaid Electronic Health Records Incentive Programs, and
- Improve clinical and operational quality, reduce health disparities, improve population health through health information technology, and achieve patient centered medical home recognition.

Within the networks, individual health centers worked together to share resources, leverage buying power (e.g. discounted software), enhance access to information and promote guidelines on best practices, as well as provide support for achieving quality of care and operational goals. Networks support member health centers in the shared mission to provide comprehensive, culturally competent, quality primary health care services to medically underserved communities and vulnerable populations. While there have been 12 new HCCN grants, there are 14 active HCCNs operated by 10 organizations.

- Three Rural Health Information Technology Workforce (R01) Grants to Livingston Community Health Center in 2013, 2014, and 2015 totaling $900,000.

  The Rural Health Information Technology (HIT) Workforce Program supports formal rural health networks that focus on activities relating to the recruitment, education, training, and retention of HIT specialists. The program provides support to rural health networks that can leverage and enhance existing HIT training materials to develop formal training programs that provide instructional opportunities to current health care staff, local displaced workers, rural residents, veterans, and other potential students. These formal training programs will assist in the development of a cadre of HIT workers who can help rural hospitals and clinics implement and maintain systems, such as EHRs, telehealth, home monitoring and mobile health technology, and meet EHR MU standards.

- Eighteen Small Health Care Provider Quality Improvement (G20) Grants to six organizations in 2013-2018 totaling $3,164,000.

  The purpose of the Small Health Care Provider Quality Improvement grant program is to provide support to rural primary care providers for the implementation of quality improvement activities. The ultimate goal of the program is to promote the development of an evidence-based culture and delivery of coordinated care in the primary care setting. Additional objectives of the program include improved health outcomes for patients, enhanced chronic disease management, and better engagement of patients and their caregivers. Organizations participating in the program are required to utilize an evidence-based quality improvement model, perform tests of change focused on improvement, and use health information technology (HIT) to collect and report data. This is a three-year grant program with individual grant awards limited to a maximum of $150,000 per year.

1.4 EHR ADOPTION AND USE BY INDIAN HEALTH CLINICS

The California Native American population is diverse and programs must consider the multiple needs of the individual, family, and community. California is home to approximately 115 federally recognized American Indian tribes. According to the 2010 census, California has the largest population of individuals self-identified as American Indian/Alaskan Native (AI/AN), with approximately 723,225 identifying as AI/AN alone or in combination with another race (representing 14 percent of the national AI/AN population). There are 31 California tribal health programs operating 75 ambulatory clinics and 10 urban Indian health programs. These tribal health programs are independent primary care clinics located on or near reservations, in rural and isolated communities. The 10 Urban Indian Health Programs (UIHP) are located in major urban areas. There is a wide variation in the size of Indian health clinics in California ranging from clinics that serve only a couple of hundred patients, to

those serving over 10,000 patients. Indian health programs provide a comprehensive array of services, including primary care, dental, substance abuse counseling, and other behavioral health services. All of California's Indian health programs have implemented certified EHRs such as AthenaHealth, NextGen, eClinicalWorks, and the Indian Health Services' (IHS) Resource and Patient Management System (RPMS). In addition, many also have electronic dental records (EDR) such as Dentrix and QSI Dental.

The tribal/urban Indian clinics in California receive partial funding from the IHS to provide care to AI/AN in their designated Contract Health Services Delivery Areas (CHSDA). In addition, these clinics also secure funding from grants, contracts, and third party reimbursement from Medicare, Medi-Cal managed care, and private insurance. Tribal/Urban Indian clinics can participate in the Medi-Cal program as either a Tribal Health Provider (THP) funded under the authority of Public Law (PL) 93-638, 25 USC 450 et seq., or as an Urban Indian Health Program (UIHP) under Title V of the Indian Health Care Improvement Act, PL 94-437, depending on their location and designation. Most tribal health programs receive a flat rate reimbursement from Medi-Cal, although there is some variation depending on which federal and state statutory requirements they meet, such as a Tribal Health Provider Memorandum of Agreement (MOA), FQHC, Rural Health Clinic (RHC), or Community Health Center.

In 1998, DHCS implemented an MOA between the federal IHS and the Health Care Financing Administration (HCFA). HCFA was later renamed the Centers for Medicare & Medicaid Services (CMS). The MOA established the THP provider type and reimbursement rate for services provided to Medi-Cal recipients at tribal health clinics funded under PL 93-638. Clinics subsequently had the option to change their provider type and most of the tribal health clinics changed their provider status from FQHC to THP at that time to take advantage of the new reimbursement system although they did not change operations. As of December 2014, there were 11 FQHCs and 55 THP Indian health clinic sites enrolled in the Medi-Cal program serving the Native American population.

THP clinics are operated by tribes and tribal organizations as primary care clinics in California under the authority of PL 93-638 and funded by the IHS to continue to provide a significant level of health care services at no cost to individual AI/AN people. These services meet the description of services provided to needy patients established in 42 Code of Federal Regulations (CFR) 495.306 and the THP clinics requested consideration as FQHCs for the purposes of the Medi-Cal EHR Incentive Program. In compliance with CMS' published Frequently Asked Questions (FAQ) on this issue, DHCS will treat the THP clinics as equivalent to FQHCs. DHCS allows CMS's Indian Health Service Administration every year to prequalify IHS clinics as meeting the 30percent Medicaid threshold based on encounter and billing data submitted to them. The IHS administrator submits a letter to DHCS documenting each clinic's prequalification status.

Most IHS clinics utilize the RPMS EHR system which is based on the VA's VistA electronic medical record system. In October 2010, the Indian Health Services and the VA signed a MOU intended to strengthen further collaborative efforts to improve the health status of American Indians and Alaska Native Veterans. The language of the MOU recognized the importance of a coordinated and cohesive effort on a national level, which also acknowledged the need for flexibility at the community level. There is a strong need for tribal and urban Indian health programs to interface with the RPMS EHR, the systems used by IHS to manage clinical, business practice, and administrative information. Despite large amounts of federal funding infused to support the RPMS EHR infrastructure, there was little federal funding support for the tribal and urban health programs in California to implement a non-RPMS EHR such as AthenaHealth, NextGen, and eClinicalWorks, or funding interfaces for HIE. DHCS is investigating the use of EHR Incentive program funding available under State Medicaid Director (SMD) letter 16-003 to support interfaces. It is critical that Indian health programs be included in the regional HIE landscape in rural and urban communities given that their patients receive care from a variety of hospitals and specialty care providers in a geographic region.   Since there are not any Indian Health Service hospitals in California, tribal/urban Indian clinics rely on local hospitals and specialty providers.

Substance Use Disorders (SUDs) are a significant problem for many AI/AN communities, and many of these communities are impacted by SUD-related issues. Efforts to better understand and meet the needs of this population are a high priority at both the national and state level[8]. On August 13, 2015, CMS approved the Drug Medi-Cal Organized Delivery System amendment (DMC-ODS). The DMC-ODS provides counties and tribal communities the option to participate and offer SUD services to meet the unique needs of beneficiaries. The state DMC-ODS implementation is occurring in five phases, (1) Bay Area, (2) Kern and Southern California, (3) Central California, (4) Northern California and (5) Tribal Partners also known as the Indian Health Program Organized Delivery System (IHP-ODS). Operation of the IHP-ODS is a significant change for the tribal community because the tribal health programs are each independently operated and owned. Currently, there is not a single entity that operates the tribal communities' health programs, and most tribal healthcare facilities have not participated in Drug Medi-Cal. The IHP-ODS creates a higher need for coordination and collaboration and an organizational structure, analogous to the structure that currently exists in the counties. A description of the functional components of the IHP-ODS system needs to be developed and documented in preparation for implementation.

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[8] DHCS. *California Substance Use Disorder Block Grant & Statewide Needs Assessment & Planning Report (2015)*. Accessed August 16, 2019.

1.5 EHR ADOPTION AND USE BY VETERANS ADMINISTRATION FACILITIES

The Veterans Administration (VA) operates the nation's largest integrated health care system, supporting more than 1,700 hospitals, clinics, community living centers, domiciliaries, readjustment counseling centers, and other facilities. Although the VA facilities do not participate in the Medicaid or Medicare EHR Incentive Programs, electronic health records have long been of vital importance in efforts to improve health care provided to military veterans. Many VA patients tend to be highly mobile and health records may be located at multiple medical facilities within and outside the United States. The capability of making health records electronic helps ensure that complete health care information is available, no matter its originating source. Initial efforts began with the development of an integrated medical information system called the Veterans Health Information Systems and Technology Architecture (VistA). Modernization of the VistA system occurred in 2001, with the creation of a more veteran-centric environment, which provided the same benefits of the existing system but enhanced functionality.

Future improvements included maintaining interoperability standards in order to share health information among providers. These interoperability standards allowed electronic health records to be created, managed, and consulted by authorized clinicians and staff across more than one health care organization, regardless of the originating source. In April 2009, the VA and the Department of Defense (DOD) began work to build the Virtual Lifetime Electronic Record (VLER) Health Exchange to increase electronic health record interoperability and expand health information sharing capabilities.

The Veteran Health Information Exchange (VHIE)/ VLER Health Exchange allowed VA and non-VA health care providers to share health information electronically and securely through two types of VHIE/VLER Health Program:

- VLER Health Exchange allows VA providers and the community partner providers to query and retrieve certain Veterans' health information electronically using the eHealth Exchange. Participating community care providers can securely view specified Veteran health information through the eHealth Exchange, allowing for improved care coordination.

- VLER Health Direct (VA Direct Messaging) allows VA providers to send specific information about a Veteran's health care to participating community partners using a secure tool that is similar to email.

In addition, VistA provided integrated inpatient and outpatient electronic health records for VA patients, and administrative tools to help the VA deliver medical care to Veterans. The

VistA imaging system integrated medical images and scanned documents in the patient's chart. Various types of images, including those related to specialty care, could be incorporated into the patient's chart. Utilized in all VA medical facilities, VistA has provided a variety of benefits related to standardized terms, direct linkage between images and associated medical reports, as well as improved continuity of care. Telemedicine technologies were also incorporated into VistA technologies.

Developed in 2010, the VA launched Blue Button. Representing a national movement, the Blue Button tool was designed to make patient medical records easily available to veterans. Veterans gained access to claims information as well as personal health information maintained by doctors, hospitals, health plans, and others. Adoption of the Blue Button has spread from the VA to other government agencies and the private sector. Under the Blue Button Pledge, more than 450 organizations have made personal health data available via healthcare providers, health insurance companies, labs, and drug stores.

In June 2017, the VA Secretary announced the decision to adopt a new EHR jointly with the DOD. The decision was made after identifying that the existing VistA system required major modernization in order to remain current with health information technology and cyber security improvements. While the VA reported that interoperability with the DOD had been achieved, the seamless exchange of health information was limited by changing information sharing standards and other constraints. In order to maintain future interoperability, the VA concluded that it would adopt the same EHR system as the DOD rather than maintain a separate system. The VA believes that, through the adoption of the same core EHR system, it will enable both Departments to access patient health information without the reconciliation of data between two different systems through the storage of all patient data in one common system.

1.6 EDUCATION AND OUTREACH

Education and outreach efforts have been broad in scope and designed to encourage as many EPs and EHs as possible to apply to the program. These efforts had proven very successful, in light of the large numbers of EPs and EHs that have participated in the program. With the expiration of AIU in 2016, education and outreach efforts are now concentrated on promoting MU attestations and use of HIE.

1.6.1 PROVIDER EDUCATION AND OUTREACH

DHCS' original outreach and education program proved effective in assisting providers meet AIU. DHCS' original provider education and outreach plan identified four main priorities:

1) Shifting provider behaviors and beliefs regarding EHRs and HIEs.

2) Developing goals and metrics for recognizing success.
3) Defining the targets and delivery messages.
4) Execution and ongoing refinement of the plan through monitoring.

Lewin & McKinsey discovered in preparing the landscape assessment that providers had perceptions about EHRs and the incentive program that acted as obstacles to adoption and meaningful use of Certified Electronic Health Record Technology (CEHRT).

TABLE 8: PROVIDER PERCEPTIONS

Initial Provider Perceptions:	Desired Perceptions After Campaign Plan:
• I am unaware or confused about ARRA incentive funding and penalties.	• I understand the details about the program and know how to qualify for funding.
• I am confused about the EHR options available to me.	• I have enough information about my EHR options to make an informed choice for my organization.
• I don't have time to go through information about meaningful use requirements, vendors, etc.	• I have access to concise and complete information about funding and EHRs.
• Implementing an EHR will be expensive.	• Although an EHR will be a substantial investment, there are financing options available to my organization, and it will be a smart investment.
• I don't know what the financial or clinical payback will be.	• I understand the potential costs and benefits of an EHR system.
• Implementing EHR is just too much of a hassle.	• There are resources and support available to help my organization during an implementation.
• I don't know if the state is actually going to give me this funding like they say they will.	• I am confident that the stimulus funds will be awarded in a timely manner if I meet requirements.

Early efforts concentrated on ameliorating these perceptions via a variety of methods. The Office of Health Information Technology (OHIT) conducted educational meetings, conference calls, and webinars with a variety of stakeholder groups; including managed care plans, provider associations, and health care foundations. Several informational documents, including user guides and FAQs were developed. The documents, available on OHIT's State Level Registry website for the incentive program, were provided to various stakeholder groups and discussed during OHIT's monthly Stakeholder Conference Call. Additionally, OHIT wrote informational articles for the publications of provider associations and health care foundations. Program updates were also made available through email distribution and Twitter updates. OHIT also worked to build relationships within the provider community by attending provider conferences to facilitate face-to-face conversations with providers and other stakeholders.

The 2013 UCSF study found that only 49 percent of eligible physicians in California had participated in either the Medi-Cal or Medicare EHR Incentive Program, with only 24 percent of the remaining physicians stating an intention to participate. Of those respondents not participating, 35 percent indicated that this was due to their belief that they were not eligible or that an EHR would be too expensive.

FIGURE 3: REASONS FOR NOT REGISTERING FOR MEDI-CAL OR MEDICARE EHR INCENTIVE PROGRAM, 2013 (N = 1,842)

Data Source: University of California, San Francisco, The Availability of Electronic Health Records in California (2013)
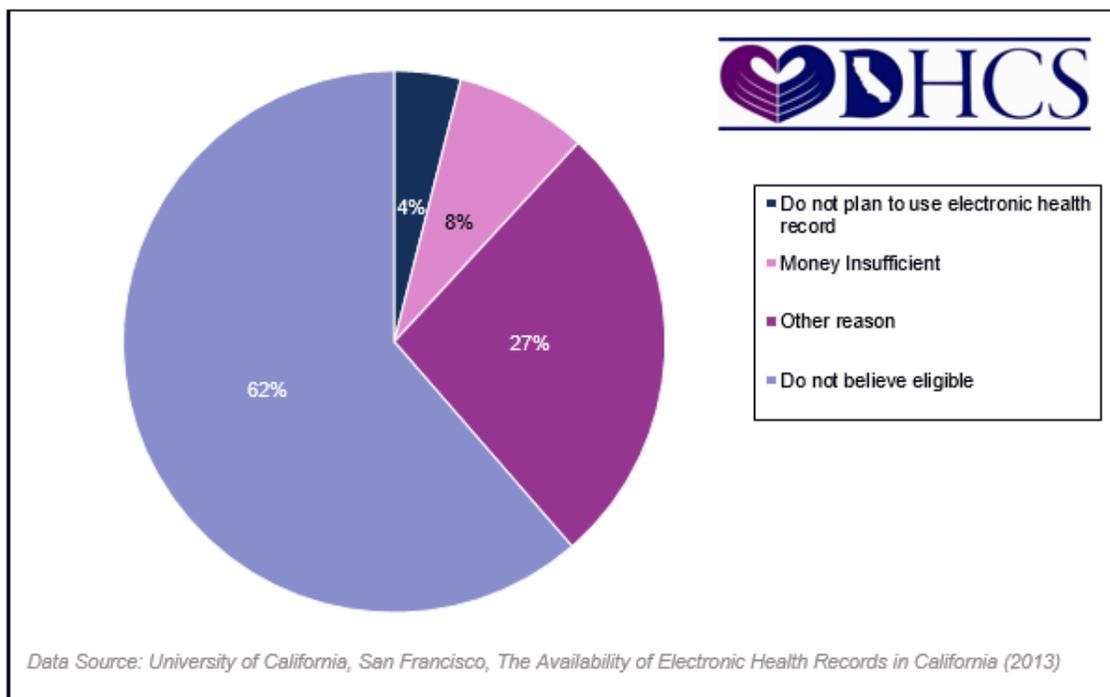
While DHCS maintained focus on assisting providers with AIU, there were efforts on helping providers to reach MU, particularly through work with the RECs and its successor, the

California Technical Assistance Program (Section 1.8). DHCS also conducted internal trainings, providing staff with the ability to answer provider and stakeholder questions regarding MU. DHCS has found that collaboration and the development of consistent messages with key stakeholders, such as the California Department of Public Health (CDPH), were helpful with the dissemination of information to the provider community. See Appendix 4 for a copy of a one page handout developed by the CDPH to assist providers in reporting of four clinical quality measures (CQMs) addressing influenza immunizations, diabetes, hypertension, and colorectal cancer. Attendance at provider conferences and conventions also gave DHCS the opportunity to distribute brochures dedicated to common MU questions available to providers. These documents, in addition to Help Guides and FAQs specifically related to MU objectives and MU attestations, were published on the Medi-Cal EHR Incentive Program website.

PREQUALIFIED EPS AND GROUPS/CLINICS

There has been significant support from stakeholders regarding the prequalification process, which satisfies the 30 percent Medicaid encounter requirement for EPs and groups who meet prequalification criteria. Of the group applications received, 36 percent were for prequalified groups or clinics. This represents over 12,000 applications and is a significant segment of the overall population. Prequalified EPs represented 14 percent, or nearly 3,200 applications. Outreach efforts were primarily performed via the Medi-Cal EHR Incentive Program website, email distribution, and the bi-weekly stakeholder call, which included representatives of many groups and clinics. Additional activities included with these outreach activities were:

- One-on-one support to groups and clinics with emails and calls when necessary.
- Creation of a checklist for prequalified groups illustrating group eligibility requirements and use of the SLR.

1.6.2 HOSPITAL EDUCATION AND OUTREACH

As with EPs, DHCS successfully surpassed the initial goal of the number of EHs attesting to the program (see Section 1.2). A large part of this success can be attributed to the original education and outreach campaign done for EHs. Initial outreach efforts undertaken by DHCS consisted of emails and one-on-one phone calls. In 2015, DHCS conducted webinars and conference calls with individual hospitals and health systems. Of the EHs contacted, twenty EHs were scheduled to attest for program year 2015. While twenty EHs were scheduled, a total of forty-two EHs attested for program year 2015. DHCS was in direct contact with an additional ten EHs preparing to attest by 2016. Analysts were assigned to these EHs in order to ensure that the EHs successfully started the program by the 2016 deadline. Based on those efforts, a total of 14 new hospitals attested for program year 2016.

DHCS obtained information from OSHPD, the state department to which all California hospitals report data, to determine if any other eligible EHs had not attested. DHCS reviewed the OSHPD data to determine if the EHs Average Length of Stay (ALOS) was 25 days or fewer and if the location had 10 percent or more Medicaid discharges. From this review, DHCS determined that 40 hospitals could possibly be eligible. Prior to the closure of the 2016 program year, outreach efforts focused on enrolling EHs that had not yet attested to the program.

In addition, DHCS created and published several hospital-specific FAQs, quick start guides, and other helpful documents available on the Medi-Cal EHR Incentive Program website. This included the development of a user-friendly hospital workbook, enabling EHs to easily compile the data necessary for the application. DHCS staff received comprehensive training to accurately answer questions from EHs regarding eligibility and the attestation process. Additionally, EHs received one-on-one assistance during the application process through a designated contact person at DHCS. Details regarding future outreach efforts can be found in Subsection 2.3.2.

1.7   REGIONAL EXTENSION CENTERS

A key component in transforming the use of EHRs is the change in workflow within providers' offices. To implement EHRs successfully, there needs to be sufficient support and experience related to the changes in workflow and an understanding of the technology. In recognition of this, the ONC implemented the Regional Extension Center (REC) program to assist providers with the many steps necessary to adopt EHRs and to use them effectively to meet MU.

RECs were tasked with achieving the following three milestones, set by ONC:

- Signed technical assistance contracts between the REC and provider;
- Documentation of Go-Live status on a certified EHR, with active quality reporting and electronic prescribing;
- Meeting the MU criteria established by CMS.

Most of the RECs program funding ended in 2014 but support continued into 2016 for some RECs that received no-cost extensions. In 2015, DHCS received approval from CMS for a $37.5 million Technical Assistance (TA) program that enabled selected vendors to continue and expand the TA services provided by the RECs. The TA program, or the California Technical Assistance Program (CTAP), is further discussed below in Section 1.8.

CALIFORNIA HEALTH INFORMATION PARTERNSHIP AND SERVICE ORGANIZATION

The California Health Information Partnership and Services Organization (CalHIPSO) was founded in 2009 by California's three largest provider associations: the CPCA, the California Medical Association (CMA) and the California Association of Public Hospitals and Health Systems (CAPH), to help clinical providers successfully navigate the complicated task of EHR implementation. CalHIPSO covered the majority of the state through its network of Local Extension Centers (LECs). By 2014, over 10,000 providers had registered with CalHIPSO for REC services. By December 2014, CalHIPSO had supported almost 6,000 primary care providers in meeting the MU milestone. By October 2015, CalHIPSO had assisted more than 8,500 physicians adopt a certified EHR.

HEALTH INFORMATION TECHNOLOGY EXTENSION CENTER FOR LOS ANGELES COUNTY

In Los Angeles County, the Health Information Technology Extension Center for Los Angeles County (HITEC-LA) is an independent, non-profit organization working as a project of L.A. Care Health Plan, the nation's largest publicly operated health plan. HITEC-LA was the REC charged with helping doctors and primary care providers' purchase, implement and use electronic health records in a meaningful way. HITEC-LA helped providers assess their technology needs, as well as offer education, training, and on-site technical assistance. Ultimately, HITEC-LA in its role as a REC assisted 3,027 members achieve MU.

CALOPTIMA REGIONAL EXTENSION CENTER

In Orange County, the CalOptima Regional Extension Center (COREC) collaboratively worked with physicians and other eligible providers to integrate HIT into their offices and bring them to MU. COREC worked with service partners who delivered on-site support and assistance to Orange County physicians and providers. Although any Orange County provider could participate, COREC's first focus was on primary care physicians, physician assistants and nurse practitioners who operated in individual or small group practices, community clinics or public and/or CAHs. Ultimately, COREC assisted more than 1,000 doctors in the implementation and meaningful use of certified EHR technology.

CALIFORNIA RURAL INDIAN HEALTH BOARD

The California Rural Indian Health Board (CRIHB), as a partner with the National Indian REC, ensured that California tribal and urban Indian health programs and their eligible providers attested for AIU with a certified EHR. CRIHB provided supplemental resources and guidance to help their members attain MU. CRIHB also collaborated with IHS, tribes, urban Indian health programs, and tribal organizations to develop and disseminate best practices and education to facilitate EHR adoption and enhance the Indian healthcare system in California.

1.8   CALIFORNIA TECHNICAL ASSISTANCE PROGRAM

There are many Medi-Cal EPs in California that did not receive services under the REC program funded by the ONC. RECs were limited to providing technical assistance services to primary care providers working in practices of ten providers or less, community health centers, RHCs, and out-patient clinics at public hospitals. In addition, the RECs only received funding from the ONC to support providers through preparation for the first stage of MU, even though all providers will require significant assistance to reach Stage 2 and Stage 3 MU.

Solo practitioners and specialists represent a portion of Medi-Cal EPs not served by RECs. Many will require assistance with workflow redesign and meaningful use guidance in order to receive ongoing incentive funding. The 2014 expansion of Medicaid under the ACA increased Medi-Cal enrollment. DHCS estimates that an additional 15,000 Medi-Cal EPs not served by the RECs would need assistance over the course of the 10-year program.

DHCS was granted approval to award a total of $37,500,000 to multiple vendors under a three-year California Technical Assistance Program (CTAP) which began in 2015. Through the program, DHCS anticipates that 7,500 additional eligible professionals will be supported to achieve AIU and MU. Due to the size of the state and the number of Medi-Cal eligible providers, DHCS allowed multiple awards to vendors for technical assistance within defined geographical regions and/or among particular provider specialty types. In July 2015, four vendors were awarded contracts to service their defined target groups. Of the vendors selected to provide CTAP support, CalOptima, HITEC-LA, and CalHIPSO had previously provided REC services, while Object Health provided these services as a REC subcontractor. In 2018, DHCS received a 2-year, no-cost extension from CMS for the CTAP program. This will extend the life of the program until June 2020.

CTAP contractors are required to provide the following types of services:

- **Education and Outreach**: Disseminate knowledge about effective strategies and practices to select, implement and meaningfully use certified EHR technology. Assist eligible professionals and groups to meet the requirements to successfully apply to the Medi-Cal EHR Incentive Program.

- **Medi-Cal EHR Incentive Program**: Assist providers in understanding and meeting all requirements of the Medi-Cal EHR Incentive Program. Provide guidance and assistance to ensure eligible professionals and groups submit successful applications/attestations to the State.

- **Implementation and Project Monitoring/Management:** Provide coaching to the practice/clinic through all phases of implementation and advocating for the client with EHR vendor(s).

- **Practice and Workflow Redesign**: Assist providers and organizations in adapting and transitioning paper-based processes to technology enabled processes.

- **Functional Interoperability and Health Information Exchange:** Assist eligible professionals in connecting to available health information exchange infrastructure(s), including community health information organizations (HIOs), enterprise HIOs, and point-to-point health information exchange.

- **Meaningful Use Reporting**: Ensure that providers are making progress towards MU and collecting data appropriately so that the MU measures are accurate and reportable.

DHCS reimburses the technical assistance vendors using a "milestone-based" formula similar to that used by the ONC to support the RECs. The milestones factor in the need for technical assistance throughout all three stages of MU. The number of payments for each milestone are limited to the number of EPs assigned to each CTAP contractor. Payments are issued to contractors for each milestone as listed below:

- $500 per eligible professional who has signed a technical assistance acknowledgement/agreement;

- $500 per eligible professional who has signed or is included in a legally binding contract or agreement for health information exchange (HIE);

- $750 for each eligible professional enrolled who is a specialist or solo practitioner;

- $1500 for each AIU attestation submitted by an eligible professional;

- $2250 for each attestation by an eligible professional for first year Stage 1, Stage 2, and Stage 3 MU attestations;

- $1500 for each attestation for MU after the first year of any stage.

The graphic below displays the accomplishments of the CTAP program as of July 2019. Over seven thousand providers were enrolled based on CTAP efforts. CTAP providers are

approaching their maximum enrollment and, as of July 2019, CTAP contractors have enrolled 7,254 eligible professionals, which constitutes 97 percent of the 7,500 enrollment cap. Previous CTAP activities focused primarily on AIU which, beginning 2017, became unavailable. The number of CTAP providers receiving assistance with HIE increased by 90 percent from July 2018 to July 2019 compared to the same period in the previous year. The CTAP program has been successful in assisting 2,188 specialists. As of July 2019, the number of CTAP providers that received assistance for MU Stage 2 (19 percent) and MU Stage 3 (33 percent) has also increased since the previous year. CTAP has also been successful in assisting professionals to receive 4,754 MU payments for progression to a new stage of MU. In addition, there have been 4,012 payments to professionals for achieving a subsequent year of MU within the same stage.

TABLE 9: NUMBER OF CTAP MILESTONES ACHIEVED
JULY 2019
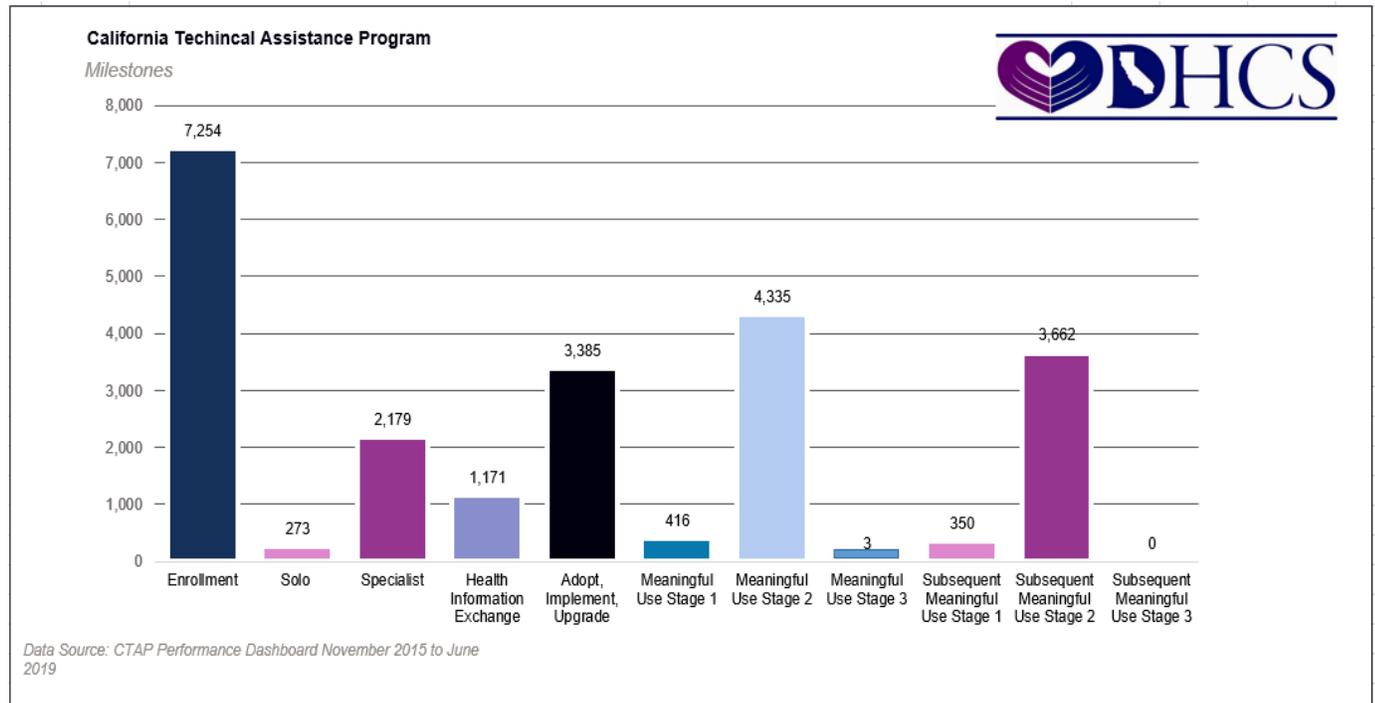
In August 2018, DHCS surveyed eligible professionals using the services of the four CTAP contractors. Data collected over the course of the survey was used to evaluate the quality and value of the technical assistance provided by each CTAP contractor. The survey found that CTAP contractors offered a variety of services related to but not limited to MU, audit preparation, education and guidance, and HIE. Seventy-five percent of respondents reported being very satisfied or satisfied (51 percent and 24 percent, respectively) with the level of assistance received. Forty-six percent had received services from a CTAP contractor for over two years. Additionally, 50 percent reported that the CTAP contractor was very responsive to inquiries. Overall, 73 percent reported that assistance with MU was

the most common service received. Nine percent of respondents reported being very unsatisfied (seven percent) or unsatisfied (two percent). These respondents were contacted for further clarification. After speaking with the respondents, DHCS found that 21 percent of those that initially selected very unsatisfied intended to select being highly satisfied with the assistance received from a CTAP contractor. The other unsatisfied respondents reported issues related to gathering documentation for objectives to concerns regarding the EHR software. At the close of the survey, DHCS provided the overall results and individual reports to each CTAP contractor.

1.9   VULNERABLE POPULATIONS

1.9.1 CHILDREN IN FOSTER CARE IN CALIFORNIA

There are approximately 60,000 children at any given time in foster care in California. As is the case nationally, these children tend to have more complex health care needs than other children and account for a disproportionate share of Medi-Cal expenditures. Nearly half of all children living in foster care in California suffer from chronic illnesses, and children in foster care are three to six times more likely than those in the general population to have significant psychological or behavioral problems. Yet children in foster care receive less than optimal care for a number of structural reasons.

On average, children placed in foster care in California experience two to three changes in foster placements each year. Placement changes are often accompanied by changes in health providers. The existing system for sharing information about a child in foster care is largely based on the passing of duplicate paper forms among caseworkers, public health nurses, foster parents, and health providers. Often providers do not receive forms, or receive forms that are missing crucial information about the child. Inadequate medical records for children in foster care contributes to poor quality health care that, in some instances, can be life threatening. This can include duplication of immunizations, over-prescription of psychotropic medications, misdiagnoses, and subsequent medical errors and omissions based on faulty paperwork. According to Children's Action Network, "doctors often have no reliable birth or immunization records, don't know who has previously treated the child, and have no facts about current and past diagnoses, treatments, or prescriptions."

Electronic exchange of key information for this highly mobile, high-needs population of children can result in greater coordination of care between providers and caretakers. This can increase efficiency, reduce program costs at the state and local levels and significantly improve outcomes for youth in foster care. Early findings from related efforts indicated that information management and coordination of care enabled by a system of electronic information-sharing can result in improved preventive care, decreased hospital stays, improved clinical conditions, and decreased cost of care. After implementation of electronic

information exchange in Milwaukee, Wisconsin, the number of youth in residential programs declined from 364 to 140 per day, psychiatric hospitalizations declined by 80 percent, and the cost of care per child dropped from $5,000 per month to less than $3,300. The improvements were attributed to the electronic record system to facilitate coordinated and individualized services.[9] Children in foster care also experienced a variety of improvements in clinical conditions.

In 2009, The Children's Partnership (TCP) participated in a variety of initiatives promoting electronic care coordination in foster care through two county-level pilots developed over the course of five years. These projects supported the exchange of critical health care-related information among members of a care team and provided foster youth with the tools to manage their own health records. The outcomes of the pilot projects were detailed in the Children's Partnership June 2016 report titled, *Engaging Foster Youth and Foster Parents in Electronic Records Initiatives: Lessons Learned*[10]. Several of the initiatives included in the report were specific to California.

Launched in July 2015, the intent of the [Ventura County Foster Health Link (FHL)](#)[11] is to coordinate and improve health care for the over 1,000 children in foster care. Frequent changes in family placements, health providers, and schools can result in incomplete records that could lead to inappropriate or insufficient health care. By connecting existing health information through a secure electronic health records system, the online portal made critical information available to providers and caregivers for enhanced care-related decision-making, effectively eliminating the patchwork of records that can accumulate. Pre-populated with information from the Child Welfare Services/Case Management System (CWS/CMS) database within the Human Services Agency (HSA), the FHL includes immunization history, well-child visits, allergies and health alerts, diagnoses and treatment, and health provider information. Additionally included is the ability to access timely health information such as medication, lab, and medical test data. Educational information such as schools attended and highest grade level achieved are also stored in the FHL. Health information provided on the FHL website and mobile application are hosted on a secure, encrypted server. System access is only granted to authorized individuals. Medical record information is inaccessible after logging out of the FHL. Within the first three months after launching, 51

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[9] The Children's Partnership, *Improving Outcomes for Children in Foster Care: The Role of Electronic Record Systems (January 2009)*. Accessed May 9, 2018.

[10] The Children's Partnership, *Engaging Foster Youth and Foster Parents in Electronic Records initiatives: Lessons Learned* (June 2016). Accessed April 19, 2018.

[11] Ventura County Foster Health Link. Accessed April 19, 2018.

foster parents and 222 Human Service Agency staff had created FHL accounts[12]. TCP expects continued growth and utilization of the FHL. Future goals for the FHL include development of a version accessible for older foster youth and inclusion of information from Ventura County school systems.

HealthShack[13] is a web-based, patient-owned repository for electronic health information designed for youth and foster care. Wind Youth Services in Sacramento, CA, in collaboration with FollowMe, Inc., an electronic health information vendor, and the University of California- Davis Children's Hospital, implemented HealthShack as a personal health record system, capable of electronically storing community resources and documents such as medical records, birth certificates, school transcripts, and housing history. Initially implemented in 2009, HealthShack is used within the cities of Sacramento and Stockton as well as Placer County. There are plans to expand accessibility of HealthShack to older foster youth in Sacramento County through partnerships with community-based organizations (CBOs) and the Sacramento County Department of Child Protective Services (CPS). Additional project goals included integration into Sacramento County's work with older youth as part of the emancipation process, maximize use at Sacramento CBOs, and for the creation of electronic linkages to allow automatic updates into the youth's record. These linkages would enable HealthShack to reach a wider set of vulnerable youth (such as those in the juvenile justice system) while also linking data available through county and state databases, such as the California Immunization Registry.

Developed by the Girls Health and Justice Institute (GHJI), the Girls Health Screen (GHS), is an evidence-based and gender-responsive medical screen developed for girls who are 11-17 years old and who have entered a detention or other juvenile justice residential programs. Designed to improve the health of girls in the juvenile justice system, the GHS enables juvenile correctional facilities to identify, prioritize, and address the physical and mental health needs of girls entering their care. The GHS was piloted in a locked Los Angeles County Probation Camp between 2012 and 2014. Approximately 180 girls were served and it has become a part of the standard medical intake for those entering the facility. Additionally, a collaborative effort with the Los Angeles County Departments of Health Services, Mental Health and Probation resulted in the implementation of GHS at Probation Camp Scudder during 2012-2013. In 2016, the GHS was expanded to serve 2,000 girls in all three Los Angeles County detention facilities in web format. Originally paper-based, the Electronic Girls Health Screen is now part of the standard medical intake for all girls entering

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[12] The Children's Partnership, *Ventura County Foster Health Link: Connecting Foster Families with Their Essential Records (January 2016)*. Accessed April 19, 2018.

[13] HealthShack. Accessed April 19, 2018.

the Los Angeles county juvenile justice system, which serves approximately 1,600 girls per year. The GHJI has contracted to implement projects in San Joaquin County as well as five additional California counties, several other states, and tribal nations.

DHCS recognizes the great potential to improve coordination across the many programs and services available to children in foster care via the use of EHRs and electronic data-sharing and has been working with stakeholders to develop interventions and pilot projects. The long-term goal is to provide access to information to foster parents, caseworkers, health providers (physical, mental, and dental), public health nurses, educators, attorneys, judges, and older youth in foster care. The California information technology architecture involved may include the statewide HIE infrastructure, the Medicaid Management Information System (MMIS), and the CWS/CMS which is California's version of the State Automated Child Welfare Information System (SACWIS), as well as local systems that vary by county. The goals of this long-term effort are to provide comprehensive information about a child, facilitate communication among providers so they can more effectively coordinate and deliver care to children, afford foster parents and older youth in foster care access to information, and provide youth in foster care with a record of conditions and services received.

1.9.2   IMPROVING PSYCHOTROPIC MEDICATION USE IN FOSTER CARE

In 2012, the California Department of Social Services (CDSS) and DHCS initiated a joint Foster Care Quality Improvement Project (QIP) to improve oversight and monitoring of psychotropic medication use in the foster care population.

In June 2013, the Foster Care QIP issued a draft action plan outlining priority areas.

1. Promotion of cross-system data sharing and use of data for oversight and monitoring.
2. Defining the role of child welfare workers, public health nurses, mental health providers and group home administrators in consent, monitoring and oversight.
3. Implementing oversight and monitoring polices and processes.
4. Improving family and youth engagement.

Workgroups were established to ensure that the deliverables were completed. These workgroups are as follows:

- The Clinical Workgroup developed the tools needed to assist prescribers, pharmacists, and the juvenile courts to improve the provision of psychotropic medications. The tools developed included prescribing protocols and practices for

improved monitoring and oversight. The *Foster Youth Mental Health Bill of Rights*[14] was completed in February 2015. The content is based on an original list of mental health rights developed by the Voices of the Unheard Taskforce, a group formed by members of California Youth Connection (CYC). The document outlined some of the legal rights of California foster youth within the public mental health system. The rights listed are intended to reflect and support the needs expressed by foster youth in their experience as consumers within the public mental health system. Young Minds Advocacy Project staff attorneys, in collaboration with CYC and the National Center for Youth Law, prepared the document, *Quality Improvement Project: Improving the Use of Psychotropic Medication Among Children and Youth in Foster Care*[15], on behalf of DHCS/CDSS with input from stakeholders.

- The Youth, Family, and Education Workgroup was established to focus on the development and dissemination of training materials and information about psychotropic medications for youths, parents, caregivers, social workers, juvenile court staff, and other key figures supporting the foster care population. The *Questions to Ask about Medications*[16] was completed in February 2015. When a child or youth does not feel well, sometimes medications can help. First, a complete assessment of the child or youth's mental and physical health must be done to make sure it is not just a one-time occurrence and that other things may not help; such as getting better sleep, making changes at school or home, or talking with a therapist. Medications that can help children or youth with their feelings, behavior, or how they are doing at school are most effective when a therapist is involved. Additionally, the *Questions to Ask about Medications* document provided caregiver(s) and youth important information about prescription medications.

- The Data and Technology Workgroup conducted analysis of child welfare, managed care, and fee-for-service pharmacy claims data. The data included court authorizations and pharmacy claims that have been reconciled and compiled into reports to assist county child welfare departments monitor court approval of psychotropic medication usage. An additional responsibility of this workgroup was to develop outcome measures as an additional monitoring mechanism.

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[14] DHCS, *Foster Youth Mental Health Bill of Rights*. Accessed April 19, 2018.

[15] DHCS, *Quality Improvement Project: Improving the Use of Psychotropic Medication Among Children and Youth in Foster Care*. Accessed April 19, 2018.

[16] DHCS, *Questions to Ask About Medications*. Accessed April 19, 2018.

The Foster Care QIP established a list of deliverables. To date, the following deliverables have been completed:

- On April 16, 2015, DHCS and CDSS announced the release of the *California Guidelines for the Use of Psychotropic Medication with Children and Youth in Foster Care[17].* While these guidelines were not codified mandates for providers of mental health and/or social services, they were developed for use in conjunction with existing mandatory state regulations for the population addressed. This document is comprised of a guidelines section with four appendices. The guidelines describe the basic principles and values, include a guide to a treatment plan which summarizes best practices from national guidelines, other states guidelines, and California counties mental health services policies and protocols. Prescribing standards for psychotropic medication by age groups are included in the appendix for the Foster Care QIP[18]. Parameters for psychotropic medications indications, dosing and monitoring were adopted from the Los Angeles County Department of Mental Health (LACDMH)[19]. Recommendations to address challenges in the management of complex cases[20] and the associated decision tree[21] excerpted from the guidelines are available to prescribers. Providers are encouraged to review and discuss the Guidelines with care teams and to integrate them into daily practice.

- Interagency agreements (IA) between CDSS, DHCS, and counties were established to share pharmacy claims data, administrative health data, and child welfare services data. The combined data is shared with county departments of child welfare services to improve coordination of care. As of spring 2018, all counties have entered into an agreement with the state.

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[17] California Department of Social Services (DSS) and Department of Health Care Services (DHCS), *California Guidelines for the Use of Psychotropic Medication with Children and Youth in Foster Care 2018 Edition*, Accessed April 19, 2018.

[18] DSS and DHCS, *Appendix A: Prescribing Standards of Psychotropic Medication Use by Age Group*. Accessed April 19, 2018.

[19] DSS and DHCS, *Appendix B: Parameters for Use of Psychotropic Medication for Children and Adolescents*. Accessed April 19, 2018.

[20] DSS and DHCS, *Appendix C: Challenges in Diagnosis and Prescribing of Psychotropic Medications*. Accessed April 19, 2018.

[21] DSS and DHCS, *Appendix D: Algorithm (Decision Tree) for the Prescribing of Psychotropic Medications*. Accessed April 19, 2018.

Data shared under the agreements has been used to publish five new Healthcare Effectiveness Data and Information Set (HEDIS) measures, including 5 measures published in *Measuring Quality Care: Safe and Judicious Use of Antipsychotics in Children & Adolescents*[22]**.** These published utilization measures include the following:

1. Follow-up care for children prescribed attention deficit hyperactivity disorder medication, which includes an initiation phase and a continuation phase.
2. Follow-up after hospitalization for mental illness, which includes a 7-day and a 30-day follow-up.
3. Use of first-line psychosocial care for children and adolescents on antipsychotics.
4. Use of multiple concurrent antipsychotics in children and adolescents. Of children who receive one antipsychotic medication for 90 continuous days, provides the percentage of children who had two or more antipsychotic medications during any 90 day period.
5. Metabolic monitoring for children and adolescents on antipsychotics. This measure assesses the performance of metabolic monitoring for those children exposed to antipsychotic medications beyond a single acute treatment.

1.9.3   MENTAL HEALTH AND SUBSTANCE USE DISORDERS

Persons with severe mental health and/or substance use (MH/SU) disorders have traditionally been unable to access the proper coordination of physical and mental health services necessary to promote recovery and wellness. This contributes to multiple chronic medical illnesses for these persons with increased costs for the medical system, and eventually results in much earlier deaths. A critical issue in the current health reform and economic climate is that Medicaid has become the single largest payer of mental health services for low-income people, accounting for about 40 percent of all public-sector spending on mental health services in 2001 compared with 21 percent in 1971. An April 2016 report from the Center for Health Care Strategies found that nationally, beneficiaries with behavioral health diagnoses account for 48 percent of total Medicaid expenditures[23]. A study of Californians in the fee-for-service Medi-Cal system prepared by JEN Associates compared the 11 percent of Medi-Cal enrollees with a serious mental illness (SMI) to all

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[22] NCQA, *HEDIS Measures for the Safe & Judicious Use of Antipsychotic Medications in Children and Adolescents*. Accessed June 4, 2016.

[23] Center for Health Care Strategies, Inc., *Key Reasons to Integrate Physical and Behavioral Health Services in Medicaid (April 2016, Infographic)*. Accessed April 10, 2018.

Medi-Cal fee-for-service enrollees. The SMI group's spending was 3.7 times higher than the total population ($14,365 per person per year compared with $3,914)[24].

In 2004, voters in California approved the Mental Health Services Act (MHSA). This imposed a 1 percent tax on the incomes of individuals making more than $1 million per year. These funds are used primarily at the county level to support wellness, recovery, and resiliency for adults and older adults with severe mental illness as well children and youth with serious emotional disturbances and their family members. A portion of the MHSA funds have been specifically set aside for Capital Facilities and Technological Needs pursuant to California Welfare and Institutions Code (W&I Code) Section 5892(a)(2) to promote the efficient implementation of the MHSA. Most counties have used these funds to acquire and maintain certified EHRs for mental health providers. Cerner, NetSmart, and Echo are the primary EHRs used.

Information exchange in a behavioral healthcare setting requires a different approach than primary care. For example, one major difference between behavioral health data and primary care is that a typical consumer is in treatment over a longer period of time encompassing multiple episodes with a number of treatment providers. A behavioral health information exchange (BHIE) can address this unique situation by utilizing a hybrid federated/repository model of data sharing to ensure the consumer record is complete. These and other differences support the need for a health information exchange in order to fully meet the unique data exchange requirements of behavioral health and maximize the effectiveness of behavioral healthcare for consumers. Another example of behavioral healthcare's unique requirements relates to sharing a continuity of care document (CCD). A CCD is designed to share acute care information, but cannot support key behavioral data such as multi-axial diagnosis codes and treatment plan information. Unlike a primary care HIE, a BHIE utilizes a modified CCD to ensure critical information can be shared, while still maintaining CCD standards. Privacy and security rules for consent, use and disclosure and reporting are different for those within this population than those in the general population of health care treatment. Additional cultural issues around family member support, stigma and trust are paramount for successful mental health HIE. This requires a strong governance and policy that will allow for standards and requirements to be shared among all community based providers. As quality measures and reporting tools are in their infancy, focused resources will be needed to coordinate the outcomes analysis necessary to improve care. These resources are lacking in the counties and a combined approach to reporting through an efficient HIE will allow for rapid adoption of best practice quality improvement measures for this population.

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[24] JEN Associates, *Beneficiary Risk Management: Prioritizing High Risk SMI Patients for Care Management/Coordination (February 2010).* Accessed April 10, 2018.

The electronic exchange of behavioral health data has many benefits for both providers and patients. In July 2015, the California Health Care Foundation (CHCF) released *Fine Print: Rules for Exchanging Behavioral Health Information in California*[25]. In addition to examining the legal framework as related to the exchange of behavioral health information in California, the report also profiled initiatives developed in San Diego and Alameda Counties as well as by Inland Empire Health Plan (a Medi-Cal managed care plan operating in San Bernardino and Riverside Counties). These initiatives, described below, explore the capabilities and any barriers preventing the sharing of some behavioral health information as well as substance abuse records under both federal and California law.

The Council of Community Clinics (CCC) in San Diego County is comprised of 16 private, nonprofit clinics that provide primary care and behavioral health services. Funding received from the 2004 California Mental Health Services Act (MHSA) added behavioral health professionals in FQHCs to address the behavioral health needs of patients. Additional funding from the federal Substance Abuse and Mental Health Services Administration (SAMHSA) allowed for additional screenings for patients receiving specialty mental health treatment for serious physical illnesses by primary care professionals in behavioral health programs. The goal of the pilot was to reduce the 25-year mortality disparity for people with severe mental illness. Data sharing occurred by allowing participating professionals access to the medical records used at the facility or location where care was provided. While there were some successes with data sharing over the course of the pilot project, summary-of-care documents could not be shared as the county-used EHR system did not interface with other EHRs. Alameda County developed a data sharing initiative which focused on the severely mentally ill, who often have serious or chronic physical medical conditions and poorer physical health outcomes. Launched in 2012, the pilot was a part of the county's "10 by 10" campaign, which aimed to increase the life expectancy for mental health consumers by 10 years within 10 years. Specialty mental health claims data was submitted to the county, who then made the claims data available to providers via a secure flat file. The providers had the option to upload the data and create a patient medical home. The medical home provider could decide whether to scan or manually enter the information into the EHR system. Under this pilot, only data that could be shared legally in California without the consent or authorization of the patient was exchanged. At the time of the CHCF report, the majority of the data shared was for adults. The project has since been modified to include the mental health data of minors as well.

Inland Empire Health Plan (IEHP) is a Medi-Cal managed care plan utilized by San Bernardino and Riverside Counties. One of the first managed care plans to have a behavioral health department, the IEHP created a secure portal where behavioral health

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[25] California Healthcare Foundation, *Fine Print: Rules for Exchanging Behavioral Health Information in California (July 2015)*. Accessed April 10, 2018.

care providers could add treatment plans or medication lists. The beneficiaries' other treating providers could view, download or print that information. The portal supports one-way sharing of information. When a treatment plan is uploaded to the portal, the behavioral health provider is required to attest that beneficiary consent was obtained in order to share the treatment plan with other providers. After consent is given, the treatment plan can be accessed by any health care provider with an established a treatment relationship with the beneficiary. For those beneficiaries who do not consent, the treatment plan is uploaded to the portal; however, access is blocked for other treating providers. Claims data is used to establish the treatment relationship between the provider and beneficiary.

The CHCF report concluded that behavioral health providers could share mental health information to enhance treatment and coordination of care. While the initiatives were deemed successful, none were able to achieve seamless digital sharing due to the lack of interoperability of EHR technology. In order to ensure that health information was available, additional steps outside the EHR systems were needed.

San Joaquin County has developed a project in which behavioral health providers using the Clinician's Gate EHR contribute a limited data set of mental health patient data to the San Joaquin Community Health Information Exchange which can also be accessed by medical health providers. Data regarding psychotherapy notes and substance abuse cannot be shared. Patients must "opt-in" to allow sharing of behavioral health data and patient consent is required for secondary sharing of behavioral health data by providers.

In June 2017, CHHS developed the *State Health Information Guidance (SHIG) on Sharing Behavioral Health Information*.[26] The SHIG clarifies the circumstances under which mental health and substance abuse disorder information can be exchanged. This is accomplished through the use of scenarios developed through comprehensive research and stakeholder input. The various scenarios further illustrate when it is appropriate to exchange health information. The guidance contained in the SHIG is considered to be authoritative but non-binding.

Released in August 2019, DHCS clarified telehealth policies for managed care health plans in All Plan Letter (APL) 19-009[27]. While selected psychiatric diagnostic and therapeutic

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[26] CHHS, *State Health Information Guidance (SHIG) on Sharing Behavioral Health Information*. Accessed April 27, 2018.

[27] DHCS All Plan Letter 19-009, Telehealth Services Policy (August 5, 2019). Accessed September 3, 2019.

services are existing benefits[28], the APL allows DHCS to further utilization of telehealth services for behavioral health needs.

1.10   BROADBAND INTERNET ACCESS

High-speed Internet access, or broadband, has become a fundamental aspect of the infrastructure needed to educate youth, create jobs, promote public safety, improve the standard of living, and deliver essential services like health care. In 2006, Executive Order S-23-06 established the California Broadband Initiative and the associated California Broadband Task Force (CBTF). The CBTF conducted a yearlong study that identified broadband availability and developed recommendations toward improving broadband accessibility. Released in January 2008, the CBTF's report included seven recommendations to further the implementation of statewide broadband access. Of those, five recommendations cited the need to build, improve or leverage existing broadband infrastructure. Health care related recommendations included a collaborative effort between public and private sectors to create a sustainable statewide e-health network.

Established by legislation in 2010 (S.B. 1462)[29], the California Broadband Council began work to implement the recommendations outlined in the CBTF report. Federal funds received from the National Broadband Plans supported these efforts, which added to the $420 million received in broadband infrastructure grants from the federal American Recovery and Reinvestment Act of 2009 (ARRA) and the $57 million in California Advanced Services Fund grants. The Council also worked to ensure increased coordination with other state departments and agencies involved in the expansion of broadband accessibility, adoption, and usage throughout the state.

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[28] DHCS, Telehealth Frequently Asked Questions, Accessed September 3, 2019.

[29] SB 1462 (Padilla, Chapter 338, Statutes of 2010). Accessed April 19, 2018.

FIGURE 4: CALIFORNIA BROADBAND AVAILABILITY (2016)[30]

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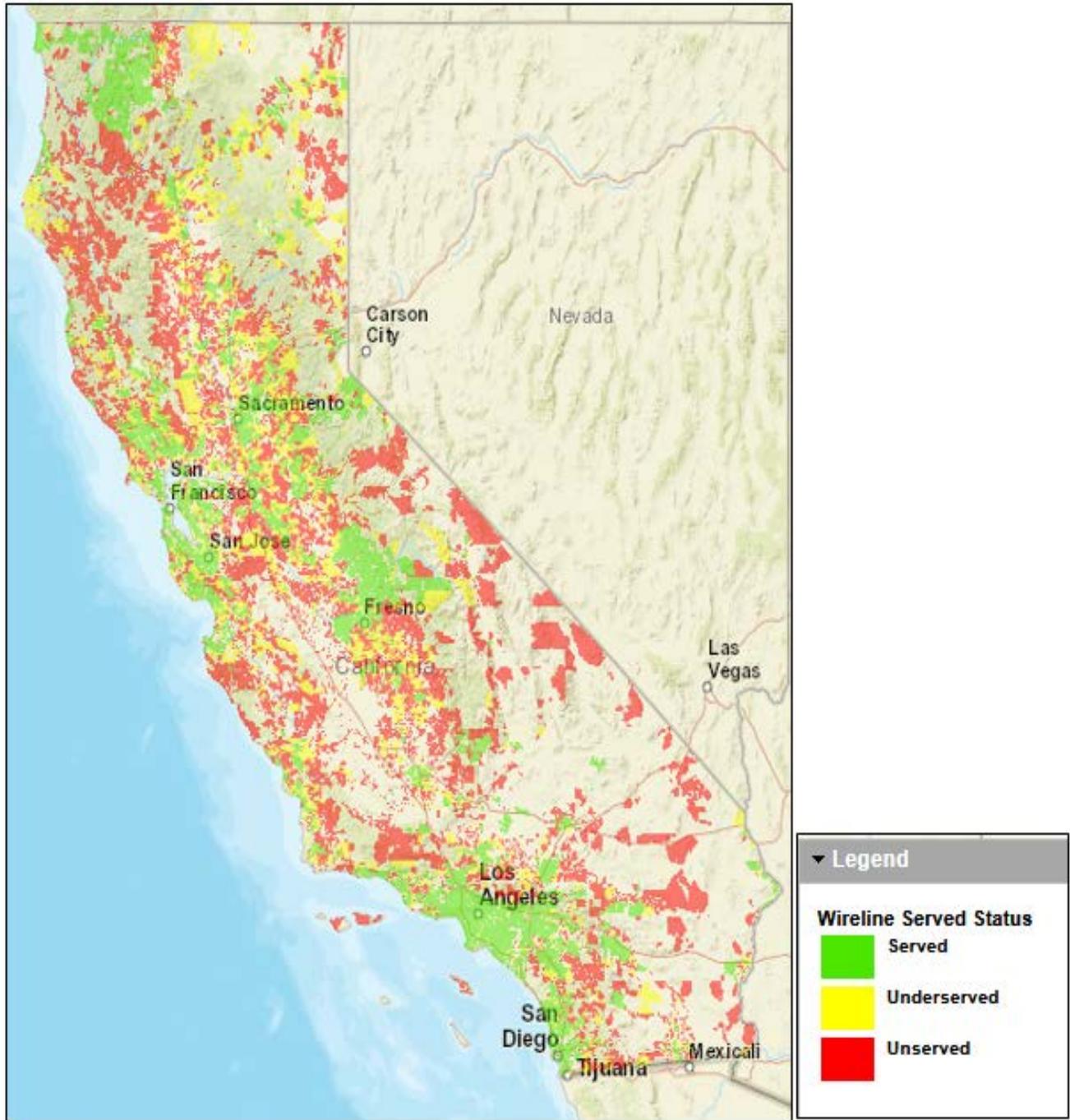
[30] California Interactive Broadband Map (Data as of: 12/31/2016). Accessed February 17, 2017.

1.10.1   CALIFORNIA TELEHEALTH NETWORK

The California Telehealth Network (CTN) serves over 500 safety net clinics and hospitals in rural and medically underserved communities across California. CTN sites receive up to a 65 percent subsidy on broadband services funded by the Federal Communications Commission (FCC) Healthcare Connect Fund (HCF). The HCF makes it financially feasible to deploy broadband to healthcare providers in rural and medically underserved urban communities to improve health care delivery primarily through the use of virtual, telemedicine patient consultations and other broadband enabled healthcare applications. As demand for access to specialty care physicians in rural areas continues to grow, CTN's site count doubled in 2016 and CTN expects to reach 1,000 sites within the next two years. Participating CTN sites report that they are conducting over 20,000 live telemedicine consultations over the network annually, which is an increase of 65 percent over 2016. The vast majority of the patient served are Medi-Cal beneficiaries.   Of the consultations performed via telemedicine, roughly 70 percent are for behavioral health services that are not generally available in rural communities. CTN also operates the California Telehealth Resource Center (CTRC) which is one of 12 regional telehealth resource centers funded by the federal HRSA to foster telehealth adoption, and provide training and implementation support for California health care providers. CTN plans to continue to focus on the expansion of broadband and telehealth availability in rural and underserved communities to improve health care delivery.

FIGURE 5: CALIFORNIA COUNTIES WITH A CTN CONNECTION (2015)[31]
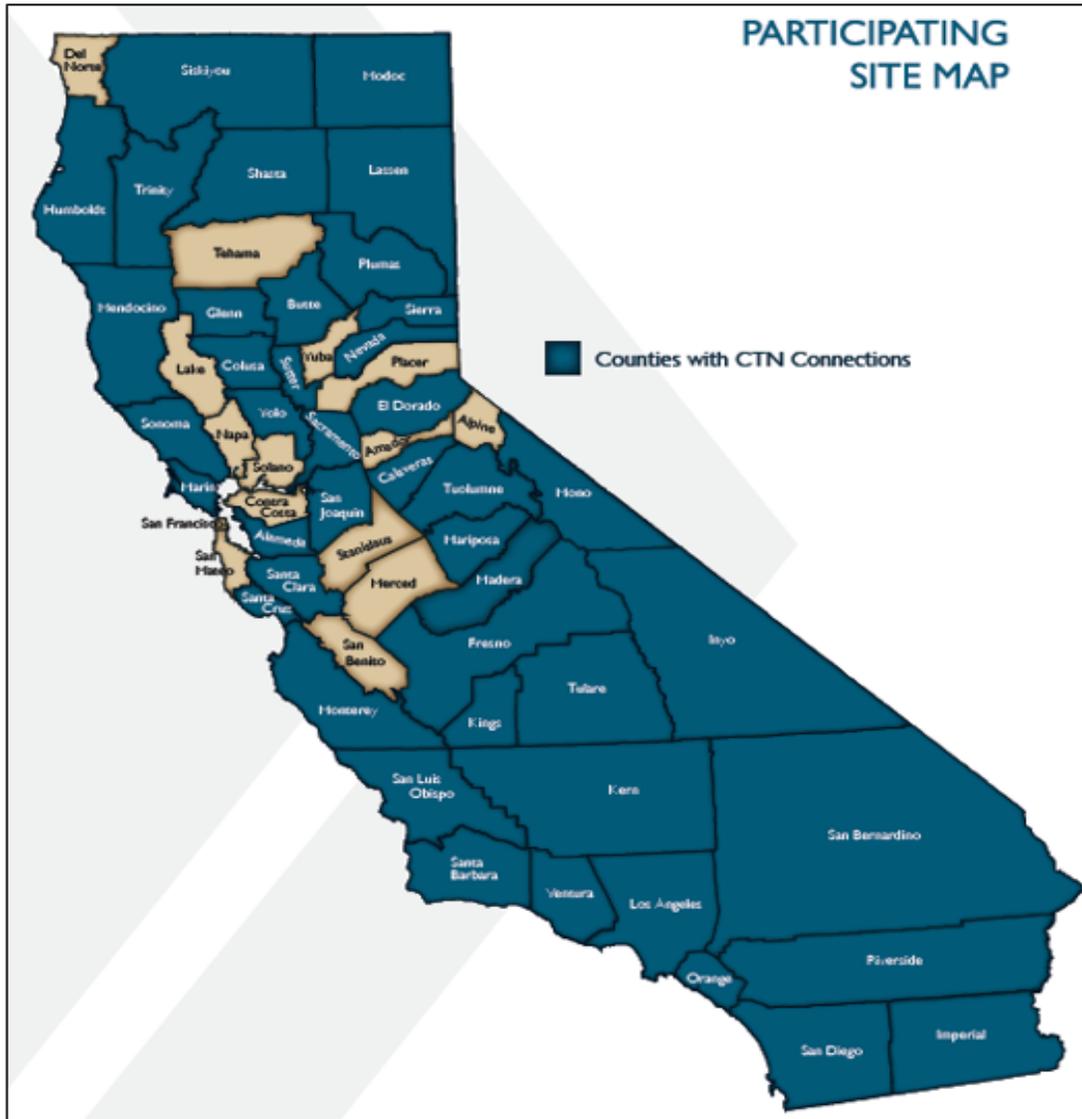
In 2007, the FCC Rural Health Care Pilot Program granted CTN a $22.1 million award in funding. Funding from the award was used to increase access to acute, primary and preventive healthcare in rural California. The Broadband Technology Opportunities Program (BTOP) provided additional funding through a grant administered by the National Telecommunications and Information Administration. CTN and the University of California, Davis Health System were awarded $13.8 million in BTOP funds which supported the adoption of broadband and technology enabled healthcare throughout the State. Funds received from BTOP provided training opportunities made available through partnerships

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[31] CTN, *California Telehealth Network 2015 Annual Report.* Accessed April 24, 2018.

with libraries, community colleges, health organizations and public safety sites. Before ending in 2014, BTOP funding provided telehealth equipment to over 100 safety net health care locations and supplied the initial funding for CTN administrative expenses and staffing. Grant funding received from United Healthcare, the Blue Shield of California Foundation, the Health Resources and Services Administration, California Emerging Technology Fund, Kaiser Permanente, USDA Rural Utility Service, and the California HealthCare Foundation have supported continued operations of CTN. In August 2016, the CTN received a USDA Rural Development Distance Learning and Telemedicine (DLT) grant. The awarded DLT funds have allowed CTN to complete the second phase of infrastructure enhancements to the broadband network and launch web based video conferencing, allowing the CTN network to continue to provide much needed services to Medi-Cal and safety net patient populations. Funding from the grant provided telehealth equipment and software for rural CTN clinics and hospitals.

1.10.2   DIGITAL 395 MIDDLE MILE PROJECT

In August 2010, the National Telecommunications & Information Administration (NTIA) announced that the California Broadband Cooperative was awarded funding for the Digital 395 Middle Mile project. The project proposed building a new 553-mile fiber network that followed U.S Route 395 between northern and southern California. The Eastern Sierras region between Barstow, California and Carson City, Nevada were dependent upon a decades-old telephone infrastructure and had limited broadband capabilities. These limited capabilities left areas of the California Central Valley and eastern California unserved. The service area for Digital 395 encompassed 35 public safety entities, 47 K-12 schools, 13 libraries, 2 community colleges and 2 universities in addition to 36 municipalities, 6 Indian reservations, 2 military bases, 15 healthcare facilities, and 104 government offices.[32] Efforts related to the project were completed in 2014.

1.10.3   DIGITAL 299 BROADBAND PROJECT

In February 2017, Inyo Networks, INC. (Inyo) submitted a grant request for funds from the California Advanced Service Fund (CASF) to provide high-capacity broadband services to communities along the California State Route 299. The proposed project covers rural Northern California between Redding and the California coast, including the areas of Shasta, Trinity, and Humboldt counties. Digital 299 would provide broadband connections for 307 underserved households, with as many as 102 schools, colleges, research institutions, hospitals, clinics, public safety, tribal lands, and other institutions. [33]The project

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[32] The Digital 395 Middle Mile Project. Accessed on: April 25, 2018

[33] *California PUC Approves 299 Broadband Infrastructure Project*. Accessed on: April 25, 2018

also included service to five community fire stations, including two Cal Fire stations, the Trinity County Sherriff's office, six medical and health institutions, and other areas that are at risk for wildfires and earthquakes. It is anticipated that the project will be mostly completed in three years.

1.11 TELEHEALTH

Telehealth is a collection of methods used to enhance health care, public health, and health education delivery and support while using telecommunications technologies. Virtual medical, health, and education services can be delivered via a broad variety of technologies. These services may include, but are not limited to, dentistry, counseling, physical and occupational therapy, home health, chronic disease monitoring and management, disaster management, and consumer and professional education.

In California, telehealth represents an additional tool used in a medical practice, not a separate form of medicine. Standards of care remain the same whether the patient is seen in-person, through telehealth or another method of electronically enabled health care. DHCS considers telehealth a cost-effective alternative to health care provided in-person, particularly in underserved areas. Telehealth services can decrease travel time, enable providers to see more patients, and increase the amount and type of specialty services available to patients. These efforts toward improved patient care were reflected in the California Telehealth Advancement Act of 2011(AB 415)[34], which removed the limitations upon where a telemedicine appointment could occur. Coverage and reimbursement policies detailed in AB 415 also aligned with federal regulations and included all California-licensed health professionals as telehealth providers, including all Medi-Cal managed care plans that contracted with DHCS. More recently, DHCS provided additional clarification[35] regarding telehealth, which allows healthcare providers to select the type of telehealth modality used. This change, in additional to more closely aligning DHCS with CMS, also serves to better facilitate specialty consults for those in the Medicaid program.

Legislation at the federal level, specifically the 21st Century Cures Act, requires reporting on methods that could improve quality of care for those in a Medicaid program. Telehealth was specifically cited in the act as a possible method to deliver safe and effective health care services. Through examination of high-volume services, it may be possible to discover which services are best suited to telehealth. In addition to the examination of services,

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[34] AB 415 (Logue, Chapter 547, Statutes of 2011). Accessed on: April 25, 2018

[35] DHCS, Telehealth Services Policy, All Plan Letter 19-009, August 5, 2019. Accessed August 28, 2019.

further review would assist in the identification of possible barriers that may prevent the expansion of telehealth services.

The CTRC provides additional support of telehealth efforts. Established in 2006, the CTRC is a federally designated Telehealth Resource Center for California whose primary focus is to assist the clinics that serve the state's rural and medically underserved population. Since September 2012, the technical assistance offered by CTRC was provided to 517 organizations throughout the state. Approximately 60 percent of these organizations received continued support from CTRC through multiple technical assistance visits. CTRC encourages the use of telehealth through on-site, customized hands-on training, which was provided to 141 safety net clinics, rural and critical access hospitals. CTRC also conducted 12 regional telehealth implementation workgroups.

EXPANDING CAPACITY FOR HEALTH OUTCOMES ACT

Project ECHO (Extension for Community Healthcare Outcomes), started by the University of New Mexico in 2003, is a continuing medical education model that uses technology to connect specialty physicians with primary care providers in rural areas. The project successfully showed its capacity to provide best-practice specialty care and reduce health disparities. In December 2016, President Obama signed S. 2873, the Expanding Capacity for Health Outcomes Act (ECHO ACT). The ECHO Act is intended to improve health care in medically underserved areas. With a focus on telehealth, the ECHO Act builds upon the successes of Project ECHO though encouraged development and use of technology-enabled collaborative learning. The ECHO Act requires that the impact on behavioral health, implementation of public health programs (syndromic surveillance), rural health care delivery and other areas be examined to evaluate the impact. The program will test the use of telehealth modalities to connect specialists with other health care professionals for the purpose of case-based learning, disseminating best practices, and evaluating outcomes.

In California, universities and health plans developed initiatives that followed the Project ECHO model. UC Davis has launched the UC Davis ECHO Pain Management Telementoring, which is a peer-to-peer video conference-mentoring program. The program supports community-based, primary care physicians and developed methods for safe and effective management of chronic pain within the community. The curriculum includes an introduction to pain management and mental health, pain management essentials, opioids, and other topics. Lessons learned from previous sessions noted changes in a provider's opioid prescribing habits as well as increased efforts to assist patients with tapering off opioid medications.

FIGURE 6: REPORTED CHANGES TO OPIOID PRESCRIPTION HABITS (2017)[36]
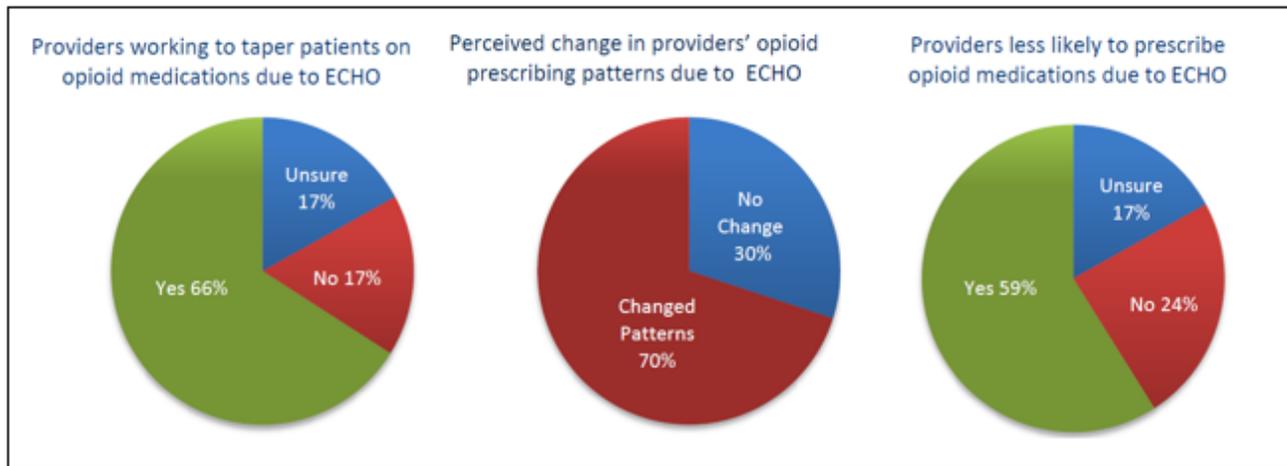
Similarly, UCSF Medical Center developed the Hepatitis C ECHO Program. This program develops partnerships between multi-disciplinary specialists and health care providers in underserved communities through education and guidance on the treatment of patients with hepatitis C. UCSF provides educational support to participating primary care providers. Using web-based technology, specialists are able to co-manage patients and reduces variations in care, while treating more patients within their communities at a lower cost.

Health plans implemented collaborative efforts with Project ECHO. Starting in spring 2012, the project ECHO LA Knowledge Network was supported by L.A. Care Health Plan. The project linked specialists and primary care providers with the goal of improved care for chronic, common, and complex illness for patients in underserved communities. Health plans also recognized the benefits of Project ECHO in rural communities. In July 2015, the ResolutionCare FUND and the Partnership HealthPlan of California (PHC) announced a nine-month pilot project. The pilot program created primary care teams to increase the availability of specialty hospice and palliative care resources.

1.11.1   TELEMEDICINE

For purposes of Medi-Cal, the term telemedicine is used to make it distinct from telehealth. Telemedicine allows for the use of medical information exchanged from one site to another using interactive telecommunications equipment that includes, at a minimum, the use of audio and video equipment to enable two-way, real-time, interactive communication between the patient and provider. In rural areas, specifically where distance and provider shortages are barriers to care, telemedicine services can increase patient access to

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[36] UC Davis Health, Pain Management Telementoring. Accessed on: April 25, 2018

services. As of February 2017, Medi-Cal providers had submitted a total of 6,780 claims for telemedicine-related treatment.

In 2013, researchers at UC Davis found that telemedicine consultations with pediatric specialists reduced the number of drug errors in eight rural emergency departments. The study examined care provided to 234 patients. In 73 cases, a pediatric critical care specialist conferred with an emergency physician, the patient, a nurse, and a parent or guardian. Some specialty consults, 85 cases or 36 percent, were conducted by telephone, while for 76 cases, the emergency department did not receive a specialist consult. The study found that the error rate for the telemedicine group was 3.4 percent compared to 10.8 percent for telephone consultations and 12.5 percent without a consult[37]. In addition to reduced error rates, the UC Davis study found that the inclusion of a telemedicine consultation resulted in a higher quality-of-care than those without a consultation.

UC Davis Children's Hospital created its own Pediatric Telemedicine Program. The program provided physicians and patients real-time remote consultation and evaluation through interactive, high-definition video and audio communication. A study conducted in 2013 found that only 3 percent of pediatric critical-care specialists practice in rural areas. The UC Davis program was able to offer 24/7 expertise to remote health-care providers, without the need to transfer a patient to UC Davis Children's Hospital. The program has found that telemedicine consultations improve the quality of care for seriously ill and injured children in rural areas. On average, UC Davis specialists conduct 2,800 inpatient and outpatient telemedicine consultations each year[38].

Other health plans have examined the use of telemedicine to provide specialty care to members residing in rural areas. In May 2014, Partnership Health Plan (PHP) contracted with TeleMed2U to provide adult specialty telemedicine within 14 rural counties. Since implementation, PHP reported telehealth usage in 11 locations. The eight health centers provide care to over 45,000 members. Through the collaborative effort between PHP and Telemed2U, many patients gained access to specialty services not otherwise available.

1.11.2   TELEDENTISTRY

Teledentistry is the application of telemedicine technology and resources in the practice of dentistry. This may include, but is not limited to, dental consultation, education, and public awareness provided in the same manner as telehealth and telemedicine. Information and

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[37] UC Davis Health, Telemedicine reduces pediatric medication errors in rural emergency departments (November 25, 2013). Accessed on May 3, 2017.

[38] UC Davis Children's Hospital, UC Davis Pediatric Telemedicine Program. Accessed April 25, 2018

communication technologies are utilized, including the electronic exchange of diagnostic image files, such as radiographs, photographs, video, optical impressions, and photomicrographs of patients. The American Dental Association (ADA) defined teledentistry as the electronic exchange of dental patient information from one geographic location to another for interpretation and/or consultation among authorized healthcare professionals. The ADA further clarified in November 2015 that teledentistry can take a number of forms including:

- Live video: Two-way interaction between a patient and dentist using audiovisual technology.

- Store and forward: Recorded health information- such as radiographs, photos, video, digital impressions or photomicrographs- is transmitted through a secure electronic communications system to the practitioner. The practitioner then uses the information to evaluate the patient's condition or render a service outside of real-time or live interaction.

- Remote patient monitoring: Personal health and medical information is collected from an individual in one location then transmitted electronically to a provider in a different location for use in care. This could be used in a nursing home setting or in an educational program.

- Mobile health: Health care and public health practice and education supported by mobile communication devices such as cell phones, tablet computers or personal digital assistants. This could include apps that monitor patient brushing or other home care.

On September 27, 2014, Governor Brown approved and chaptered Assembly Bill (AB) 1174[39], Chapter 662, which amended Section 14132.725 of the WIC. Under AB 1174, "face-to-face contact between a health care provider and a patient is not required under the Medi-Cal program for teledentistry for store and forward," which enabled Medi-Cal Dental providers to utilize this alternative treatment modality. Effective July 2015, DHCS permitted the use of teledentistry for select dental services in an effort to increase access to care for underserved populations. In addition to legislative efforts, CMS approved California State Plan Amendment (SPA) CA-15-010[40], which approved the use of live transmissions as well as further guidance regarding clarified requirements and program coverage surrounding the use of teledentistry.

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[39] AB 1174 (Bocanegra, Chapter 662, Statutes of 2014). Accessed on: April 25, 2018

[40] California State Plan Amendment (SPA) CA-15-010. Accessed on: April 25, 2018

Tracking the use of teledentistry among Medi-Cal Dental providers has remained difficult because current dental terminology codes do not include a specific code for teledentistry services. Dental providers submitting a claim for teledentistry instead submit using an unspecified, miscellaneous procedure code, which is commonly accompanied with narrative documentation.

In an effort to advance the utilization of teledentistry, the University of the Pacific, Arthur A. Dugoni School of Dentistry, developed and directed a six-year pilot project from 2010 to 2016 aimed at improving oral health for groups who do not receive dental care on a regular basis and have high rates of untreated dental disease. This project, called the Virtual Dental Home (VDH), utilized geographically distributed, telehealth-connected teams that provided preventive and early intervention treatment in a community setting. This community-based oral health delivery system reached people where they lived, worked, or received educational or social services and reduced the need for the patient to travel in order to receive dental care. The VDH received financial support from approximately 27 funding agencies and organizations, totaling over $5.5 million. Of the 11 communities and approximately 50 established sites in California, services were provided for 3,442 patients who received 7,967 visits. The system relied upon collaboration between dentists in dental offices and community-based dental hygienists and dental assistants. Through the partnership efforts, those patients in need of more complex treatment received referrals by the VDH to a dentist in the area. Results presented in the Virtual Dental Home Demonstration Report (June 2016)[41] cited that over 90 percent of patients seen were enrolled in the California Medicaid program and received Medi-Cal Dental benefits. The reported results are indicative of children seen over the course of the VDH project. The VDH is now in its seventh year of delivering oral health services to California's vulnerable and underserved populations.

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[41] University of the Pacific, Arthur A. Dugoni School of Dentistry, Report of the Virtual Dental Home Demonstration (June 14, 2016). Accessed on: April 9, 2018

1.12   HEALTH INFORMATION EXCHANGE

In August 2006, President Bush issued an executive order stipulating that health care programs sponsored by the federal government should promote high quality and efficient health care through the adoption of health information technology and set the goal of nationwide use of electronic health records by 2014. In March 2007, California's governor issued an executive order (S-06-07) calling for extensive HIT adoption and set a goal of achieving 100 percent electronic data exchange within the next 10 years. In order to meet this goal as well as the needs of a diverse group of stakeholders, California leaders recognized that the development of information systems needed to be a collaborative effort between public and private sectors.

In 2007 and 2008, California submitted CMS Transformation Grant applications for the Medi-Cal Health eSolutions project. The project goals included improved quality of care, reduced medication errors as well as reduced costs through the exchange of standardized clinical information between Medi-Cal and its providers. While California did not receive grant funding, the state was included in the Multi-State HIT Collaborative and benefited from the lessons learned from the Transformation Grant awardees and best practices for MU. The Transformation Grant process also led to collaborative projects with the Northern Sierra Rural Health Network, the California e-Prescribing Consortium, Redwood MedNet, Long Beach Network for Health, California Regional Health Information Organization (CalRHIO) and numerous other HIE/HIT efforts throughout the state.

1.12.1   STATE DESIGNATED ENTITY

In 2010, as part of the HITECH Act, CHHS was awarded a federal State HIE Cooperative Agreement grant of $38.8 million designated to support and expand the use of HIE technology[42]. As the State Designated Entity (SDE), CHHS and the California Office of Health Information Integrity (CalOHII) established a cooperative agreement. CalOHII served as the governance entity responsible for executing the strategic and operational plan for HIE. As a qualified SDE, CalOHII was responsible for developing and advancing mechanisms for information sharing across the health care system. As part of the strategic plan, the Cooperative Agreement focused on:

- Developing necessary technical and trust standards and agreements;

- Providing grants to local HIOs to expand and improve operations;

- Removing barriers to HIE interoperability;

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[42] CHHS, Health Information Exchange Archive. Accessed on April 25, 2018.

- Coordination with Medi-Cal and other state and local public health programs to support meaningful use of electronic health records and population health management; and

- Convening, educating, and informing HIE stakeholders.

Much of the work in the strategic plan represented collaborative efforts of volunteer public and private stakeholders in the California healthcare community. Stakeholders had the opportunity to share ideas and feedback through committees, workgroups, webinars, and statewide summits. These collaborative efforts led to a culture change, which reflected a focus on patient needs. One such effort was the California Privacy and Security Advisory Board (CalPSAB). CalPSAB conducted an analysis of existing state laws in California and collaborated with the University of California, Hastings College of Law to develop the California Health Information Law Index (CHILI). The posted database cross sectioned all current federal and state statutes pertaining to health information, providing California's health care policy makers and stakeholders with a compendium of the relevant laws. CalPSAB recommended the adoption of affirmative patient consent (opt-in) for electronic exchange of health information in California, however this recommendation met with considerable opposition from stakeholders.

To help provide clarity in the policy debate, CalOHII awarded three State Health Information Exchange Demonstration project grants to examine issues of patient access to and consent to provide health information. Participants in the project grants included:

- San Diego Regional Health Information Exchange (SDRHIE) used a central policy of opt-in consent for sharing patient data through a HIO. Rady Children's Hospital was the only participating SDRHIE organization that had fully implemented an opt-in consent management process during the course of the Demonstration Projects.

- Santa Cruz Health Information Exchange (SCHIE) tested a process that automatically included patient data in the HIO while simultaneously notifying the patient of their right to opt-out of sharing that information. While at the physician's office, patients receive instructions and notification.

- Inland Empire Health Information Exchange (IEHIE) also tested a similar opt-out process that involved storing the patient's information and consent in the HIO. Additionally, patients receive an educational pamphlet by mail or during the registration process with the provider.

The projects found that:

- Lack of standard, consistent terminology is a barrier to successful HIE.

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- When offered the choice, patients generally agree to share health information electronically.
- Previously-held beliefs about the consent management process may not be true.
- EHR and technology standardization is a barrier to electronic consent management.
- Lack of standardization among HIOs is a barrier to interoperability.
- Trust remains a critical component to successful HIE.

After a thorough evaluation and analysis of the findings from the Demonstration Projects, CalOHII recommended the following in order to successfully advance private and secure exchange of health information in California:

- Establish a common vocabulary and change the conversation to reduce confusion with terminology, create a standardized language, and move away from patient permission as a single policy lever.
- Continue to let HIOs determine the patient permission model that is most appropriate for the community they serve.
- Patients must be provided an opportunity to make a meaningful choice regarding the sharing of their protected health information.
- Technology solutions must evolve to support granularity and electronic permission capture.
- Governance of interoperability is needed to sustain efforts.

CalOHII also administered the Cooperative Agreement Grant Program to help create various programs throughout the state to promote and successfully exchange health information. Notable initiatives through the Cooperative Agreement Grant were:

- The California Immunization Gateway Service, developed for the California Department of Public Health, replaced the manual process previously used to register, test, and submit immunization data to the California Immunization Registry (CAIR). Electronic submission of immunization data assists providers meet MU requirements.

- Project INSPIRE, which focused on efficient and effective data capture at the point of care that is accessible to all of the patient's providers. The purpose of this demonstration project was to determine whether capturing data at the point of care beyond that in the cancer registry could be useful for cancer care or other conditions.

- The Partners in E program attempted to address low e-prescribing rates among independent pharmacies in California. Since many pharmacists did not feel prepared to handle continual electronic communication and technical dilemmas, a train-the-trainer program was developed in which students from California's eight schools of

pharmacy provided one-on-one assistance to independent community pharmacists that serve Medi-Cal patients.

- CalOHII and the State Emergency Medical Services Authority (EMSA) collaborated in promoting the real-time exchange of health information in emergency settings. An environmental assessment found that while the state's 33 local EMS agencies were converting from paper to electronic patient care records, most were not able to transmit that information about the patient electronically to the hospital. The grant assisted Contra Costa, Monterey, and Inland Counties Emergency Medical Agency conduct demonstration projects to advance HIE in their service areas. The work conducted under this effort served as the foundation for a successful grant application from the ONC for HIE in EMS.

1.12.1.1 CAL ECONNECT AND CALIFORNIA HEALTH E-QUALITY

Starting in 2010, CHHS contracted with Cal eConnect to implement HITECH-funded programs in line with California's HIE strategy. Cal eConnect was responsible for establishing the ground rules for appropriately sharing health information among clinicians, hospitals, health plans, patients, and government agencies. Cal eConnect managed the procurement of HIE services, to establish the HIE Trust Framework and Connectivity Services, which included Entity and Individual-Level Provider Directories. This was intended to complement existing regional HIE services by facilitating the directed and secure exchange of electronic patient health information statewide and across state borders. The services and associated program designed by Cal eConnect were intended to enable Medi-Cal and Medicare providers to meet HIE-related MU criteria, beginning with e-prescribing, laboratory data exchange, and public health reporting.

In 2012, programmatic activities were transferred through an interagency agreement from Cal eConnect to California Health e-Quality (CHeQ), part of the UC Davis Health System's Institute for Population Health Improvement (IPHI). The CHEQ program played an integral role in the advancement of HIE in California and supported implementation of HIE programs across California by building a trusted exchange environment, improving public health capacity, accelerating HIE adoption, and monitoring HIE progress. CHeQ's California Trust Framework (CTF) documented policies and the technologies that facilitated exchange between HIOs without requiring point-to-point data sharing agreements. The CTF aligned with the efforts of the National Association for Trusted Exchange (NATE) and sharing provider directory information. Additional efforts included facilitating the electronic exchange of health information within a trusted environment, funded and supported regional HIE planning, infrastructure expansion, and interface development. CHeQ also promoted sharing immunization, laboratory and care information.

CHeQ developed the HIE Acceleration award, which provided funding for a variety of HIE related projects which increased HIE connectivity throughout the state. In 2013, CHeQ distributed $7.5 million throughout California for HIE activities to 20 dedicated organizations. CHeQ reported that recipients of the acceleration award established 270 connections between HIE participants (hospitals, clinics, and providers), increasing the ability to transmit health information electronically. From those efforts, 17 community HIOs were able to serve regions extending to the Oregon border and as far south as San Diego. The CHeQ report also found that community HIOs continued to expand and cited that clinical message traffic for Redwood MedNet increased by nearly 200 percent between 2011 and 2013. Following is a brief summary of several community HIE initiatives in California supported by HIE acceleration awards:

- Alliance Medical Center, a founding member of the Redwood MedNet community HIO, provides HIE services to more than 230 health care providers in the Mendocino, Sonoma, Marin, Lake, Napa and Colusa Counties. Redwood MedNet's expansion was accelerated when the community based FQHCs Mendocino Coast Clinics, Alliance Medical Center, and Sonoma Valley Community Health Center, combined with Mendocino Coast District Hospital, Healdsburg District Hospital, and Sonoma Valley Hospital. Redwood MedNet provides HIE services to more than 500 healthcare providers in Mendocino, Lake, Sonoma, Napa, and Marin counties.

- Tulare and Kings Counties received a planning grant from CHeQ to develop an HIO strategic plan. In 2013, both counties coordinated efforts with Fresno and Madera counties to form the Central Valley HIO. Central Valley HIO contracted with Inland Empire HIE to provide a new community HIO with HIE services.

- eConsult was created by L.A. Care Health Plan, Department of Health Services of Los Angeles County, Health Care Los Angeles, MedPOINT Management and the Community Clinics Association of Los Angeles County. eConsult is a web-based care coordination platform that enables primary care providers and specialists to share and discuss patient care electronically. In 2013, 2,000 primary care providers in 182 clinic/health center sites used eConsult across L.A. County.

- Orange County Partnership Regional Health Information Organization (OCPRHIO), founded by Monarch Healthcare, formed in 2012 with grants from CHeQ. OCPRHIO was created to improve coordination of care and integrate HIT/HIE into Orange County's health care delivery system. Providers are able to view patient information from a single access point.

FIGURE 7: CHEQ HIE ACCELERATION AWARDS (2013)[43]
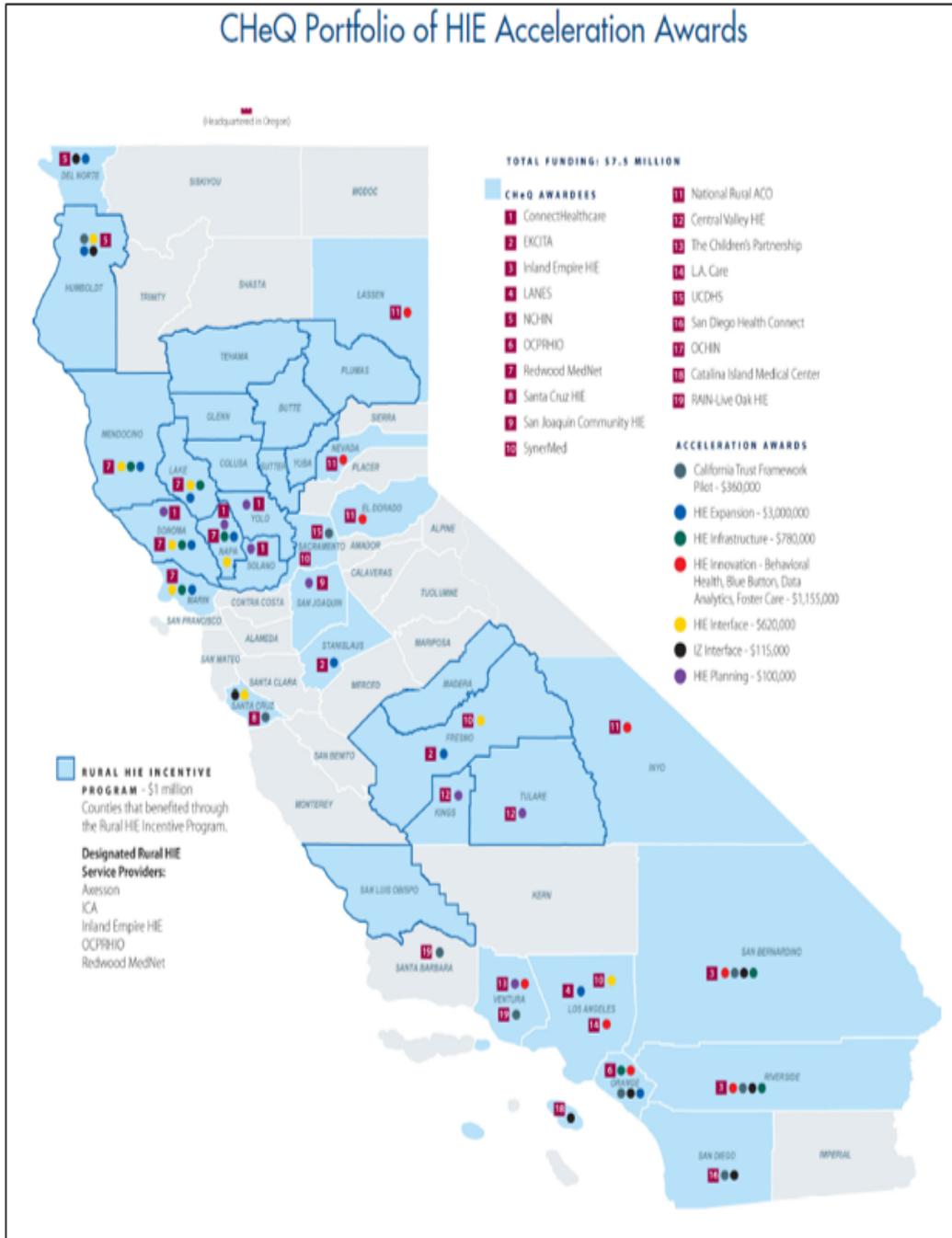
[43] CHHS, *California HIE Landscape (2013)*. Accessed on April 25, 2018.

CalOHII published *The State of California HIE, The Legacy of California's State HIE Cooperative Agreement Program[44]* in January 2014, which highlighted the opportunities offered by the $38 million Cooperative Agreement grant in California. The report stated that funding received from the grant further encouraged the adoption of health information exchange throughout the state and provided the impetus needed to launch large-scale health information exchange. It also allowed the state the opportunity to experiment with various models to determine which solutions would be best suited for specific environments and populations. Although the Cooperative Agreement grant ended on February 7, 2014, the program continues to have a positive impact in stimulating HIE in California. This final report can be found in Appendix 6.

1.12.1.2 CALIFORNIA ASSOCIATION FOR HEALTH INFORMATION EXCHANGE AND THE NATIONAL ASSOCIATION FOR TRUSTED EXCHANGE

Created in 2013, the California Association for Health Information Exchange (CAHIE) is a 501(c)3 organization and a statewide group comprised of individuals and organizations working together to advance the secure sharing of health information with the intent to improve health care quality and lower costs. CAHIE members include community and enterprise HIOs, care delivery organizations, health plans, emergency medical service agencies, government organizations (including DHCS), associations, and collaborating organizations, such as the NATE. The goals of the CAHIE are to:

- Promote a regulatory environment in California that enables providers, consumers, and other stakeholders to exchange and appropriately access health information.
- Create a collaborative environment that fosters and supports cooperation among members and other stakeholders to solve difficult problems as well as share lessons learned in health information exchange.
- Promote the growth of electronic information exchange through creating and supporting information exchange initiatives.
- Enable and support high-value information exchange among unaffiliated communities.
- Provide services in support of statewide health information exchange activities and initiatives.

The CAHIE supports statewide HIE through voluntary self-governance via the California Data Use and Reciprocal Support Agreement (CalDURSA) and the California Trusted Exchange Network (CTEN). The CalDURSA is a multi-party agreement developed by the CAHIE and modeled after the federal DURSA that defines and specifies policies, procedures, and processes establishing trust and the framework for organizations to

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[44] CHHS, The State of HIE: The Legacy of California's State HIE Cooperative Agreement Program (January 2014). Accessed on April 25, 2018.

exchange data through the CTEN. The CalDURSA allows organizations to participate in both the CTEN and the eHealth Exchange, a national network. The CTEN is a virtual network based on the policies, procedures and processes established by the CalDURSA. Unlike other trust frameworks, the CTEN is able to support any transaction that shares health information for purposes of treatment, payment, or health care operations. DHCS utilizes the CalDURSA and the CTEN participation as a requirement for the CTAP organizations to receive funding for assisting providers in meeting HIE milestones.

The NATE was created to help state HIE officials develop and establish standards and best practices. The NATE is a not-for-profit membership association focused on developing trusted exchange among organizations and individuals with differing regulatory environments and exchange preferences. Through its membership in the NATE, California continues to provide leadership through the identification of policy and governance drivers. Members of the NATE and stakeholders work together to find common solutions that achieve greater gains in the exchange of health information and improved patient outcomes while laying groundwork for safe interstate electronic transfer of secure health information. CAHIE is a member of NATE. In 2015, the NATE made the first release of NATE's Blue Button for Consumers (NBB4C) Trust Bundle[45]. Future plans include extending its trust community beyond direct secure messaging to include other consumer-centric technologies.

1.12.2 COMMUNITY HEALTH INFORMATION EXCHANGES

Given California's size and diversity, legislators and stakeholders have communicated a preference for a decentralized HIE infrastructure that combines public and private efforts. A decentralized model, or neutral connectivity model, allows the flexibility needed to adapt to California's complex healthcare ecosystem. Several regional or community HIOs have created exchanges that meet specific needs of providers within the communities or regions that they serve. Autonomy at the local level has allowed for the creation of innovative solutions to meet the needs of local users. These community HIOs carry out most of the HIE activities in their communities and are responsible for most of the interoperability between provider systems, and communicate with each other when the situation calls for health information outside of their own service areas.

Community HIEs have typically been independent, 501(c)(3) or state-recognized nonprofit organizations, in some cases initiated through grants or contributions from sponsoring or anchoring participants, but sustained through ongoing fees for provided services. CHeQ

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[45] National Association for Trusted Exchange, Nate Blue Button for Consumers (NBB4C) Trust Bundle. Accessed on: April 25, 2018.

sought to identify the health information and interoperability needs of California generally, both within medical trading areas of community HIOs and statewide among HIOs, hospital systems, etc. Health care needs may be determined by the local or regional geographic operational boundaries, which reflect referral relationships, patterns of care, and the flow of patients among participating organizations. These efforts are often linked with the predominant provider organizations in the community that may focus special attention on the community's unique health needs (e.g. diabetes, behavioral health). Community HIOs:

- Serve a wide variety of provider types, including acute care hospitals, public health departments, primary care providers, specialists, ancillary services, payers, emergency medical service providers, home health, skilled nursing facilities, and others.

- Provide a wide variety of services, including Direct messaging, longitudinal community records, alerts, text-based reports, public health reporting, consumer access, quality measures, referrals, and others; and exchange a wide variety of data types, including allergies, lab results, admission, discharge, and transfer messages, text reports, discharge summaries, immunizations, prescribed and filled medications, radiology reports, care plans, eligibility information, claims, and others.

Currently, there are more than 14 community HIEs in 39 of 58 counties statewide. A significant amount of the state's HIE funding has been directed toward medically underserved populations and regions. California's rural areas face challenges related to access to health care, health information technology, and broadband access. Additionally, providers in rural areas may not have access to the health IT resources of a large hospital or health system.

FIGURE 8: COMMUNITY HEALTH INFORMATION ORGANIZATIONS IN CALIFORNIA (2016)

Community Health Information Organizations (HIOs) in California

DECEMBER 2016

Central Coast Health Connect: *Monterey*
Central Valley HIE: *Fresno, Kings, Madera, Tulare*
Cottage Community HIE: *Santa Barbara*
ConnectHealthcare: *Sonoma, Napa, Solano, Yolo*
LANES: *Los Angeles*
Manifest MedEx: *Alameda, Fresno, Imperial, Los Angeles, Madera, Mariposa, Mono, Napa, Orange, Riverside, San Bernardino, San Diego, San Joaquin, Solano, Sonoma, Stanislaus, Tulare, Yolo*
North Coast Health Improvement & Information Network: *Humboldt*
OCPRHIO: *Imperial, Los Angeles, Orange*
RAIN Live Oak Technology: *Santa Barbara*
Redwood MedNet: *Humboldt, Lake, Marin, Mendocino, Napa, Sonoma*
Sac Valley Medshare: *Butte, Colusa, Glenn, Lassen, Modoc, Plumas, Shasta, Siskiyou, Sutter, Tehama, Trinity, Yuba*
San Diego Health Connect: *San Diego, Imperial*
San Joaquin Community HIE: *San Joaquin*
Santa Cruz HIE: *Santa Cruz*

Indicates HIO presence within county

Notable activities of Community HIEs include:

- Recipients of CHeQ's HIE acceleration awards established a total of 270 connections between HIE participants (hospitals, clinics, and providers) to transmit health information electronically. Several of California's HIE efforts included participation in the Nationwide Health Information Network (NHIN) demonstrations and successfully tested the exchange of clinical information using NHIN standards and protocols. Participating organizations included Kaiser Permanente, Western Health Information Network (WHIN), ER Connect-Orange County, Redwood MedNet and Santa Cruz HIE. Some of these HIE efforts have not only demonstrated the capability to connect via the Nationwide Health Information Network gateway to other California HIE entities, but also to HIE entities outside of California. The participation of community HIEs in testing the Nationwide Health Information Network gateway demonstrated their commitment to interoperability and national data exchange standards.

- In April 2010, UC San Diego received $15.3 million in funds from the ONC, as one of the 17 Beacon Communities working toward building and strengthening local IT infrastructure. The San Diego Beacon Community (SDBC) identified the goal of expanding HIT availability among providers to improve medical care decisions and overall care quality. Additional goals included patient engagement of health management as well as a reduction in unnecessary and redundant testing. With a primary focus on San Diego and Imperial Counties, the SDBC worked in partnership with seven hospitals, two insurance carriers, and eleven FQHCs and community health clinics. In October 2012, four hospital health systems and two medical groups were participating in the HIE. This included over 175,000 unique patient records, over 2,500 unique users, and approximately 900 patients who consented to sharing medical records for treatment purposes. In 2013, the SDBC transitioned into San Diego Health Connect, which has continued HIE related efforts.

- In October 2013, Sharp HealthCare, a nonprofit integrated regional health care provider, expanded its HIE by joining San Diego Health Connect community HIO. The goal of joining the community HIO was to improve care by making health information available to other providers in the San Diego region. As of 2015, these include Scripps Health, University of California San Diego, Rady Children's Hospital San Diego, Kaiser Permanente, U.S Department of Veteran Services, Navy Medical Center of San Diego and 14 other community clinics.

1.12.3 ENTERPRISE HEALTH INFORMATION EXCHANGE ORGANIZATIONS

Several of California's integrated health systems currently exchange data between and among their affiliated physicians and hospitals. Many of these systems have multiple

locations and facilities spread across Northern and Southern California, with some systems extending into neighboring states. While many of these systems offer a suite of HIT applications and modalities to their hospital-based clinicians, health systems vary in their provision of HIT outside of the hospital walls. Over the past decade, these health systems have made significant investments in their HIT infrastructure and staff. While technical approaches and vendors vary among health systems, all of the health systems follow national standards and many participate in technical workgroups at the state and national levels. Today health systems vary in their interactions with and participation in community HIE efforts, ranging from no involvement to robust participation in collaborative activities.

In 2015, DHCS contracted with researchers at UCSF to identify methods that Medi-Cal-focused HMOs and Independent Practice Associations (IPAs)/Management Service Organizations (MSOs) could use to encourage increased EHR adoption and progression toward MU among small practices. The study found that small practices need support for HIE and assistance with EHR software updates, patient portals, messaging, and reporting. Given the larger organizational structure of IPAs/MSOs, these organizations have greater access to resources that could benefit smaller practice types in efforts to advance adoption of an EHR, MU progression, and greater HIE participation. Many HMOs and some IPAs work collaboratively to develop community HIOs. One of the conclusions of the survey was that HMOs and IPAs/MSOs should assist small practices in establishing electronic connections to community HIOs which would help meet HIE-related MU objectives. This could also assist HMOs and IPAs/MSOs in meeting data needs related to notifications, care coordination, and analytics.

Health systems largely operate as closed networks and the information largely remains proprietary and locked within those networks unless addressed through statewide collaboration as exhibited by Manifest MedEx, formerly known as Cal INDEX. Founded in August 2014, through funding from Blue Shield of California and Anthem Blue Cross, Cal INDEX was a nonprofit organization working toward development of an HIE with services throughout the state. Initially, only containing Blue Shield and Blue Cross Records, in January 2017, Cal INDEX merged with IEHIE. The combined entity, called Manifest MedEx, contains 11.7 million claims records from Cal INDEX founding members Blue Shield of California and Anthem Blue Cross with the 5 million clinical patient records of IEHIE and its 150 participating partners.

The investments in these integrated systems should be leveraged as statewide HIE advances while, at the same time, encouraging sustainability models. Their implementations are being considered and incorporated into state HIE efforts in a collaborative and opportunistic way to ensure interoperability across all of California's providers. Many large health systems with hospitals and ambulatory care have developed

information exchange networks, connecting affiliated hospitals and physicians using diverse EHR platforms.

1.12.4 HEALTH INFORMATION TECHNOLOGY GRANTS

CALIFORNIA STATE INNOVATION MODELS

On April 1, 2013, California was awarded $2.6 million to develop the State Innovation Model (SIM) Design Grant[46]. The SIM grant supported development of the State Health Care Innovation Plan which addressed all three aspects of the Triple Aim- better health, better health care and lower costs. The funding supported the following HIT activities:

- Identified best practices for HIE in support of care coordination and development of tool kits to facilitate use of HIE.
- Development and promotion of third party business case analyses illustrating the savings produced by technologies.
- Commissioned research regarding options for ensuring data collection to inform cost and quality of care improvement efforts on a statewide basis.

California leveraged activities undertaken during the [Let's Get Healthy California (LGHC)](LGHC)[47] project. Since much of the project's work was in progress, California was able to utilize the network of stakeholders gathered for LGHC efforts to focus on SIM Design activities. The LGHC task force developed a 10-year plan, which envisioned a healthier California. While the period of the Innovation plan was three years, it provides the opportunity to focus on initiatives that can set in motion effective changes over the long term. Many of the initiatives built on current efforts or were in conjunction with other efforts that occurred in both the public and private sectors.

California utilized existing state and national initiatives including capitated payment models, accountable care organizations, bundled episode payments, the Coordinated Care Initiative for dual-eligible Medi-Cal and Medicare beneficiaries, and the state's Section 1115 Waiver, called Medi-Cal 2020, to inform their model design. California's design process involved a broad range of advocacy groups that addressed its diverse and geographically spread population in order to develop a model that reflected California's complex health care and financing environment. CMS recently granted California's request to renew the waiver,

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[46] CMS, [State Innovation Models Initiative: Model Design Awards Round One](link). Accessed on: April 25, 2018.

[47] CHHS, [*Let's Get Healthy California Task Force Final Report (December 19, 2012)*](link). Accessed on: April 25, 2018.

thereby extending Medi-Cal 2020 activities until December 31, 2020. The extension supports the state's efforts toward adopting alternative payment methodologies and supporting integration of care.

CMS awarded the State of California $3 million for model design under the second round of the SIM initiative on December 16, 2014. The grant has further refined the development of the State Health Care Innovation Plan.

CALIFORNIA EMERGENCY MEDICAL SERVICES AUTHORITY

On July 28, 2015, the California Emergency Medical Services Authority (EMSA) received a two-year grant, titled PULSE +EMS from the Office of the National Coordinator for Health Information Technology for $2.75 million. The project established interoperability and exchange of clinically relevant patient information to aid in the response to widespread disasters between the Patient Unified Lookup System for Emergencies (PULSE) and the emergency medical services system (EMS). CAHIE served as the technical advisor to EMSA for integrating the PULSE and EMS components in the PULSE +EMS project.

The PULSE component of PULSE +EMS provides a means for volunteer healthcare professionals working in non-traditional health facilities, such as field hospitals and evacuation centers, to obtain critical health information on victims and evacuees during a large scale medical emergency. It works by retrieving care summaries and other health information from HIOs and health systems across the state using nationally recognized standards and leveraging the CTEN operated by CAHIE. Access to PULSE is controlled by EMSA's Disaster Healthcare Volunteers system, which is California's version of the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP).

CAHIE was responsible for facilitating collaboration among the various participants to convene the PULSE Workgroup. The PULSE Workgroup, comprising stakeholders in California, defined the characteristics and requirements of PULSE, including any recommendations regarding technical standards. National standards were selected for PULSE in order to share health information with minimal impact on participating organizations, while CTEN policies and procedures were selected to establish trust with participating organizations and systems. CAHIE used the recommendations of the PULSE Workgroup to document PULSE system requirements as well as the basis for conducting user acceptance testing.

CAHIE also took the lead in planning, conducting, and documenting the results of a table-top drill of PULSE in June 2017. PULSE project participants included Santa Cruz HIO, UC Davis Health, OCPRHIO, and Sutter Health.

EMS provides pre-hospital care and entry, typically through 9-1-1, into the emergency medical care system, providing evaluation, treatment, and transportation of patients to a hospital emergency department, trauma, heart attack, or stroke center. The +EMS component of PULSE +EMS expanded the capabilities of EMS by integrating them into an HIO, enabling exchange between ambulances and the HIO and hospitals. +EMS therefore created a paradigm in which EMS becomes a full participant in the HIO, with the capability to implement the Search, Alert, File, and Reconcile (SAFR) model defined by EMSA:

- **Search** a patient's health record for problems, medications, allergies, and end of life decisions to enhance clinical decision making in the field
- **Alert** the receiving hospital about the patient's status directly onto a dashboard in the emergency department to provide decision support
- **File** the emergency medical services patient care report data directly into the patient's electronic health record for a better longitudinal patient record
- **Reconcile** the electronic health record information including diagnoses and disposition back into the EMS patient care report for use in improving the EMS system

+EMS enabled EMSA to pilot new EMS workflows in two regions by connecting EMS providers with local hospitals in two different community HIOs. The pilot demonstrated the way EMS can share prehospital data with other providers as well as how HIEs can support quality and process improvement. San Diego Health Connect (SDHC) and OCPRHIO were selected as the participating HIOs. EMSA will use what was learned from these pilots to expand SAFR to more local EMS agencies across the state in future projects.

After the successful drill completion in June 2017, PULSE was moved into production. EMSA reported that the objectives of the PULSE +EMS ONC grant were met in July 2017. SAFR capabilities developed in SDHC and OCPRHIO are also functioning today.

More recently, in response to the fires in Southern California, CAHIE completed expedited on-boarding of eHealth Exchange. This allowed PULSE and other participants of CTEN to connect to and query eHealth Exchange members not yet participating in CTEN for health information of victims and evacuees of that disaster. CAHIE is exploring becoming a long-term participant in eHealth Exchange to make it possible for PULSE to query national systems such as the VA, DOD, and national pharmacy chains.

1.13 E-PRESCRIBING

The number of providers utilizing e-prescribing in California has steadily increased over the years. This expansion may be attributed to an increased demand for HIT, funding availability to acquire a certified EHR as well as incentive payments to providers for achieving MU through the Medi-Cal EHR Incentive Program. According to the latest data available from

Surescripts, there were 9.7 billion e-prescribing transactions in 2015, which equated to a 48 percent increase over 2014[48]. An estimated 53 percent of physicians in California used e-prescribing EHR software in April 2014 compared to 3.5 percent in December 2008 according to the same data source. In April 2014, 94 percent of California community pharmacies were enabled to accept e-prescriptions compared to 75 percent in December 2008, representing an increase of 25 percent[49]. The percentage of new and renewal prescriptions sent electronically increased to 53 percent in 2014 from only 3 percent in 2008.

MEDI-CAL PROVIDERS AND PHARMACIES

Connection between utilization data and Medi-Cal claims data has been difficult to establish due to the lack of a common provider identifier. As a solution, OHIT and CHHS requested that the ONC work with Surescripts to include a National Provider Identifier (NPI) field in the standard dataset sent to states to link Surescripts data with Medicaid data. Several other states submitted a similar request. In 2010, DHCS matched Surescripts subscribers against Medi-Cal provider files and determined that approximately 9.3 percent of Medi-Cal providers were connected for e-prescribing. Medi-Cal providers connected to Surescripts represented only 5 percent of Medi-Cal's prescription claims volume. Unfortunately, the data needed to produce an updated comparison of e-prescribing utilization among Medi-Cal providers is not available.

BARRIERS TO E-PRESCRIBING AND UTILIZATION

In June and July of 2012, CHHS surveyed 100 independent pharmacies with the highest volume of Medi-Cal claims to study perceived barriers and benefits of e-prescribing implementation and utilization. The report focused on barriers identified by independent pharmacies as well as assessed the needs for assistance with implementation and active use of e-prescribing. The survey collected comments from independent pharmacy managers, which allowed the state the opportunity to explore where further assistance could be offered. In addition, independent pharmacies were able to voice concerns and obstacles faced during implementation and utilization.

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[48] Surescripts, 2015 National Progress Report. Accessed on: April 25, 2018.

[49] The Office of the National Coordinator for Health Information Technology, ONC Data Brief No. 18, July 2014. Accessed on: April 25, 2018.

FIGURE 9: E-PRESCRIBING IMPLEMENTATION IN HIGH MEDI-CAL VOLUME INDEPENDENT PHARMACIES

Total Response Summary	Total Responses
Number of contacted pharmacies	100
Completed Surveys	44 18 Connected 26 Non-connected
Incomplete Surveys	30
No response/Disconnected	26

Many pharmacists did not feel technologically prepared to supervise the processes of continual electronic communication or able to manage possible technical dilemmas presented during the workday. The survey found that independent pharmacies can benefit from additional training and further technical assistance beyond the initial training provided by software vendors. These independent pharmacies identified major obstacles during the adoption of e-prescribing as both financial and technical in nature. Software related issues, when associated with implementation or upgrade costs for new or existing systems, coupled with transaction fees and e-prescribing network costs were identified as the most frequently perceived barriers to e-prescribing implementation. These issues, when experienced on a daily basis, became a hindrance to implementation and continued utilization of e-prescribing technology.

E-PRESCRIBING EDUCATION AND TRAINING

PARTNERS IN E PROGRAM

The Partners in E program is an example of an innovative program that supported the expansion of e-prescribing across the state by educating pharmacy students about health IT. Modeled after two successful teaching programs developed by the UCSF Department of Clinical Pharmacy on both state and national levels, the Partners in E program was implemented as a strategy to increase the adoption and use of e-prescribing in California. Developers of the program recognized there was a need for health professional schools to include lectures on topics related to health information technology given the lack of available content experts. The curriculum provided pharmacy students training in key health information technology content areas while integrating e-prescribing into a normal workflow process.

An established train-the-trainer program model was used by the Partners in E program to disseminate the health IT curriculum in a standardized and consistent format across schools of pharmacy in California. Additional efforts included working with three California RECs to

conduct the e-prescribing User Improvement project. This project, through collaboration with selected providers and pharmacies, focused on the identification and correction of causes for underutilization. Findings from the project identified that providers would benefit from additional technical assistance resources.

In fall 2012, the UCSF School of Pharmacy developed and piloted the Introduction to Pharmacy Informatics course. A total of 65 students enrolled and completed the elective course. These students also participated in evaluation surveys designed to assess attitudes and knowledge of HIE. The survey results helped to develop online teaching modules as well as revise existing course materials. Through the expansion to pharmacy schools, the curriculum become a statewide collaborative effort, as there was increased access to a variety of content experts. Twelve modules were developed due to the collaborative efforts.

In winter and spring 2013, UCSF piloted an experiential course for students who had completed the Introduction to Pharmacy Informatics course. Pharmacy students in the San Francisco Bay area were matched with independent community pharmacies not participating in e-prescribing. Students received instruction regarding available tools and terminology prior to begin onsite outreach with community pharmacies. In parallel to the UCSF experiential program, Partners in E began collaborative efforts with faculty from all accredited California schools of pharmacy, which was incorporated into course curriculum in January 2013. By December 2013, approximately 1,000 students completed the course work. Faculty from all accredited California schools of pharmacy received training to implement Partners in E in the existing program. The following pharmacy schools participated in the train-the-trainer programs:

- California Northstate University
- Loma Linda University
- Touro University- California
- University of California, San Diego
- University of the Pacific
- University of California, San Francisco
- University of Southern California
- Western University of Health Sciences

Since participating in the train-the-trainer programs, all eight-pharmacy schools have implemented the Partners in E curriculum. By April 2015, faculty from over 70 colleges and universities had received access to the Partners in E program materials. Faculty from 25 colleges and universities have also attended the Partners in E train-the-trainer program. Through partnering with the Healthcare Information and Management Systems Society (HIMSS), the UCSF School of Pharmacy, was able to make all 14 Partners in E modules

available online, enabling unified curriculum content for all schools of pharmacy. As course materials are available online, universities, hospitals, and healthcare organizations outside of California are able to review and use Partners in E program materials.

E-PRESCRIBING OF CONTROLLED SUBSTANCES

The finalization of the Electronic Prescribing of Controlled Substances (EPCS) Rule by the DEA in June 2010 did not immediately change e-prescribing practices for Medi-Cal providers. The regulations allowed providers the option to write prescriptions of controlled substances electronically. Implementation delays may have resulted due to a slow rate of EPCS certification. In fall 2012, the CHCF in an effort to understand implementation challenges surrounding EPCS, awarded grants to AltaMed Health Services, Rady Children's Hospital, and Shasta Community Health Center to develop an EPCS pilot project. The nine-month pilot allowed sites to establish the EPCS capability within the existing EHRs and encouraged the participation of local pharmacies. The final report, titled *Evaluation of the Electronic Prescribing of Controlled Substances Pilot (November 2013)[50],* detailed benefits and barriers to utilization of EPCS functions. Participants found that when the software worked as intended, there were significant benefits in using EPCS related to improved productivity and patient safety, potential cost savings, improved security when prescribing controlled substances, as well as an improved ability to track prescriptions and analyze physician prescribing habits. Barriers to more substantial use of EPCS included a lack of adoption among physicians and pharmacies, associated audit costs, reliability of EPCS technology, and registration requirements to identity-proof prescribers. Through analysis, the report concluded that the expansion of EPCS utilization is dependent upon adoption by prescribers and pharmacies as a collaborative effort.

Data from Surescripts reported that, in 2015, nationwide e-prescribing of controlled substances increased 667 percent (from 1.67 million in 2014 to 12.8 million in 2015). Data released by Surescripts for 2016 showed that California was among the top twenty states in the nation for EPCS. Previously, California was ranked in the top ten in the nation[51]. Despite the ranking change, reported utilization numbers of EPCS use increased in the state. For 2016, pharmacy enablement of EPCS was reported at 87.5 percent, when previously it was 74.5 percent. Prescriber enablement (10.9 percent) and EPCS transactions (14.3 percent) also showed increases when compared to the prior year. In 2015, the reported provider enablement was 7 percent and the percentage of EPCS transactions was reported at 9.6 percent.

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[50] CHCF, *Final Report: Evaluation of the Electronic Prescribing of Controlled Substances Pilot (November 2013)*. Accessed May 17, 2018.

[51] Surescripts, 2016 National Progress Report. Accessed on April 25, 2018.

The California Department of Justice (DOJ) developed the Controlled Substance Utilization Review and Evaluation System (CURES), a web based portal used to monitor the dispensing of Schedule II, III, and IV controlled substances. All California-licensed health care practitioners authorized to prescribe controlled substances and all pharmacists with an active license are required to be registered to use CURES. The requirement includes even those who do not actively prescribe or dispense. CURES 2.0 was implemented for use throughout the state in March 2017. Users of CURES 2.0 are able to access the system through a secure web browser. The updated system allows users to run patient report queries accessible by prescribers and dispensers, send peer-to-peer communications and receive patient alerts.

1.14   PUBLIC HEALTH REPORTING AND SURVEILLANCE

1.14.1   CALIFORNIA PUBLIC HEALTH HIE INFRASTRUCTURE OVERVIEW

The CDPH and the 61 local health departments (LHDs) form a federated public health system in order to promote the health and well-being of Californians. Federal regulations incentivize EPs, EHs, and CAHs to send data to state, local and tribal public health agencies. As such, it is imperative that California's public health agencies are supported in the design, development, and implementation of a public health infrastructure for HIE and HIT that will enable EPs and EHs to meet public health objectives (i.e., electronic laboratory reporting, immunization registries, cancer registries, specialized registries, and syndromic surveillance) supporting MU. Since 2011, California's public health agencies collaborated and coordinated in statewide MU activities including:

- **Assessed state, local and tribal public health agencies' (PHA) capabilities to receive data for all MU objectives related to public health.** CDPH posted the "California Public Health Meaningful Use Capability" table[52] publicly for EPs and EHs to access. This added clarity for EPs and EHs by directing them to the appropriate PHA to register and send data for the various public health measures. The table is printable and can be used for documentation, as well as to identify where there is not a public health agency capable of receiving electronic data in order for EPs and EHs/CAHs to claim an exclusion for a particular measure.

- **Implemented statewide coordination for MU.** Public health services and programs are led and coordinated by CDPH. The 61 local PHAs are comprised of all 58 counties and 3 city health departments in Berkeley, Long Beach and Pasadena, which function to implement those services and programs. Multiple

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[52] CDPH, *California's Public Health Meaningful Use Capability* (table). Accessed on: April 25, 2018.

jurisdictions may cause confusion for EPs and EHs/CAHs who were not able to differentiate between the varying reporting requirements of: (1) current federal, state, and local public health reporting requirements, (2) MU reporting to PHAs, and (3) attestation requirements for CMS EHR Incentive Programs. Accordingly, CDPH developed a public website[53] for providers and hospitals to access clear information regarding the different public health reporting requirements.

- **Assessment of technology and resources to support a public health infrastructure for HIE/HIT.** CDPH and California's LHDs have incorporated various programs that support the EHR Incentive Program. The technical maturity that supports HIE/HIT varies greatly among LHDs, from small counties that rely on CDPH to assist with data collection for the public health measures to the more advanced LHDs that have developed HIE technology to support data exchange. To date, the ONC and CMS have supported the following public health projects in California:

San Diego Beacon Community received $15 million from the ONC to expand electronic health information exchange through the San Diego Health Connect HIE.

- CHHS, through funds form the ONC HIE Cooperative Agreement, supported the development of an immunization portal for the receipt of electronic data to the California Immunization Registry (CAIR).

- The Medi-Cal EHR Incentive Program received 90/10 FFP funding to support development of CAIR v 2.0 which supports bidirectional exchange.

- The Medi-Cal EHR Incentive Program also received 90/10 FFP funding to support the onboarding of EHs for electronic laboratory reporting to the California Reportable Disease Information Exchange (CalREDIE).

In order to meet MU Stage 2 requirements for PHAs to declare readiness for registration, onboarding, and acknowledgement of EHs, CAHs, and EPs, the CDPH launched the HIE Gateway in October 2013. Using limited state funding, CDPH developed a secure, web-based registration system and messaging portal, which allows EPs and EHs to fulfill their MU Stage 1, 2, and 3 requirements to send data to PHAs. The HIE Gateway was designed to provide EPs and EHs/CAHs with a centralized system to register the intention to submit data to multiple CDPH programs, electronically upload their credentials for verification, and transport data through an onboarding process for automated data exchange between CDPH programs and EHR systems. The system is able to receive HL7 messages in Simple Object

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[53] CDPH Health Information Exchange Gateway (website), Accessed on: April 25, 2018.

Access Protocol (SOAP), an ONC and CDC recommended transport messaging protocol. CDPH successfully provided a registration system to the California Cancer Registry and CalREDIE, and has been able to onboard EHs successfully to CalREDIE for electronic laboratory reporting. Attempts at migrating the existing Immunization Portal to the HIE Gateway as an enterprise solution as well as further development and expansion of the Gateway to other CDPH programs have been delayed due to lack of funding. However, DHCS is examining the possible use of HITECH funding for these efforts.

In order to be more responsive to emerging federal requirements on Public Health Agencies, the CDPH has taken the lead to develop a Public Health HIE/HIT infrastructure that is sustainable and expandable to support Public Health's engagement in MU and the health care delivery system in order to improve upon the quality of care for patients and population health. As such, the CDPH has identified four high-level technology requirements to serve as enterprise solutions to enhance the HIE Gateway in order to support data exchange among the state and local public health registries.

- Store and Forward Message Switching System:

  - A fully functional store and forward message switching system is required to receive messages from any source and to securely preserve the message(s) until they are successfully transmitted to the authorized destination(s). Message switching systems are utilized throughout the government and extensively in the private sector. Message switching technology is also required for interoperability among state, federal, and regional HIE and HIO message switching 'hubs'.

- Message Transformation Software:

  - As many potential participants of HIE solutions use radically different technical approaches to data representation, message transformation software is required to correctly and expeditiously translate message content between legacy character encoding to newer standardized data definitions (examples: legacy to XML, ICD-9 to HL7, etc.) and translate between different versions of the same message representation (i.e., version x to version y, HL7 2.3.1 to HL7 2.5.1, etc.).

- High Capacity and Fault Tolerant Computing Platforms:

  - The message switching system must execute on high performance computing platforms in order to reduce latency in message switching capabilities, to support metadata extraction from messages without performance impact, to

> support the delivery of big data analytics output, and to support hundreds or thousands of potential concurrent connections.

- Integrated Enterprise Identity Management Solution:

  - Lastly, an identity management solution must be a fundamental component of the architecture in order to manage the multitude of security and credential management solutions employed by the provider and consumer communities, inclusive of federated identity management.

The San Diego Beacon Project has already successfully established an HIE framework for interconnecting various local healthcare facilities and services. While interoperability between and with the more mature regional solutions is a top priority for the CDPH, the State and PHAs have begun to discuss opportunities provided by the EHR Incentive Program for collaboration and coordination as a mutually beneficial partnership to establish and maintain a statewide public health HIE framework. The establishment of a statewide framework is not without challenges, from legal authority to collect and store data, to sustainability; however, there has been progress since the commencement of the EHR Incentive Program.

1.14.2   LABORATORY AND DISEASE REPORTING

In developing capacity to support MU requirements, DHCS partnered with the CDPH to improve electronic laboratory reporting. Current systems and infrastructure were modified to adapt to new federal standards for data transmission. A brief description of public health systems and applicable MU requirements are described below.

- The Division of Communicable Disease Control (DCDC) through CalREDIE supports the electronic submission of laboratory results for reportable diseases via the Electronic Laboratory Reporting (ELR) system, as well as web-based Confidential Morbidity Reporting. CalREDIE has specifically targeted the eighty reportable diseases and conditions cited under Title 17 of the California Code of Regulations. State legislation (AB 2658) requires laboratories to electronically transmit laboratory reports to the State of California. CalREDIE was designed to improve the efficiency of surveillance activities and the early detection of public health events through the collection of accurate and timely surveillance information.

  As of March 2017, CalREDIE had nearly 350 submitters, primarily hospital laboratories, in ELR production. Approximately 68 percent of reportable disease incidents in CalREDIE are electronically submitted by one or more labs. On average, CDPH receives approximately 37,500 production ELRs per week that are incorporated into CalREDIE or provisioned to the Office of AIDS, Los Angeles

County, San Diego County, or San Francisco County. The CDPH will continue to assist EHs in achieving both MU requirements as well as compliance with state laboratory reporting regulations.

While CalREDIE electronically receives data from laboratories, confidential morbidity reports (CMRs) are currently manually entered into CalREDIE by providers through the CalREDIE provider portal. The CDPH is actively planning to receive electronic CMRs from providers, to satisfy the MU Stage 3 electronic case reporting measure. Electronic case reporting (eCR) is the electronic transmission of potential cases of reportable conditions from provider electronic health record (EHR) systems to relevant state and local public health authorities for review and action. The capacity to receive eCR in CalREDIE will be similar to the process for receiving ELR and will facilitate an increase in data completeness, accuracy, timeliness and quality. The CDPH is planning to accept into production electronic initial case reports to public health in support of Stage 3 of the HITECH MU program. The CDPH, in partnership with the UC Davis Health System and EHR vendor, Epic, has been selected as a pilot implementation site by the Digital Bridge initiative, and expects to receive technical assistance and support for implementing eCR. CDPH received additional HITECH funding to support eCR and onboarding efforts.

- The Childhood Lead Poisoning Prevention Branch (CLPPB), through its web-based reporting system (WebCollect), currently receives over 700,000 blood lead tests per year from over 300 laboratories, with the majority being by an HL7 format. CLPPB developed and maintains WebCollect, which supports both the CLPPB's childhood lead poisoning prevention Response and Surveillance System for Childhood Lead Exposure (RASSCLE II) data application and the Occupational Lead Poisoning Prevention Program's (OLPPP) Elevated Lead Visual Information System (ELVIS). The CLPPB and the OLPPP are participating in ongoing discussions with departmental programs and committees on optimizing receipt of laboratory samples and results from eligible professionals and laboratories.

- The Cancer Surveillance and Research Branch manages the California Cancer Registry (CCR) which collects information about all cancers diagnosed in California (except basal and squamous cell carcinoma of the skin and carcinoma in situ of the cervix). The CCR has expanded their technical capacity to receive physician reports in compliance with MU Stage 2 requirements. The CCR plans to expand electronic reporting of cancer pathology and to adapt EHR-lab interoperability and connectivity specification (ELINCS) laboratory specification guidelines into their existing system. Funding is needed for the program to: (1) support the technical capability for data receipt from EPs for cancer case reporting as stated in MU Stage 2 and proposed Stage 3, (2) onboard EPs, (3) adapt HL7 2.5.1 laboratory specification guidelines into

their existing system, and (4) capture structured data for the improvement in quality of care to cancer patients. CCR also has plans to coordinate with the San Diego Beacon Community to expand electronic health information exchange through the San Diego Health Connect HIE. Areas of focus within the San Diego Beacon Community include coordination with the Beacon Education, Analytic and Collaboration Hub (BEACH) to integrate and exchange diagnostic and clinical data relative to the hospital cancer case abstract for CA legislative mandated reporting.

In addition to receiving laboratory results, public health also receives specimens and generates results. Public health programs that provide results are described below.

- The Lab Field Services (LFS) provides oversight for clinical and public health laboratory operations and for the licensed and certified scientists and other testing personnel who perform testing in clinical laboratories. To assist department-wide and statewide efforts to meet MU requirements, LFS is working to disseminate information regarding these federal regulations to California laboratories and to collaborate with interagency efforts to administer lab assessments.

- The California Laboratory Information Management System (CalLIMS) implements a common data structure and user interface across CDPH laboratories in order to centralize tracking of patient records and laboratory specimens. This system has the capacity to send HL7 messages although there have not been resources to implement this functionality to date.

1.14.3 SPECIALIZED REGISTRIES

CDPH supports a number of specialized registries to receive information about prevention and treatment of specific diseases and conditions.

- Tobacco Control Program, California Smoker's Hotline:

  California's Tobacco Control Program (CTCP) improves the health of all Californians by reducing illness and premature death attributable to the use of tobacco products. The CTCP has developed a telephone program called the California Smoker's Helpline[54] (1-800-NO-BUTTS) to help the public quit smoking. This program offers free telephone counseling, coaching, referral, mailed materials, and training to healthcare providers. In 2011, CMS approved of provider referrals to the California Smoking Helpline in order to meet NQF Measure Number 0027 for smoking and tobacco use cessation. As such, the CTCP has been working with EHR vendors as well as the University of California healthcare systems to develop an interface for

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[54] California's Smokers Helpline. Accessed on: April 25, 2018.

electronic referrals to the Helpline. CDPH has determined that the helpline, meets the "Other Specialized Registry" MU measure. Further funding could expand the EHR interface to other provider clinics, hospitals and healthcare systems.

- Genetic Disease Screening Program- A Registry for Genetic Disorders:

The Genetic Disease Screening Program[55] (GDSP) which includes the Prenatal Screening Program and Newborn Screening Program (NSP) screens newborns and pregnant women for genetic and congenital disorders in a cost-effective and clinically effective manner. The screening programs provide testing, follow-up and early diagnosis of disorders to prevent adverse outcomes or minimize the clinical effects. The GDSP is working towards the electronic submission of screening results in HL7 v.2.5.1 messaging standards to hospitals and clinicians as well as the receipt of clinical provider order entries for newborn and prenatal screenings. Currently, there are 27 hospitals and one physicians' group receiving all their newborn screening results electronically. The GDSP is undergoing planning efforts to use the HIE Gateway for outbound message submission to hospital and provider EHR systems.

The CDPH is also responsible for maintaining California case registries of the disorders detected by the Newborn and Prenatal Screening Programs. With respect to newborn screening, the registries include metabolic, endocrine and hemoglobin disorders. The registries also include affected newborns that were born in military hospitals, residents that were born in facilities outside the State and individuals diagnosed that did not participate in the California Newborn Screening Program. De-identified data from these registries have been used in a variety of epidemiological studies. With respect to the prenatal screening program, two additional registries include newborns diagnosed with chromosome abnormalities and neural tube defects. These registries include both prenatally diagnosed cases as well as infants up to one year of age. The registry includes both cases that were screened and not screened by the program. The information in the registries is used for a variety of purposes, including estimating program detection rates and overall impact on birth defect prevalence rates.

Lastly, California Code of regulations, Title 17, Section 6529 authorizes the CDPH to collect information from maternity hospitals on newborns diagnosed with Rh Hemolytic disease. This information is collected manually using a standardized form. As a potential clinical registry, data collected from EHRs could provide information in real-time to promote health and surveillance of genetic disorders.

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[55] CDPH, Genetic Disease Screening Program. Accessed on: April 25, 2018.

- Occupational Health Branch:

  The CDC, the ONC, and the National Institute for Occupational Safety and Health have promoted the collection of patient work information into EHRs. The CDPH Occupational Health Branch (OHB) is devoted to improving worker health and safety through prevention activities. OHB works to prevent injury and illness on the job before they happen by: 1) identifying and evaluating workplace hazards, 2) tracking patterns of work-related injury and illness, 3) developing training and informational materials, and 40 providing technical assistance to others to prevent work-related injury and illness. The day collection of the OHB also encompasses reporting of pesticide poisonings, Coccidioidomycosis, Hepatitis B needle sticks, workplace fatalities, occupational asthma, carpal tunnel syndrome, and heavy metal poisonings. Currently, information is collected via paper-based *Doctor's First Report of Occupational Illness or Injury*[56] and forwarded to the California Department of Industrial Relations. With the possible inclusion of patient work information into EHRs for MU stage 3, the OHB will need funding and resources to develop a registry and HIE interfaces that are capable of electronic data collection from EHRs.

- Stroke Registry:

  The California Stroke Registry / California Coverdell Program (CSR/CCP) aims to: 1) reduce the rate of premature death and disability form acute stroke, 2) increase public awareness of stroke treatment and prevention, and 3) reduce disparities in acute stroke care by providing underserved populations with better access to treatment. The CSR monitors the quality of acute stroke care across clinical settings, including pre-hospital care, provided via emergency medical services (EMS) and in-hospital care. Registry data are used to help hospitals and EMS partners close the gap between stroke care guidelines and practice. As noted in the CHHS HIE Plan 2012-2014 submitted to the ONC under the HIE Cooperative Agreement, electronic capability to receive real-time information about patients with suspected or confirmed stroke cases into the CSR from hospitals and local EMS agencies would assist in assessing the quality of care and care coordination to patients. Even more so, the capability to send information electronically from the CSR to EMS agencies will support improvements in effective emergency treatment and response.

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[56] California Department of Industrial Relations, *Doctor's First Report of Occupational Illness or Injury*. Accessed on April 27, 2018.

- California Parkinson's Disease Registry:

  Legislatively established in 2004, the California Parkinson's Disease Registry was intended to be a confidential database that contains information about the extent and characteristics of Parkinson's disease (PD) in California. Information collected from local physicians, pharmacists and health care facilities (designated as reporting sources in the statute) will include demographic information (such as name, birth date, address) about people with PD, their health care providers (such as physician specialty), as well as basic clinical information (such as date of diagnosis, medications, disease features). Although implementing legislation was passed, funding is needed to support further development.

- Oral Health Program:

  The California Oral Health Program (OHP) was established in July 2014 to promote oral health by reducing the prevalence of dental decay and tooth loss, periodontal disease, and other chronic diseases through prevention, education, and organized community efforts. The OHP will provide recommendations to address the burden of disease, increase access to oral health services for high risk populations, and increase the oral health status of all Californians. In this effort, the OHP is required to develop a surveillance system. As a component to the surveillance system, an oral health registry is needed to collect data from dental providers beyond paper-based surveys. The OHP may serve as a public health registry under MU stage 2 and stage 3 regulations and allow for electronic data reporting to public health from eligible dentists who are participating in the EHR Incentive Program.

1.14.4 SYNDROMIC SURVEILLANCE REPORTING

CMS regulations for MU encourage EHs and EPs working in urgent care settings to submit electronic syndromic surveillance data to PHAs. Currently, the CDPH does not have a statewide syndromic surveillance system. California state law does not explicitly grant the CDPH the authority to collect syndromic surveillance data; however, 14 LHDs have the authority and capabilities to receive electronic syndromic surveillance data: Alameda, El Dorado, Fresno, Humboldt, Imperial, Kern, Riverside, Sacramento, San Diego, San Mateo, Solano, Stanislaus, Tulare, and Ventura.

1.14.5 IMMUNIZATION REGISTRIES

The California Immunization Registry (CAIR) provides secure, electronic exchange of immunization records to support the elimination of vaccine-preventable diseases. CAIR allows users to see patient demographic data, immunization history, immunization forecasting, contraindications, overdue immunizations and other functions. CAIR provides

users with copies of standard immunization record cards, usage reports, appointment reminders and inventory management. At the present time, there is no interoperability between CAIR and public health surveillance reporting databases, although both state and county surveillance staffs are able to access patient information in CAIR.

Electronic HL7 data submission to CAIR began in 2012 with the installation of add-on software (HL7Jump) that was able to translate HL7-formatted immunization messages into the CAIR software's native 'flat file' format.

Additionally, in preparation for MU Stage 2, the ONC HIE Cooperative Agreement with CHHS funded the development of an online web application known as the CAIR Immunization (IZ) Portal to automate and manage registration for provider clinics, hospitals, and HIEs/HIOs) via HL7 message testing, and onboarding of sites to full production immunization data submission. The IZ Portal was first launched on August 2013 and since that time, the Portal has received and imported more than 40 million vaccination records into the registry.

More recently, with the implementation of a California-customized version of the Wisconsin Immunization registry (WIR) software in October 2016, CAIR is now fully capable of receiving and sending HL7 messages in compliance with the federal MU program.

In 2017, California completed the first stage of the immunization registry consolidation project (CAIR2.0). The project combines data from 7 of the 10 CAIR regional registries (comprising 87 percent of CA's population) into a single statewide CAIR2.0 registry hosted by CDPH. The second stage of the project, which began in late 2017, involves the transfer of historical data and ongoing daily uploads to CAIR2.0 from the three remaining CAIR regional registries, such that the entire state becomes consolidated into CAIR2.0. This will allow statewide patient lookup of immunization records. The three regions listed below (and shown in **Figure 10)** will continue to use their own software locally but will be connected to CAIR2.0 via a web service connection.

- CAIR Imperial (locally known as ICIR)
- CAIR San Joaquin (locally known as RIDE)
- CAIR San Diego (locally known as SDIR)

FIGURE 10: STATEWIDE INTEGRATION OF THE CALIFORNIA IMMUNIZATION REGISTRY
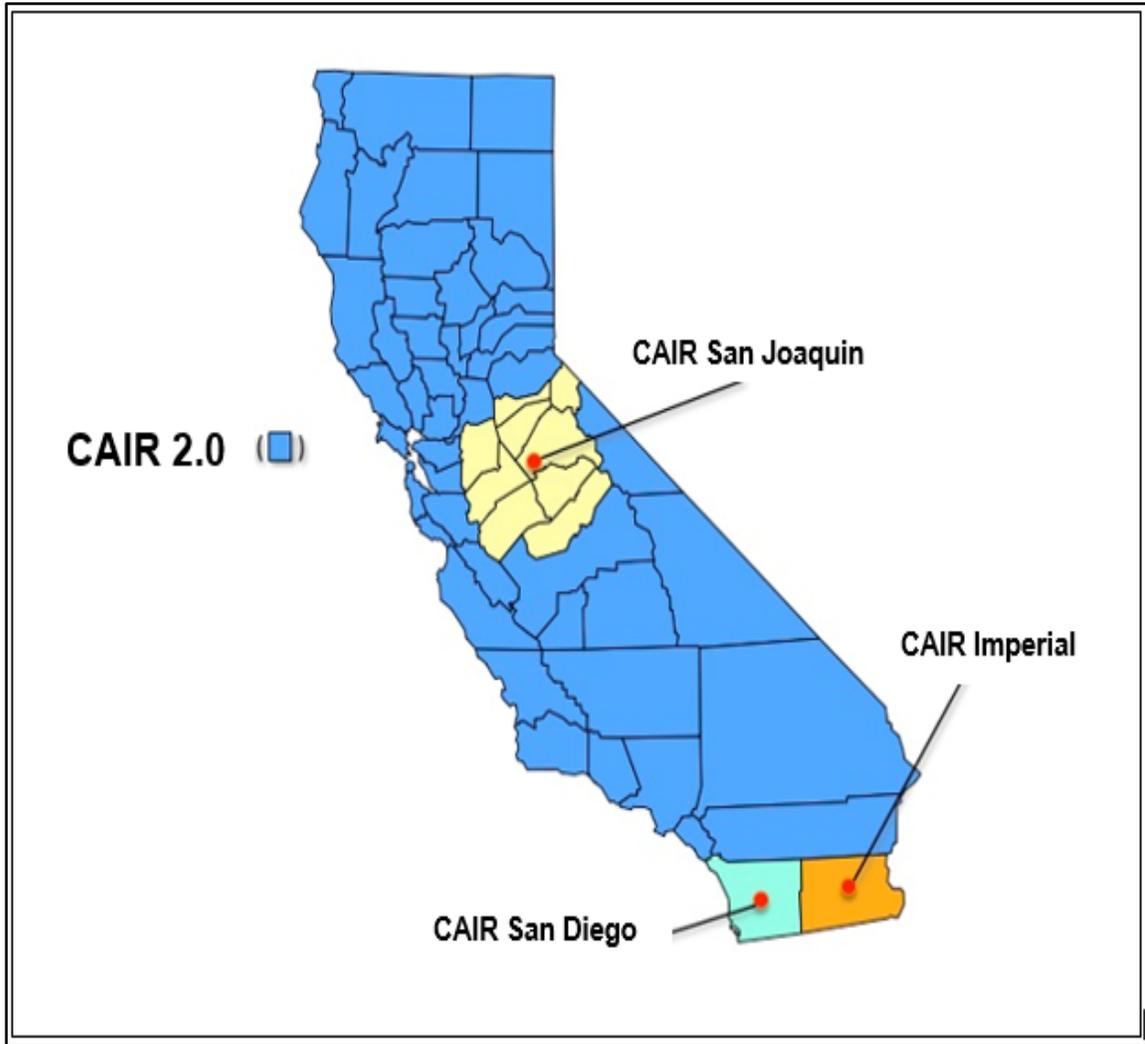
As noted in Table 10 below, CAIR2.0 currently has nearly 5,400 sites submitting 'production' patient data in HL7 format to CAIR and qualifying for 'ongoing submission' (terms are defined below the table). With respect to the range of EHR solutions being used, registrants at the Portal have identified at least 172 different EHR solutions, and 67 of those are represented among the 5,400 sites in production. Furthermore, 92 percent of the registered sites are using an EHR that has already achieved data exchange with CAIR2.0.

TABLE 10: CURRENT CAIR IZ PORTAL PARTICIPANTS AND STATUS *
(EXCLUDES SAN DIEGO, IMPERIAL, AND SAN JOAQUIN REGIONS)

Site Type	Total	Data Submission Status # Testing	Data Submission Status # 'Production'
Direct submission to CAIR	597	273	324
Submits indirectly via the HIEs in the row below	6,244	1,302	4,942
HIEs	174	60	114
TOTAL Registrants	7,015	1,635	5,380

*As of 12/31/2016.   Definitions:
- Testing: When provider clinics, hospitals and HIE/HIOs register at the IZ Portal, they move immediately into testing. For each test message sent, the Portal sends automated replies back to the submitter with diagnostic information that allows each submitter to remedy any failed messages.
- Production: Sites that attain consistent submission of correctly formatted messages (> 50-100 successful) are moved to production.

While the majority of MU submissions are to CAIR2.0, each hospital or provider in San Diego County, San Joaquin County, and Imperial County is required to submit information to the immunization registry in their jurisdiction. CAIR2.0 has declared readiness for MU Stage 3[57] and has established the capacity to receive National Drug Codes (NDCs), and in late 2017 implemented new software that allows bi-directional, real-time HL7 messaging.

1.15 INFORMATION TECHNOLOGY INFRASTRUCTURE AND MEDICAID INFORMATION TECHNOLOGY ARCHITECTURE

DHCS is the state agency responsible for administering Medi-Cal. Using the CMS Medicaid Information Technology Architecture (MITA) Framework as the foundation, DHCS has defined California's Medicaid Enterprise System (MES) as the business processes that support the administration of Medi-Cal and other DHCS programs.

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[57] CDPH, Health Information Exchange Gateway. Accessed on: April 25, 2018.

Consistent with the language in 42 Code of Federal Regulations, Section 43.111, the MES is the collection of systems and other technical components used in the management of the enterprise. California's MES is composed of traditional MES components, such as fee-for-service claims adjudication systems managed by fiscal intermediaries, and other systems that support provider enrollment and verification, data analysis, premium payments, payment integrity, cost reporting and settlement, plan administration, and the other business processes. A primary objective of the MITA activities at DHCS is to ensure that changes to any of these components will support the economical, efficient, and effective administration of Medi-Cal.

1.15.1   MEDICAID ENTERPRISE SYSTEM

Conduent, previously Xerox, had developed a Medicaid Management Information System (MMIS) based on the Medicaid Information Technology Architecture (MITA) 2.0 Framework Initiative of the Center for Medicaid & State Operations (CMSO). In April 2016, DHCS acknowledged that the pace of technological change for health enterprise data systems has significantly accelerated in the years since DHCS began procurement work in 2007 to replace the existing CA-MMIS system. Many states, as well as CMS, have adjusted their strategies on modernizing Medicaid management information systems to embrace a modular approach to procurement, design, and implementation. These changes created an opportunity for DHCS to reevaluate the nearly decade-old design, development, and implementation strategies of the replacement system and to reconsider the best course to ensure that California has a modern, robust, and sustainable system. Conduent shall continue to operate and maintain the CA-MMIS System until September 2019 or an earlier time when DHCS has secured the FI services and support necessary to achieve the goal of implementing a replacement system that meets both CMS modular procurement requirements and the Medi-Cal needs of Californians.

In November 2017, DHCS solicited information for healthcare payer modular solutions from both private sector and Medicare/Medi-Cal providers commercially available. The Request for Information (RFI) was issued to gather information in planning the modernization of the CA-MMIS through replacement of the current system with modular system solutions. As specified in the RFI, the proposed modular solutions must meet the MITA framework and consist of modular product packaging aligned with the MITA Maturity Model. CMS has released multiple rules that require states to implement the MMIS as modules designed using modern software design principles. In addition to functional business practices outlined by CMS, DHCS has interpreted the CMS directive to mean that the proposed solutions should support interoperability, be scalable so that a collection of business functions can be grouped onto one or more computer servers, and include flexible computing power. Based on CMS' definition of functional business processes, the following MITA business areas have been identified:

- Financial Management
- Care Management
- Operations Management
- Provider Management
- Plan Management
- Member Management
- Performance Management

The products used should have an elastic scalability so that the servers can be deployed on a cloud computing infrastructure as well as scale up and down in response to changing demand. Given that this is a more modern approach, the software should have the ability to rapidly change functionality in response to new legislation and new technology. Additionally, a cloud-optimized software is included in the definition of a modern software as it can rapidly reduce the costs associated with system operations. Additional key benefits of a modular approach include a system that:

- Delivers a high level of provider satisfaction.
- Delivers a high level of provider satis
- Demonstrates competence and consistent compliance with State and/or Federal requirements.
- Providing quality clinical oversight resulting in appropriate and cost-effective care for Medi-Cal participants.
- Provide financial services in a timely, efficient manner which includes accurate resolution to financial issues.
- Ensure confidentiality of processes related to rebates for outpatient drugs dispensed to Medicaid beneficiaries.
- Administer a centralized records repository to electronically store, distribute, and allow access to CA-MMIS records.
- Improved maintenance, enhancement, and operational efficiencies.

The CA-MMIS Health Enterprise leverages HIE and HIT to improve health care effectiveness and efficiency. This will also improve health outcomes and quality services for Medi-Cal beneficiaries. The Enterprise System provides a solution that supports unification of the financial and clinical data by bridging the traditional split between these health care data sources. Improvements as a result of the transition will enhance Medi-Cal program automation, standardization, and interoperability. The new technology will provide business value and improvements to providers and beneficiaries while enabling new levels of MITA business maturity.

1.15.2 MEDICAID INFORMATION TECHNOLOGY ARCHITECTURE

The State Medicaid HIT plan will be implemented in accordance with the MITA principles as described in the Medicaid Information Technology Framework 3.0. DHCS submits an annual MITA State Self-Assessment (SS-A) for the Medi-Cal program, identifying the "as-is" and "to-be" maturity levels of the Medi-Cal program across all major business processes. DHCS is using the SS-A today to support major projects across DHCS enterprise. Current SS-A goals transition Medi-Cal to a service-oriented program with enhanced capabilities for its customers and business partners. DHCS MITA Roadmap, which documents how DHCS intends to advance along the maturity continuum, is included in the annual SS-A. As part of the MITA SS-A, DHCS identified intrastate health information exchange capabilities as a key to achieving increased MITA maturity, and support of the Care Management business domain. MITA has the following goals:

- Develop seamless and integrated systems that communicate effectively to achieve common Medicaid goals through interoperability and common standards.
- Promote an environment that supports flexibility, adaptability, and rapid response to changes in programs and technology.
- Promote an enterprise view that supports enabling technologies that align with Medicaid business processes and technologies.
- Provide data that is timely, accurate, usable, and easily accessible in order to support analysis and decision making for health care management and program administration.
- Provide performance measurement for accountability and planning.
- Coordinate with public health and other partners to integrate health outcomes within the Medicaid community.

MITA AND HIE/HIT

The goals for MITA's "business-driven enterprise transformation" require the ability to easily and readily exchange health data electronically, the key connection between MITA and HIE/HIT. In 2014, CHHS and DHCS completed an HIE/HIT Architecture Roadmap to define and provide the actionable roadmap for the "To-Be" for HIE at DHCS. The HIE/HIT Roadmap aligns with MITA goals as it identifies the capabilities that are needed to:

- Achieve MITA Maturity Level 3 for Business, Information and Technology Architectures across the Medi-Cal organization.
- Increase HIE utilization for intra-agency (CHHS), intra-state, CMS, healthcare providers and members supporting care management.

The HIE/HIT Roadmap identified 24 potential initiatives (Appendix 7) that, once completed, will have achieved most of the department's current HIE/HIT goals. The HIE/HIT initiatives

were evaluated against the MITA Seven Standards and Conditions and assigned a maturity level for each of the seven areas based on expected functionality at delivery. The graph below identifies the 24 initiatives evaluated against the 7 Standards and Conditions, and the distribution of maturity level assessments within each.

FIGURE 11: POTENTIAL INITIATIVE MITA 7 STANDARDS AND CONDITIONS MATURITY DISTRIBUTION (FROM CHHS DHCS HIE/HIT ARCHITECTURE ROADMAP)
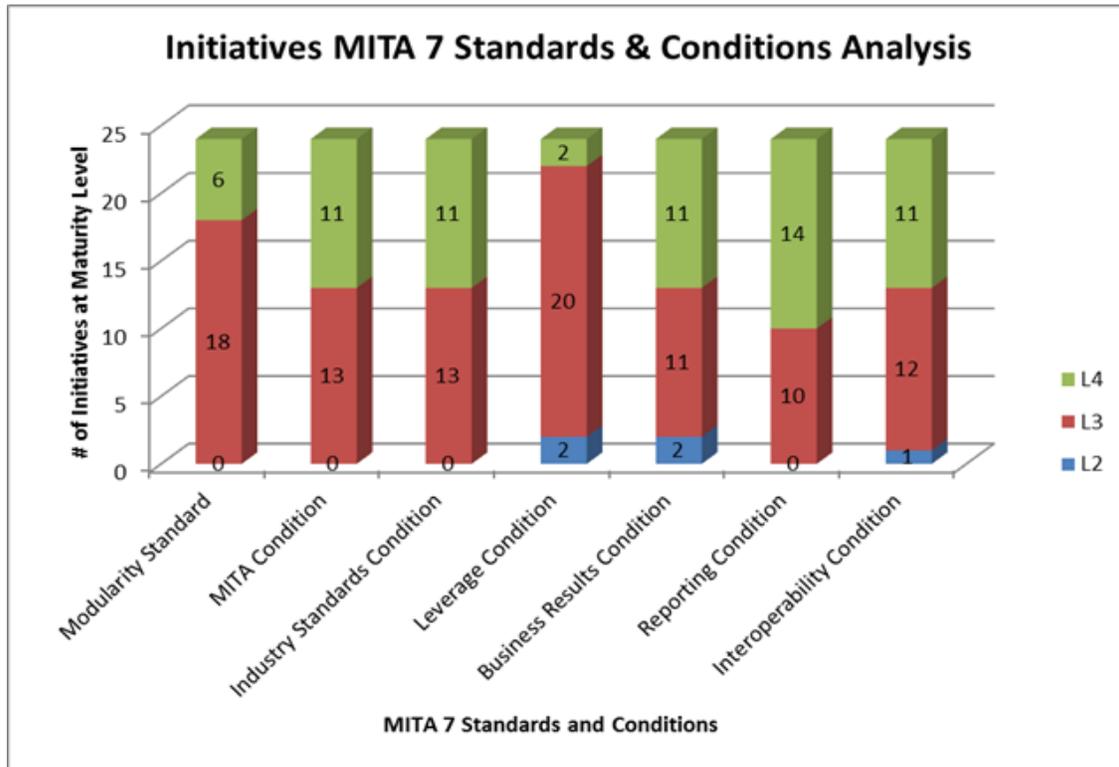
Planning activities are underway for DHCS 2018 SS-A which includes a re-evaluation of the HIE/HIT Roadmap to better integrate initiatives into the appropriate MITA roadmaps. This will give more visibility to how the HIE/HIT initiatives support intrastate exchange of health care data.

MITA AND ELECTRONIC CLINICAL DATA

The use of clinical data by DHCS is a critical component for improving the quality, efficiency, and cost-effectiveness of care delivered to Medi-Cal members. Through the evaluation of data collected by clinical quality management programs, it becomes possible to identify gaps and areas for improvement as well as identify high-risk patients and disease or risk-specific programs. Within DHCS, as allowed by the Superior Systems Waiver (SSW), the Clinical Assurance & Administrative Support Division performs utilization review and post-claims oversight for services provided to FFS Medi-Cal members. This oversight includes

the determination of specific types of services which do not require a Treatment Authorization Request (TAR). Additionally, the SSW specifies how non-designated public hospitals and private hospitals can transition from the current use of TARs to the use of their own utilization management systems. Through the TAR-Free process, participating hospitals provide access to the electronic medical records to DHCS clinical staff to facilitate claims review. This allows DHCS to more efficiently collect the information needed to implement a TAR-free process through the use of clinical data obtained from hospitals. In the future, DHCS proposes to automate clinical data collection through HIEs and leveraging the existing CTEN.

FIGURE 12: PROPOSED APPROACH
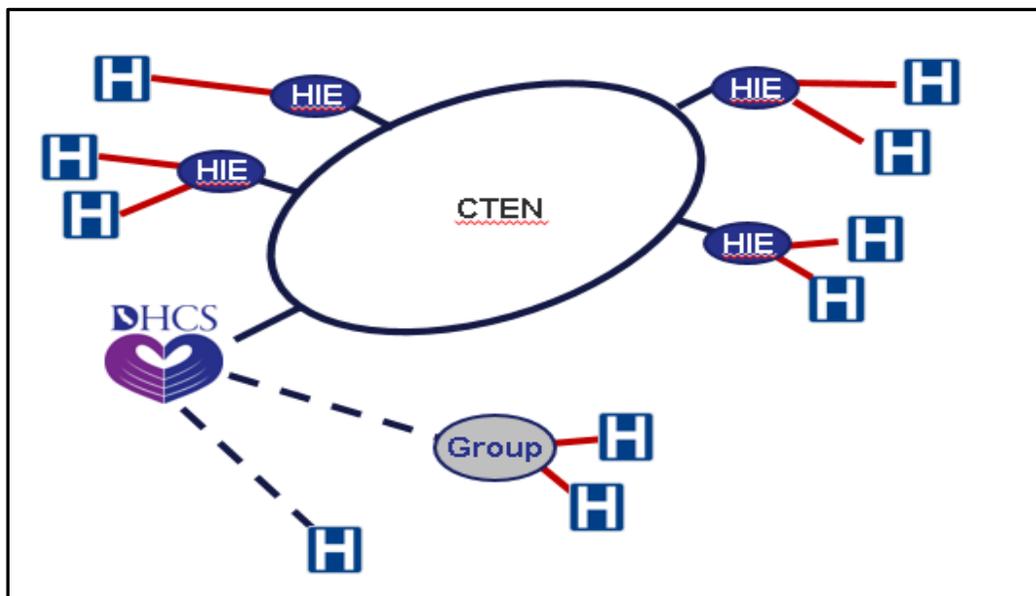
Effective intrastate data exchange processes and protocols utilized by electronic data collection will lay the groundwork for leverage within California across hospital trading partners. The storage mechanisms to be built as part of electronic data collection will be sophisticated enough to better share data with CHHS and its associated departments, including DHCS, CDPH, and CDSS. DHCS has convened a CHHS-level workgroup to address the specific issue of leverage, since so many California State departments under the CHHS umbrella have business needs and existing investments in the area of health information management.

MITA AND PUBLIC HEALTH

CDPH understands the importance of the public health inclusion in MITA, which places it in alignment with the EHR Incentive Program and ONC rules. Key benefits of CDPH involvement in MITA includes:

- Facilitation of collaboration, communication, and coordination with providers, hospitals, health systems, laboratories, local public health agencies, state agencies, and federal agencies.
- Increased standardized data collection in real-time to public health registries for a quicker public health response to emerging threats and disease prevention.
- Meaningful use of public health data for public health surveillance, quality of care, care coordination, and reduction of health care costs.
- Standardized data collection for analytics.
- Facilitation of interoperability within Public Health systems and with other state, health and medical systems.

A list of the CDPH registries, as well as other CDPH programs that may be included in the HIE/HIT Architecture Roadmap were noted in Section 1.14. These programs may be included under the various business areas as outlined by the HHS and the CMS. The development of a public health HIE infrastructure with supportive technical solutions would allow the CDPH and the 61 LHDs to further data exchange with the State Medicaid Agency.

1.16   INFORMATION TECHNOLOGY WORKFORCE DEVELOPMENT

As the HIT landscape evolved, DHCS actively worked through outreach, education efforts, and workforce development programs to encourage and employ this transforming workforce. California's health care industry is composed of approximately 1.4 million individuals[58] working to provide care to more than 39 million Californians. Two initiatives, the Western Region Health IT Program (WRHealthIT) and the California Health Workforce Alliance (CHWA), advanced workforce capabilities in HIT and HIE to supplement and assist health care professionals.

Funded by the ONC, the program targeted one of five regions in the two-year national project. The WRHealthIT was comprised of community colleges from Arizona, Nevada, California and Hawaii[59]. Overall project goals included preparation of the Health IT workforce to assist hospitals, clinics, and doctors' offices with the installation, maintenance, and deployment of EHR systems. Member colleges within the consortium created certificate programs that developed skillsets related to practice workflow/information redesign, clinician/practitioner consultant needs, implementation support specialists, implementation managers, technical/software support staff, and trainers. Within the WRHealthIT, a total of

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[58] CHCF, *California's Health Care Workforce (August 2017)*. Accessed on April 25, 2018.

[59] ONC, *Health IT Buzz (March 30, 2011)*. Accessed on April 27, 2018.

2,641 students received training. In California, 2,122 students were trained by the state[60]. After the grant ended in 2013, five of the ten participating colleges continued the Health IT education and training. Those colleges include Cosumnes River College, East LA College, Orange Coast College, San Diego Mesa College, and Santa Barbara City College. The programs offer an Associate of Science in Health Information Technology in support of career opportunities in the Health IT industry.

1.17   INTERSTATE EXCHANGE ACTIVITIES

California shares borders with Oregon, Nevada and Arizona. For EHR Incentive Program eligibility purposes DHCS allows hospitals and professionals to choose between counting only discharges or encounters for California residents, or discharges for residents of both California and another state – whichever will result in the highest percentage of Medicaid discharges or encounters for the hospital or professional. The CMS Cost Reports are used to capture data on out-of-state discharges from hospitals. Since cost reports do not break out data by state, in the case where a hospital chooses to establish patient volume only using California patients and cost report data do not correspond to that reported by the hospital, DHCS requires the hospital to submit other supporting documents such as audited annual hospital disclosure reports. It is important to note that the CMS National Level Registry (NLR) does not allow hospitals or professionals to claim EHR incentive funds in more than one state for each program year. DHCS has not experienced a significant number of providers using beneficiaries across state lines to establish eligibility. On the rare instances when this has occurred, DHCS has reached out to the other states to confirm the provider's credentials as well as reported patient volumes.

WESTERN STATES CONSORTIUM

Established in October 2011, the Western States Consortium (WSC) was comprised of eight core states (Oregon, California, Arizona, Hawaii, Utah, Nevada, Alaska, and New Mexico) and two satellite states (Washington and Idaho). Five other states; Colorado, Florida, Georgia, Michigan, and Ohio, later joined the consortium. The goal of the WSC was to establish policies and technical solutions to support direct exchange and advance HIE across state borders. California and Oregon participated in two proof-of-concept pilot demonstrations to show how local agreements and trust structures could be established to support interstate HIE. Additional states were included as the scope of the pilot expanded. Over the course of the demonstration pilot, the WSC found that trust bundle development remained easiest when focused on the minimum requirements. Additional findings included the need to further develop the infrastructure to facilitate the exchange of health information.

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[60] ONC Health IT Dashboard, HITECH Workforce Development Programs (2013). Accessed on April 25, 2018.

Variances in state law or regulation and practice were identified as a possible barrier to the statewide expansion of direct exchange. At the end of the demonstration pilot, the WSC incorporated as NATE in May 2013 to continue to efforts of HIE exchange across state borders. In October 2015, CAHIE and NATE announced an effort designed to increase effective sharing of health information among providers and between providers and consumers. As part of this collaboration, NATE transitioned the Provider-to-Provider Trust Bundle to CAHIE[61]. The bundle enabled exchange across the nation and included California, Oregon, Utah, and Alaska. During the transitionary period, CAHIE agreed to establish a new national forum to develop policies and procedures to manage this trust bundle. From the forum discussions, it was determined that, due to the prevalence of existing DirectTrust accredited organizations, the effort to develop procedures would have been duplicative of those already in place. CAHIE has since decided to discontinue CTEN trust bundles published for DirectTrust.

1.18   THE LEGAL LANDSCAPE

In October 2009, California passed Senate Bill (SB) 337[62]. The bill emphasized that the full benefits of health information technology could not be completely utilized unless electronic health record systems were supported by secure exchange of health records and used by health care providers and others throughout the state and across state boundaries. The ARRA of 2009 (Public Law 111-5) and its included HITECH Act, provided California the opportunity to improve its health care system through development of a statewide health information technology infrastructure. Federal grant funds provided by Section 3013 of the ARRA were used to expand the use of health information according to nationally recognized standards. SB 337 authorized CHHS, or a department under its jurisdiction, to apply for federal health information technology and exchange funding made available through the ARRA. An included provision allowed for the selection of a qualified nonprofit to act as the state entity should CHHS not submit an application for federal funds. In that instance, the state-selected entity would facilitate and expand the use and disclosure of health information electronically among organizations while protecting individual privacy and confidentiality of electronic medical records. All related funds received through the ARRA would be stored in the California Health Information Technology and Exchange Fund and used solely for the purposes of health information technology and exchange.

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[61] CAHIE, *NATE to Transfer Administration of Nation's First Trust Bundle for Provider Systems to CAHIE (October 7, 2015)*. Accessed on: April 25, 2018.

[62] SB 337 (Alquist, Chapter 180, Statutes of 2009). Accessed on: April 25, 2018.

Assembly Bill (AB) 278[63], enacted in 2010, stated that the Office of Health Information Integrity (CalOHII) as a department within CHHS, was able to apply for federal funds available through ARRA. The identified role of CalOHII was to enforce state law as related to confidentiality of medical information and to impose administrative fines for the unauthorized use of medical information. Additionally, the bill allowed CalOHII to annually approve a maximum of four demonstration projects, or Health Information Exchange Privacy and Security Demonstration Projects, to evaluate possible solutions to facilitate HIE that promote quality of care and maintain the privacy and security of personal health information. The demonstration projects identified and examined barriers preventing the implementation of HIE, tested security and privacy policies for the secure exchange of health information, and identified and addressed any differences between state and federal laws surrounding the privacy of health information.

Approved in October 2011, SB 945[64] required DHCS to establish and administer the Medi-Cal EHR Incentive Program. Program administration duties included providing federal incentive payments to Medi-Cal providers for the implementation and use of electronic health records systems. Additionally, SB 945 required DHCS to accept applications from and make incentive payments to eligible professionals and hospitals to adopt, implement, upgrade, and meaningfully use certified electronic health records technology. The incentive payments made to eligible professionals and facilities must meet all standards included in the Medicaid EHR Incentive Program and used federal funds made available through Section 4201 of the ARRA (Public Law 111-5). The bill also required DHCS to develop the State Medicaid Health Information Technology Plan for federal approval. The bill included language that it would become inoperative on July 1, 2021, and would be repealed on January 1, 2022 unless a later enacted statute deletes or extends the dates on which it becomes inoperative.

In September 2011, DHCS submitted SPA 11-017 for CMS review. Included in the SPA was the request to add optometrists as an eligible provider for purposes of the EHR incentive program. Approved in January 2013, the SPA allowed optometry services to be inclusive of services that a physician is authorized to perform. After receiving approval, DHCS designated optometrists as eligible providers, as indicated in CFR 495, Subpart B, section §495.100.

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[63] AB 278 (Monning, Chapter 227, Statutes of 2010). Accessed on: April 25, 2018.

[64] SB 945 (Committee on Health, Chapter 433, Statutes of 2011). Accessed on: April 25, 2018.

SB 870[65] was approved in June 2014 for the 2014-15 fiscal year. The bill approved appropriation of $3.7 million to DHCS to support the California Technical Assistance Program (CTAP) in accordance with the State Medicaid Health Information Technology Plan as specified in Section 14046.1 of the WIC.

In September 2016, the California Legislature enacted Senate Bill 482[66] to amend Sections 11165 and 11165.1 of, and to add Section 11165.4 of the Health and Safety Code. These changes required providers to both report and consult the Controlled Substance Review and Evaluation System (CURES) database before and after prescribing controlled substances. The expanded role of CURES has the potential to increase the role of health information exchange widely in California.

1.19   CLINICAL QUALITY

As described in the 2017 *DHCS Strategy for Quality Improvement in Health Care (Quality Strategy)[67]*, DHCS is committed to continual improvement in population health and health care in all departmental programs. The *Quality Strategy* identifies goals, priorities and specific programs developed to advance population health and high-quality health care. The *Quality Strategy* was developed to align considerations from the National Strategy for Quality Improvement as well as state QI initiatives as much as possible.

DHCS identified improving patient safety as a critical issue for health care systems. Part of this effort includes strengthening the ambulatory care infrastructure to prevent errors such as missed/delayed diagnoses, delay of proper treatment or preventive services, medication errors/adverse drug events, and ineffective communication and information flow. Advances in information technology, including those related to EHR systems, may aid in an improved and more efficient safety infrastructure. DHCS hopes to achieve this goal through identifying proven models that effectively improve workflows in the ambulatory care setting and exploring methods for implementation across the state.

The efforts to improve the ambulatory infrastructure complement those undertaken to advance the adoption of health information technology and health information exchange essential to delivery of efficient care. By following the Medicare model, DHCS plans to

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[65] SB 870 (Committee on Budget and Fiscal Review, Chapter 40 Statutes of 2014). Accessed on: April 25, 2018.

[66] SB 482 (Lara, Chapter 708, Statutes of 2016). Accessed on October 30, 2018.

[67] DHCS, *DHCS Strategy for Quality Improvement in Health Care*. Accessed on: April 25, 2018.

develop the capacity for members to view personal health information. The adoption of EHRs assists in facilitating health care decisions at the point of care. Through partnerships with other HITECH programs in California and across the nation, DHCS has supported the development of HIE capacity in the state.

Thus far in the Medi-Cal EHR Incentive Program, DHCS has not had the ability to collect CQMs electronically. Like most other state programs, providers input aggregate CQM data into the SLR. Appendix 8 displays CQM data for program years 2011 to 2016. DHCS has recently begun to share this aggregate data with public health programs and managed care plans. Appendix 4 displays an information flyer developed by the CDPH to promote the reporting of 4 CQMs addressing diabetes, hypertension, colorectal cancer screening and immunizations.

2   CALIFORNIA'S FUTURE HIT LANDSCAPE

DHCS' original SMHP delineated an ambitious plan for promoting the use of health IT throughout California. This plan concentrated mainly on promoting the adoption of certified EHRs. The goals specified in DHCS initial 5-year plan (2011-2016) have been largely attained or surpassed. The specific goals and results of the initial 5-year plan are detailed in Appendix 10. As described in Section 1, EHR adoption is now widespread for both professionals and hospitals. The goals of DHCS' new 5-year plan 2017-2021 are presented and discussed in Section 2.1. This new plan targets meaningful use of EHRs and the promotion of interoperability through HIE.

2.1   CALIFORNIA'S NEW 5-YEAR PLAN (2017-2021)

2.1.1   MEANINGFUL USE

California has been very successful in promoting AIU by professionals and hospitals. DHCS will now concentrate on improving the MU rates of its already participating providers. As delineated in Section 1.2, EHs have been quite successful in attesting to MU, with a rate of 92 percent (302/3). EPs have been less successful, with only 36 percent overall attesting to MU. As delineated in Section 1.1, all professional types have achieved an MU rate of at least 45 percent except dentists (11 percent) and optometrists (29 percent). Excluding these two professional types, overall 48 percent of professionals have attested to MU.

In the next five years DHCS will strive to achieve an MU rate for all EPs of at least 75 percent and 100 percent for EHs. To achieve this, DHCS will provide assistance to all EP types, through working with CTAP organizations and other stakeholders, with particular targeting

of dentists. DHCS will set a goal of 50 percent for MU attestations from dentists. To begin this targeting, DHCS recently completed a survey of dentists who received AIU payments but have not yet attested to MU. The results of this survey described in Section 1.1.2 revealed a number of barriers to MU for dentists. DHCS has recently addressed barriers due to lack of knowledge about MU and the program by sending respondents a "Tip Sheet" for dentists (Appendix 14) about achieving MU. Other interventions to address knowledge and other barriers are being planned.

2.1.2   HEALTH INFORMATION EXCHANGE

While EHR adoption and meaningful use among providers is still an important focus, over the next five years DHCS' goals progress towards the next phase of efficiency: health information exchange (HIE). As identified in the state's most recent MITA SS-A, developing seamless and integrated systems that communicate effectively and provide data that is timely, accurate, usable, and easily accessible. This will support analysis and decision making for health care management and program administration as a necessary foundation that will support the flow of HIE throughout the state. DHCS has identified specific goals to improve infrastructure to support HIE at the state, county, and community levels.

The CMS State Medicaid Directors (SMD) Letter #16-003 has expanded the scope of state expenditures eligible for the 90 percentage matching funds for health information exchange and encouraged the adoption of CEHRT by certain Medicaid providers. The funding provides for implementation and onboarding costs related to HIE and interoperability for EPs who will often transition care to other Medicaid providers that are not eligible for Medicaid EHR incentive payments. This will significantly increase the support for transitions and coordination of care for Medicaid beneficiaries through interoperability.

The state is developing a process for vetting and managing a variety of proposals from state, local and non-profit entities for projects in support of this interoperability. DHCS held a HIE Summit in November 2017 for all stakeholders and will use this platform to inform our strategy to vet and manage such proposals. The HIE Summit also provided stakeholders a forum for feedback, concepts and additional projects. Additionally, DHCS has provided guidelines for the submission of HIE proposals potentially eligible for enhanced federal funding under SMD# 16-003 in *HIE Funding Opportunity* (Appendix 19)*.* These processes for establishing HIE proposal vetting and management provide a methodological approach to reduction of waste and duplication of effort in the funding of these programs, while ensuring alignment with the requirements of SMD# 16-003.

2.1.2.1 DHCS HIE INITIATIVES

The state is investigating the use of enhanced funding as described in SMD #16-003 for collection of electronic clinical data, onboarding of emergency services personnel, public health providers, pharmacies and laboratories. In addition to the statewide and regional proposals for HIE interoperability currently before the department, DHCS is also examining its *2017 Strategy for Quality Improvement in Health Care*[68] and the department's 1115 Waiver[69] (Medi-Cal 2020 Waiver[70]) and other opportunities to further enhance their strategies with the available HIE infrastructure and onboarding funding.

ELECTRONIC CLINICAL DATA

As described in Section 1.15.1, DHCS has identified that the capture and use of clinical data is a critical component to improve health care for Medi-Cal members. As efforts surrounding clinical data collection continue to evolve, the proposed collection process would have the ability to electronically receive clinical data as well as validate and store the clinical data from hospitals. As a first use case, DHCS will support a Treatment Authorization Request (TAR)-free process based on electronic collection and review of clinical data from hospitals. The collected data will be viewed by DHCS staff through secure access. This solution is scalable and will be leveraged to receive electronic clinical data supporting clinical quality improvement and monitoring activities.

FIGURE 13: CLINICAL DATA PROJECT TIMELINE

Assessment	Gap Analysis	Alternatives	Implementation

• CAASD TAR-Free business process
• HIE landscape
	• DHCS resources
	• Clinical Document Templates
		• Technical requirements
		• Data requirements
		• Business requirements
			• Exchange capability
			• Trust network
			• Trading partner rollout
			  • HIEs
			  • Groups
			  • Hospitals

Complete	**Complete**	**In Progress**	**Planned Q4 2018**

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[68] DHCS, *DHCS Strategy for Quality Improvement in Health Care*. Accessed on: April 25, 2018.

[69] DHCS, DHCS Section 1115 Medicaid Waiver Resources. Accessed on: April 25, 2018.

[70] DHCS, DHCS Med-Cal 2020 Demonstration. Accessed on: April 25, 2018.

The proposed approach is to utilize national standards for data structure and exchange. This includes using Consolidated-Clinical Document Architecture (C-CDA) templates as well as eHealth Exchange specifications. The existing HIE infrastructure can be leveraged through CTEN agreements, thereby connecting with community HIEs and other large hospital systems. The use of existing community HIEs supports the expansion of local HIE initiatives. Possible future phases include:

- Further interaction with health plans.
- Bi-directional data exchange for treatment purposes.
- Development of longitudinal medical history for Medi-Cal members.
- Provide Medi-Cal members with access to data.
- EHR Incentive Program MU reporting.

HIE Activities in Support of the DHCS Quality Strategy

- Infrastructure and onboarding of foster care facilities to improve data collection and analytics to improve immunization saturation and medication safety.

- Facilitate the California Virtual Pediatric Intensive Care Unit (PICU) Database to improve care of critically ill infants and children by implementing a shared and interoperable PICU database for patients with chronic pain.

- Support the HIV/AIDS Waiver to improve continuum of care and quality of life for mid- to late-stage patients through health information access and infrastructure.

- Support the Home and Community Based Services Waiver for persons with developmental disabilities to remain in their homes through home-based HIE infrastructure and onboarding.

- Improve access to quality palliative and end-of-life care and practices through HIE infrastructure and onboarding of patients and care facilities such as hospice.

HIE ACTIVITIES IN SUPPORT OF THE DHCS MEDI-CAL 1115 WAIVER

The California Medi-Cal program is advancing integration and use of health information technology across multiple programs. This includes specific programs as part of the waivers with CMS as well as efforts to directly advance MITA maturity for the organization. The range of programs includes but is not limited to:

- **Community-Based Adult Services (CBAS):**
  Support the continued operation of the CBAS program through infrastructure and onboarding to enhance skilled nursing care, social services, therapies, personal care, family/caregiver support, nutrition services, care coordination, and medical transportation to eligible State Plan beneficiaries.

- **California Children's Services (CCS):** Support the continued operation of the project in achieving the desired outcomes related to timely access to care, improved coordination of care, promotion of community-based services, improved satisfaction with care, improved health outcomes and greater cost-effectiveness through funding of infrastructure, network connectivity and onboarding services.

- **Managed Care Delivery for the Coordination Care Initiative (CCI):** Support the continued operation of CCI Multipurpose Senior Services Program (MSSP) for health care management services. These services include a personal emergency response system, information technology and a communications methodology tailored to accommodate the needs of the beneficiary who is otherwise frail and certifiable for placement in a nursing facility but who wishes to remain at home."

- **Quality Oversight and Monitoring of the Coordination of Care Initiative:** Provide network infrastructure and onboarding support for the initiative, which requires each plan to submit encounter data at least monthly on all service utilization by impacted beneficiaries. This reporting allows the State to ensure that sufficient mechanisms and infrastructure are in place for the collection and analysis of encounter data provided by the plans.

- **Public Hospital Redesign and Incentives in Medi-Cal (PRIME):** Provide network infrastructure and onboarding support for PRIME, which requires integration across settings in order to transform patient care systems to create strong links between different settings in which care is provided. These settings include inpatient and outpatient settings, institutional and community based settings, and importantly behavioral and physical health providers.

- **Dental Transformation Initiative (DTI):** Provide network connectivity, infrastructure and onboarding for data collection and analysis for the DTI. The DTI requires that the state measure the impact on the utilization of preventive services and monitor actively participating service office locations. Monitoring efforts include changes in the number of, and percentage change in, restorative services and preventive dental services; reduction of caries risk

levels; the use of emergency rooms for dental related reasons; and any changes in the number and proportion of children receiving dental surgery under general anesthesia.

- **Whole Person Care (WPC):** Provides funding to implement the infrastructure and network connectivity for the WPC program in order to increase integration and coordination among county agencies, health plans, providers, and other entities. Improved integration throughout the specified entities will improve data collection and sharing amongst local entities to support ongoing case management, monitoring, and strategic program improvements.

- **Drug Medi-Cal Organized Delivery System (DMC-ODS):** Provides funding to the DMC-ODS to implement the infrastructure and network connectivity needed to facilitate the secure exchange of information among DHCS Certified Outpatient Intensive Outpatient Facilities, DHCS Licensed and DHCS/ASAM Designated Residential Providers, DHCS/ASAM Designated Chemical Dependency Recovery Hospitals, DHCS/ASAM Designated Free Standing Psychiatric hospitals, DHCS Licensed Opioid Treatment Program Maintenance Providers, DHCS Certified Outpatient Facility with Detox Certification and Licensed Prescribers.

- **Health Homes Program (HHP):** The Health Home Program (HHP) is an ongoing initiative to develop a network of providers that will integrate and coordinate primary, acute, and behavioral health services for the highest-risk (top 3-5 percent) Medi-Cal enrollees. CMS supports the implementation of Health Homes for the underserved, which are intended to "Change the Health Trajectory" of the beneficiary over time such that outcomes are improved and costs reduced. A key component of care within Health Homes is the exchange of health information between the homes and primary care physicians, hospitals and tertiary care facilities. HHP services such as Care Coordination, Health Promotion, and Comprehensive Transitional Care will be enhanced by the use of EHR and HIE.

- **Superior Systems Waiver (SSW):** The SSW (approved by CMS and effective for a two-year period, October 1, 2015 through September 30, 2017) describes the utilization review process for acute inpatient hospitals that serve fee-for-service Medi-Cal patients. It specifies how the non-designated public hospitals and private hospitals will transition from the current use of treatment authorization requests (TAR) for most hospital stays to the use of their own utilization management systems using nationally recognized, evidence-based medical criteria. DHCS plans to roll out the new process incrementally, in a

pilot project fashion, beginning with a small group of 11 hospitals. This measured implementation plan will help DHCS ensure that appropriate processes and system changes are in place so that hospital claims can be paid in a timely manner. DHCS will be implementing HL7 templates as new data standard in existing systems and will assess the need receive HL7 messages through a real-time interface in place of SFTP methods of data transfer.

Based on the advancements of the Provider Application and Validation for Enrollment (PAVE) and Management Information System/Decision Support System (MIS/DSS) (discussed in Section 2.2.1), the following opportunities are also being investigated:

- Develop an application that can interface through application programming interfaces (APIs) between PAVE and MIS/DSS to enable providers to view patient information in the absence of other information when they are seeing the patient.

  - Specific use cases include populations that may be mobile or displaced (foster care, homeless, etc.) as well as disaster events.
  - Connect to methodologies used for presumptive eligibility to develop criteria to be met for providers to look up a patient's information

- Develop alerting functionality to support delivery of admission, discharge, and transfer (ADTs) events to HIEs for hospital and other facility use. Support statewide directory of providers that can be used to support alerting.

- Enable information that can be consumed through an application allowing patients to manage their information between providers.

- Enable connections with other state systems to allow views of data while maintaining data in the secure Medi-Cal repository through secure APIs.

  - Support care coordination with social services (Child Welfare Digital System).
  - Support integration of care with other care providers such as Department of State Hospitals and Department of Corrections.

- Integrate case management systems with provider EHRs both directly and through HIEs using HL7 standards for CDA templates to support care.

- Leverage HL7 standard implementation to support receipt of Quality Reporting Document Architecture (QRDA) messages for quality monitoring.

- Work with Patient-Centered Scalable National Network for Effectiveness Research (pSCANNER) to leverage data models and make data available through a node for research and quality assessments.

While advancing the maturity of DHCS's information systems as guided by the MITA initiative, California is investigating the potential to leverage the MMIS infrastructure to support improved care coordination.

CALIFORNIA HEALTH INFORMATION EXCHANGE ONBOARDING PROGRAM

DHCS solicited ideas for HIE projects from stakeholders that might be supported by this additional funding. Through foundation support, DHCS benefitted from the services of HIE subject matter experts to research opportunities and challenges for onboarding to health information exchanges in California. These efforts included conducting surveys and interviews with representatives from HIEs, hospitals, provider practices, and health care associations. Based on findings and recommendations, DHCS has developed an HIE onboarding program, with goals including increasing the number of Medi-Cal providers that exchange patient data through a Health Information Organization (HIO), expanding data-exchange capabilities, and facilitating provider access to the Controlled Substance Utilization Review and Evaluation System (CURES) prescription drug monitoring program database maintained by the California Department of Justice.

In January 2019, DHCS held an HIE Summit at which an overview of the California Health Information Exchange Onboarding Program (Cal-HOP) was presented. Based on feedback obtained from stakeholders during and subsequent to the HIE Summit, DHCS modified aspects of the Cal-HOP program and presented these changes during webinars held in February and March 2019. These webinars were well attended and resulted in additional feedback, particularly regarding financial assistance for onboarding and development of advanced interfaces to support interoperability. DHCS has submitted a formal request (Implementation Advanced Planning Document-Update) to CMS for enhanced federal funding (90/10) to support Cal-HOP and HIE interfaces to CURES.

2.1.2.2 EXTERNAL HIE INITIATIVES

As described in earlier SMHPs, California's health information exchange (HIE) landscape has evolved through private non-profit initiatives, resulting in several enterprise and community-based health information organizations. Today more than 15 private, non-profit, stakeholder-driven HIEs connect communities in 39 of California's 58 counties. However, just over 270 of California's 400+ acute care hospitals are connected to a community-based HIE currently, leaving a significant gap in hospital connectivity to support coordinated care for Medi-Cal's most vulnerable and highest cost patients.

As Medi-Cal health plans and the hospital industry shift business practices to align with Medi-Cal 2020, they have recognized the need for advances in primary care, cross-system integration and coordination, and data analytics. DHCS is collaborating with Medi-Cal health plans and stakeholders to develop a broad-scale connectivity program that will provide the funding and momentum needed to rapidly close the gaps in hospital and ambulatory connectivity across the state, strengthen existing HIEs as "critical infrastructure," and seek to deepen the level of integration and interoperability among all participants. The hospital data contribution requirements and HIE service requirements envisioned for the connectivity program, which include notification services and standards-based care summary exchange, will help eligible hospitals and professionals more readily achieve health information exchange objectives, while simultaneously building more comprehensive longitudinal patient records to support the Medi-Cal 2020 waiver and associated programs such as PRIME and Whole Person Care.

The connectivity program will aim to have 100 percent of California's acute care hospitals connected to a qualified California HIE within a year of the program's initiation. After the first phase of the program is completed, DHCS will seek additional funding for a second phase focused on statewide ambulatory and long term care connectivity.

On-boarding of providers to regional HIEs is necessary to facilitate MU for eligible providers. Different types of providers have varying issues that need to be addressed. California is proposing a set of onboarding initiatives and evaluating other methodologies that will provide HIE support for the extended set of providers with which eligible providers need to exchange health information in order to meet MU.

Each of the following areas have unique HIE issues to be addressed with technical assistance and on-boarding support:

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

Federal regulations incentivize providers and hospitals to send data to state, local and tribal public health agencies. As such, it is imperative that our public health agencies are supported in the design, development, and implementation of a public health infrastructure for HIE and HIT that will enable EPs and EHs to meet MU public health objectives (i.e., electronic laboratory reporting, immunization registries, cancer registries, specialized registries, and syndromic surveillance). Section 1.14 details the registries and reporting capabilities within California. CDPH is proposing a three-phased approach to advance its capacity to exchange data with EHRs to create fully functional, secure, and confidential information systems for public health surveillance. In addition, DHCS will promote approaches that leverage HIEs:

- Phase 1 – Establish a unified, efficient approach for on-boarding EHRs of targeted Medi-Cal providers to increase communicable disease reporting (CalREDIE), and immunization reporting (CAIR).
- Phase 2 – CDPH received MU public health data reporting across applicable public health programs and improves quality of care for Medi-Cal patients.
- Phase 3– Improved informatics capacity in CDPH for other public health surveillance systems (beyond MU reporting).

PUBLIC HEALTH REGISTRIES

California operates a series of registries to capture public health information.

- California Immunization Registry (CAIR) is a collaborative, decentralized system of eight regional and two county web-based immunization registries. As of July 2017:

  - 3,977 sites (73 percent) are actively submitting data electronically. By July 1, 2018, CDPH hopes to see this number increase to 80 percent (or 4,342 sites).
  - 86 percent (3,482,368) of new doses are being submitted electronically, CDPH's goal is for 90 percent of new doses to be submitted electronically by July 1, 2018.
  - 7 percent (276) of sites are engaged in bidirectional messaging. By July 1, 2018 the goal is for this to increase to 50 percent (2,170) of sites.

- CalREDIE supports the electronic submission of laboratory results for reportable diseases via the ELR system, as well as web-based Confidential Morbidity Reporting. Over the next five years, CalREDIE aims to achieve the following goals:

  - Develop procedures and tools to establish a unified, efficient approach for onboarding EHRs of targeted Medicaid providers so they can address Objective 8 of the Medicaid EHR incentive program, Stage 3 Public Health Reporting Measures, specifically Measure 3: electronic case reporting, by submitting electronic initial case reports (eICR) for state reportable conditions to the CalREDIE.
  - Install, configure and implement capacity to receive eICR into CalREDIE.
  - At least 25 percent of Eligible Providers will transition from paper case reporting or manual entry of case reports into CalREDIE to electronic case reporting, by submitting electronic initial case reports (eICR) for state reportable conditions from the Eligible Providers' EHR system to the CalREDIE.
  - At least 40 percent of state reportable cases will be received into CalREDIE via electronic case reporting (eCR).

EMERGENCY MEDICAL SERVICES AUTHORITY (EMSA)

EMS is often referred to as part of the healthcare safety net. EMS provides entry into the emergency medical care system with response to medical and trauma emergencies (typically through 9-1-1) and prehospital evaluation for approximately four million patients each year. Of those, EMS provides initial stabilization and treatment, and transportation of about three million patients to emergency departments at acute care hospitals in California each year.

When emergencies and disasters occur, individuals may require medical attention from hospitals and other medical providers that do not have any previous history treating that patient. Consequently, the victim's health information, including medications, allergies, major illnesses, etc. is often unavailable to disaster volunteers, emergency responders and emergency facilities caring for them during or after a disaster, leading to suboptimal care and potential patient safety issues.

Leveraging previous HIE progress and lessons learned from the PULSE +EMS pilot funded by the ONC grant for Health Information Exchange in EMS (discussed in Section 1.12.4), EMSA has proposed a Health Information Technology for Emergency Medical Services (HITEMS) project. This will continue the work to create a model for interoperability between EMS electronic records and health information systems, including EHRs, by leveraging HIOs. The model aims to enable paramedics to query patient information and medical history via the HIO, and to promote real-time data exchange from the ambulance-based EHR to the receiving hospital's emergency department via existing HIO exchange capabilities. The technical best practice sets that will be developed from this project will ultimately assist programs to implement onboarding for EMS EHRs to become full participants of HIOs, on par with hospital EHRs, ambulatory EHRs, and behavioral health EMRs.

Disaster response is another area that EMSA proposes to improve through the HITEMS project. The PULSE +EMS pilot provided a limited capability in California for disaster healthcare professionals (including providers who are working outside of a hospital setting, in a mobile field hospital or alternate care site) to exchange or access patient information with HIOs and health systems during disasters.

The HITEMS project aims to produce an interoperable model that will enable bidirectional clinical data exchange between multiple health information organizations in time of widespread emergency or disaster. The bidirectional exchange of health information between field EMS providers and hospitals will lead to improved clinical decision making by paramedics, clinical decision support by hospitals, promote longitudinal electronic health records, and improve population health and transitions of care from paramedics to emergency physicians during emergency situations.

BEHAVIORAL HEALTH

As described in Section 1.9.3, behavioral health providers in many counties throughout California use EHRs acquired through funding from the Mental Health Services Act (MHSA). DHCS remains committed to working with counties on the potential use of MHSA funds to promote HIT/HIE through 90/10 funding opportunities. Although one of the major goals of the MHSA has been the promotion of data sharing between behavioral health and medical health providers, a major barrier has been confusion regarding how such information can be shared within the context of existing state and federal laws. Much of this confusion has been recently resolved with the publication of the *SHIG* by the California Health and Human Services Agency[71]. DHCS is considering ways to expand the application of the guidance offered in the *SHIG*. Based upon feedback obtained from the November 2017 HIE Summit, stakeholders found the guidance offered in the *SHIG* to be greatly beneficial, requesting additional updates to current *SHIG* documentation as well as future guidance for other program areas and further support tools.

DHCS believes that the sharing of a limited mental health data set through a community HIE with patient opt-in consent, as demonstrated in San Joaquin County, represents a practical model that should be considered for deployment widely. DHCS plans to work with state and county behavioral health authorities, HIEs, and other stakeholders to develop a proposal for using SMD #16-003 funding for this purpose.

SUBSTANCE USE DISORDERS

As described in Section 1.4, DHCS identified the need for a full array of SUD services in AI/AN communities, as many of these communities are impacted by SUD-related issues. As the IHP-ODS creates the need, fuller implementation will allow IHP-ODS to contract with providers in a managed care environment to deliver a full array of SUD services consistent with the American Society of Addiction Medicine (ASAM) Treatment Criteria, including recovery supports and services. Designing an IHPODS for treatment of SUD will enhance service coverage, access, program integrity, monitoring, evaluation, quality of care and care coordination for AI/AN Medi-Cal beneficiaries while increasing opportunities for Medicaid reimbursement for tribal 638 and Urban Indian providers. In order to provide oversight of the IHP-ODS, an Administrative Entity will be established which will enable care coordination, provide network adequacy, and oversee the system.

DHCS proposes a project to connect the current urban and tribal EHRs with the new SUD benefit established by the IHP-ODS. The University of California at Los Angeles is creating the data set needed for the IHP-ODS. This project would take this data set and provide

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[71] CHHS, CHHS State Health Information Guidance (SHIG) on Sharing Behavioral Health Information. Accessed on: April 30, 2018.

technical support to integrate the SUD data set into existing EHRs. It would also explore the need to create or expand a current Health Information Exchange. This would enable providers to share physical health, mental health and SUD information for the AI/AN population at the urban and tribal clinics. The project would create SUD provider directories, enable secure electronic messaging that is compliant with 42CFR requirements, query exchanges by the Administrative Entity and providers, and support care plan exchange.

PHARMACIES

The electronic communication of prescription information from acute care hospitals, children's hospitals and eligible professionals to pharmacies is a strategic component of Whole Person Care (WPC)[72] for Medicaid beneficiaries; and especially historically underserved populations. The state expects to entertain supportable HIE funding requests from EP and EH organizations and consortia for onboarding of community-based pharmacies to existing HIEs because of documented deficiencies in Section 1.12.

LABORATORIES

The electronic communication of lab data is a key component of MU requirements. EHs and EPs are required to incorporate lab test results into their EHRs as structured data. In addition, hospitals will be required to provide electronic submission of reportable lab results to public health agencies. These requirements represent some of the biggest challenges for ambulatory providers and hospitals to achieve MU as many smaller laboratories are not prepared to send structured electronic laboratory data to outpatient physicians. DHCS has identified the need to implement a lab solution that benefits Medi-Cal providers and other stakeholders.

PATIENT MATCHING

Patient safety is critically dependent upon accurately identifying a patient, and associating the patient with all of their health records, and not with the health records of another patient. A number of approaches have been proposed to address identification and matching of patient records, such as:

- Master patient/person indexes (MPIs) using deterministic and probabilistic algorithms to match on limited demographics.
- Various query-based standards used by initiatives such as CommonWell and eHealth Exchange to match demographics across organizational boundaries.
- Big-data approaches that use non-healthcare information, such as previous addresses or nicknames for a patient, to better associate a person with their health information.

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[72] DHCS, DHCS Whole Person Care Pilots. Accessed on: April 30, 2018.

Despite these efforts, national networks such as eHealth Exchange and state registries such as CAIR remain unable to identify more than half of the records available for a given individual.

The landscape in California may be unfavorable to a traditional statewide MPI solution. However, the matching of correct health information to patients remains problematic. DHCS is interested in working with stakeholders to identify methods to improve patient matching and the appropriate association of health information with patients that can be used by community HIOs, health systems, and state agencies.

SOCIAL DETERMINENTS OF HEALTH

Health information exchanges have made significant progress in support of eligible providers' sharing of clinical information for their patients; including medical history, recent lab work, current prescriptions, recent procedures, etc. The exchange of this information has generated efficiencies and improved clinical practice, thus benefiting patient care. However, there is growing recognition that health is impacted by every aspect of a person's life, and the social determinants of health (income, education, transportation, personal safety, employment, food, housing, etc.) are the primary drivers of long-term health improvement. This transformative project seeks to enhance health information exchange by integrating social determinants data into EHRs in order to better equip Eligible Providers with a robust/holistic view of their patient's needs.

The project will integrate data from what are currently considered non-covered entities within the HIE lexicon to augment EHR data for whole person care. Supplementary data sources would include data from social services agencies, housing authorities, mental and behavioral health facilities, correctional facilities, schools, census data, public health data, and targeted referral entities: pharmacies, physical therapy, legal, financial, patient navigation, etc. This enhanced view of the totality of the patient's needs will better inform the EP in meeting transitions of care and continuity of care core measures.

Implementation will leverage existing HIE entities, beginning with a large urban environment and a smaller rural environment, from which expansion will promulgate to all interested HIEs in the state. Specific tasks will include identifying the relevant social determinant data sources, examination of their data models, obtaining data use agreements, development of interoperability with secure transmission protocols, reconciliation of each data repository's Enterprise Master Patient Index (EMPI), and development of a consolidated view of the data for access by eligible providers' electronic health record systems.

SPECIALIZED REGISTRIES

Specialized registries require the ability for bi-directional exchange with EHRs, either through interfaces or secure API that supports the virtual integration of systems for the

providers and ensures accurate patient matching and advance interoperability through the involvement of HIEs. California intends to work with specialized registries to provide support for further registry development, on-boarding of providers to support MU measures, and to advance interoperability. Specialized registries that will be evaluated for this support include:

- California's Controlled Substance Utilization Review and Evaluation System (CURES 2.0) is a database of controlled substance prescriptions dispensed in California serving the public health, regulatory oversight agencies, and law enforcement. Exchange between CURES 2.0 and EHRs would support medication reconciliation and enhance patient care. DHCS is also interested in helping to support the development of bi-directional exchange for CURES 2.0.

- The California Parkinson's Disease Registry is a project to develop a confidential database that contains information about the extent and characteristics of Parkinson's disease (PD) in California. Information collected from local physicians, pharmacists and health care facilities (designated as reporting sources in the Registry Act) will include demographic information (such as name, birth date, address) about people with PD, their health care providers (such as physician specialty), as well as basic clinical information (such as date of diagnosis, medications, disease features). The legislation was passed to improve knowledge about the causes and treatment of PD. Little is known about how common PD is among different population groups, what the causes are and where the patterns of the disease change over time. There is growing evidence among researchers that the disease is triggered by an environmental cause. The registry will provide the best opportunity to identify those triggers. California is the only state that has tracked the use of pesticides and other toxic chemicals since the 1970s. As a potential clinical registry pursuant to the MU Stage 2 and 3 regulations, funding would allow for the design, development and implementation of a PD registry as well as the resources to receive electronic data from EHR systems.

- The California Stroke Registry (CSR) is a collaborative effort with the American Heart Association (AHA)/American Stroke Association (ASA) and the California Emergency Medical Services Authority. It is part of a national, federally-funded, data-driven quality improvement system to collect, use and report data related to the treatment of acute stroke across the care continuum (pre-, in-, and post-hospital settings). The CSR is in the testing stage for pre-and in-hospital components, with user acceptance testing underway through 2019. To operate optimally, participating local Emergency Medical Services Agencies (LEMSAs) must ensure that EMS providers are reporting pre-hospital data at 100 percent, in order to facilitate the patient data linkage across the pre- and in-hospital settings. The CSR in-hospital component leverages the data already collected through *Get with the Guidelines*

(GWTG) Stroke[73] by the AHA/ASA. CDPH CSR/CCP is working with its key partners to establish a mechanism to collect post-hospital data. Once this is established, the CSR will be able to link data across the care continuum. One important use of the CSR is to evaluate specific measures of quality of stroke care, such as time-to-treatment for stroke, medications prescribed, and patient disposition at the time of discharge. Furthermore, for the Centers for Medicare and Medicaid Services, the CSR is an acceptable stroke registry for the hospital attestation structural measure of participating in a qualified registry for stroke. Aims for the CSR include:

- A validated data platform available to CDPH and all participating hospitals statewide.
- Features to maintain confidentiality standards and data security.
- Data generated by the stroke database to identify potential interventions to improve stroke response and treatment.
- Real-time hotspots generated to ensure response to issues related to early identification, triage, treatment, and transport of possible acute stroke patients.
- Information and data sharing among healthcare providers on ways to improve the quality of care of stroke patients in the State.
- Strategy development and implementation to improve stroke early identification and treatment, including identifying specific hospital capabilities to receive, treat, and transfer stroke patients.

It is anticipated by 2020 that the CSR may be fully functional, with local users (e.g., hospital staff, providers, emergency medical service workers) able to measure, track, and improve the quality of care for acute stroke patients and strengthen collaboration between state and local Emergency Medical Services Agencies (LEMSAs) and hospitals to improve stroke systems of care.

- The CCR collects information about all cancers diagnosed in California (except basal and squamous cell carcinoma of the skin and carcinoma in situ of the cervix). DHCS is exploring working with CCR to expand the amount and types of clinical information it collects through HIEs and other sources with the objective of linking patients and their providers with potentially helpful clinical trials.

- County Mental Health Client & Service Information (CSI) System is a reporting system that collects client-level service utilization data about California's county mental health programs. Data are provided monthly by county mental health

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[73] American Heart Association, *Get with the Guidelines Stroke*, Accessed May 10, 2018.

programs (MHPs) and summarized at the state level, allowing for improvement in health care management and program administration. The DHCS is in discussions with CSI regarding its possible designation as a specialized registry.

- Physician Orders for Life-Sustaining Treatment Registry (POLST) is a standardized form that records a patient's treatment wishes at the end of life into actionable medical orders, giving seriously-ill patients more control over their medical treatment. Completion of the POLST is always voluntary. In September 2016, the California POLST eRegistry pilot was launched in Contra Costa County and San Diego. When a patient residing in one of the pilot counties voluntarily completed the POLST form, a copy was scanned or uploaded to the POLST eRegistry. Core implementation activities of the pilot project ran through December 2018. The pilot project was originally scheduled to run through February 2019, however, an eight-month extension was added to the original 20 month timeline to address implementation challenges associated with governance, technology integration, and provider engagement. Goals of the pilot project included testing the feasibility, functionality, quality, and acceptability of an electronic POLST registry in two different environments; provider organizations that actively used HIE and those where HIE was still in development. Lessons learned included:

  - *POLST Document Quality, Practices and Workflow*: Across both sites, the pilot demonstrated the importance of understanding and addressing the quality and consistency of organizations' POLST practices before trying to integrate with a registry, to ensure that the information captured in the registry is complete and accurate
  - Outcomes Specific to Type of Care Setting: While many of the implementation enablers or barriers were specific to particular organizations or technology systems, some common findings were associated with the three main types of participant care settings — health systems, skilled nursing facilities, and emergency medical services.

The pilot demonstrated challenges and considerations for a statewide eRegistry rollout and long term sustainability. Ideas for entities interested in pursuing POLST eRegistries fell into five areas and included:

- Organizational readiness and commitment.
- Community engagement/ stakeholder and participant education.
- Workflow considerations.
- POLST document practices.
- Technology features and functions.

Although the pilot did not definitively demonstrate the feasibility of a single California POLST eRegistry, it did point to possibilities for future approaches. The pilot project evaluators identified three potential models with summarized pros, cons, and overall feasibility

Complete results of the pilot project were reported by CHCF in "*California's POLST Electronic Registry Pilot: Lessons for All States*," (Appendix 32). The pilot project demonstrated that DHCS is interested in supporting the development of a statewide bi-directional POLST registry that would be accessible not only to acute care but long-term care facilities, including skilled nursing facilities and hospice. Additionally, DHCS is interested in supporting the development of a unified approach to accessing POLST forms regardless of where they reside.

- Consent is an important element to be considered in health information exchange. DHCS is considering assisting in the creation of a Patient Consent Registry. Patient information may include mental health, substance-use disorder, family planning, sexually transmitted diseases, and other issues. This also might include consent for clinical research and the sharing of information with social service agencies. DHCS is considering developing a specialized registry in which consent information can be stored and easily accessed by HIEs and other entities sharing information.

2.2   IT ARCHITECTURAL CHANGES

To support HIE goals and objectives, DHCS has developed several strategies, initiatives and activities that directly shape the DHCS IT System Architecture landscape. DHCS fully realizes it has a role in the promotion of EHR adoption and health information exchange, and continues to work to advance the business, information, and technical functionality required to support these capabilities.

The broader context of HIE in California is largely supported by other California state government entities (such as CHHS, CalOHII, CDPH), as well as private sector organizations such as CAHIE, thus much of the planned State Medicaid Agency activities during the next five years involve aligning Medi-Cal processes, data, and technology to support the guidelines and directives proposed by these and other organizations. In addition, the state anticipates providing financial support to further these efforts.

2.2.1   MITA ARCHITECTURE

MITA BUSINESS ARCHITECTURE

In terms of business processes, DHCS primarily collects administrative data related to claims and encounters, member eligibility and enrollment, and provider enrollment. This

administrative data is used by DHCS to support the programs administered. Clinical data from EHRs provides a more complete view a member's medical history and, when merged with administrative data, would allow DHCS to improve the quality, efficiency, and cost-effectiveness of care delivered to Medi-Cal members. Merging the data would allow DHCS to do the following:

- Meet federal goals for program improvement and delivery system redesign, such as Medicaid Information Technology Architecture (MITA) and the Medi-Cal 2020 Waiver.
- Improve care for members through care coordination, case management, and quality monitoring.
- Help advance interoperability and health information exchange across the heath care ecosystem.

Since 2013, DHCS has been developing a strategy to incorporate clinical data into the Medi-Cal enterprise and participate in the electronic exchange of health information. This strategy includes sending and receiving data from EHRs and HIE organizations, providing data to members, and exchanging data with state and county departments to support members. As CMS requires all states to advance in MITA maturity, DHCS has set an overall target goal of a MITA Level 3 maturity across all business areas. The use and exchange of clinical data across DHCS business processes improves the efficiency and effectiveness of decision-making, while also promoting national standards for interoperability. Under the direction of the MITA Governance Team, DHCS formed the Clinical Data Workgroup to document high-level business needs for clinical data as well as prioritizing and recommending work efforts for the next three to five years.

MITA INFORMATION ARCHITECTURE

DHCS has already succeeded in advancing Medi-Cal information architecture to many MITA Maturity Level 3 goals. It has documented the Medi-Cal Conceptual and Logical Data Models, at both the enterprise and the business area levels. In addition, DHCS now has a documented Enterprise Data Management Strategy as well as an Enterprise Data Standards and Management Plan. Over the next five years, further architecture advancements will involve extending these standards into true adoption enterprise-wide, including where possible to the Medi-Cal business partners. Specific Medi-Cal 2016 MITA State Self-Assessment information architecture goals include:

- Standardize structure and vocabulary data in support of automated electronic intrastate interchanges and interoperability.
- Adopt industry standards and other nationally recognized standards in support of intrastate exchange of information.

- Target the adoption of an intrastate metadata repository where Medi-Cal defines the data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medi-Cal data and information.
- Adoption of Medi-Cal's Logical Data Models that identify data classes, attributes, relationships, standards, and code sets in support of regional data exchange including clinical information.
- Adoption of an information governance process and structure.
- Adoption of statewide standard data definitions, data semantics and harmonization strategies.
- Adoption of a Conceptual Data Model that depicts the business area high-level data and general relationships for intrastate exchange.

DHCS is also in the exploratory stages of developing a Master Data Management plan and expects to have initiated projects advancing this within the next five years. Related to this is work to develop standards with respect to patient identification and a consolidated master Medi-Cal Provider directory.

MITA TECHNICAL ARCHITECTURE

Overall, DHCS has committed to implement the MITA Framework, industry standards and other national recognized standards for intrastate exchange of information. DHCS technical architecture goals for the next five years expect the following to be achieved:

- Standards established for enterprise content management (ECM), business process management (BPM), and identity access management (IdAM) to provide enterprise solutions.
- Standard ECM, BPM technologies adopted with built-in performance measures
- Enterprise Innovation Technology Services (EITS) developed and using standard requirements for new modernization projects (such as MEDS).
- EITS adopted and using a standard CMDB tool set, with systems cataloged and infrastructure baseline established.
- Utility capabilities for Level 3 supported by new technology (ECM / BPM / IdAM)

2.2.2   STATE LEVEL REGISTRY

California's State Level Registry (SLR) accepts the registration data for Medi-Cal providers from the CMS NLR using Secure File Transfer Protocol Software (FTPS). The interface file is processed and loaded into the SLR**.**

Medi-Cal providers interface with the SLR via the web portal user interface. The application is designed for manual entry of data, with providers directed through a simple set of screens where information is entered that provides the state with the data necessary to determine

Medi-Cal EHR Incentive Program eligibility for EPs and EHs, and payment calculations. By the end of 2018, modifications will be made to support automated payment processes and payment offsets to ensure providers are paid appropriately and in a timely manner. In the interim, DHCS continues to perform quarterly reconciliations.

Conduent hosts the application in a secure data center and manages the development of functionality to ensure that the system remains in compliance with CMS rules for the incentive program. Conduent will continue to operate and enhance the SLR under the existing contract which ends September 2019. The DHCS is working on successfully transitioning the SLR from Conduent to a new vendor, or bringing the system in-house no later than September 2019.

2.2.3 EXISTING PAPER FORMS AND ELECTRONIC HEALTH RECORDS

DHCS still has some forms that professionals are required to use that are only available in a printed format. This requires that Medi-Cal professionals maintain both paper and electronic medical records. The best example of this is the Staying Healthy Assessment (SHA)[74]—a behavioral risk questionnaire that is required to be administered periodically to all Medi-Cal beneficiaries and stored for clinical use in the medical record. See Appendix 17 for an example of the SHA. Medi-Cal professionals, health plans, and some local health authorities would like the SHA incorporated into electronic health records. DHCS held discussions with some EHR vendors but it quickly became apparent that a vendor-agnostic approach is needed. DHCS is currently cooperating with a community HIE (Redwood MedNet) which is developing software that will enable the electronic collection for the SHA and other currently printed forms that is vendor-agnostic and allows sharing of information with providers, the health plan, and the local health department. See Appendix 18 for a description of the Redwood MedNet plan.

DHCS intends to sponsor efforts that will support and expand similar efforts. The exact mechanism for this has not yet been developed, but may include providing competitive grants to software developers, HIEs and others. DHCS believes that the availability of health risk information in an electronic format will be very useful in developing clinical and public health interventions, which will significantly contribute to the meaningful use of EHRs.

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[74] DHCS, DHCS Staying Healthy Assessment. Accessed on: April 25, 2018.

2.3 EDUCATION AND OUTREACH

2.3.1 PROVIDER EDUCATION AND OUTREACH PLAN

DHCS intends to improve upon the original provider education and outreach plan through the addition of a data driven approach to target specific provider groups. AIU outreach efforts have been successful and AIU is now closed. However, there are provider groups that require additional assistance with MU. Outreach efforts will focus on those provider groups having difficulty attaining and progressing through MU.

Current outreach efforts are performed primarily though the Medi-Cal EHR Incentive Program website, email distributions, Twitter, and the bi-weekly stakeholder calls, which include representatives of many groups and clinics. DHCS will add to these outreach methods as follows:

- Perform outreach to groups/clinics and EPs that have not submitted a subsequent application beyond AIU.
- Work with CTAP program organizations to better define barriers to MU.
- Provide one-on-one support to specialists, groups, and clinics with emails and calls when requested.
- Create a streamlined checklist for prequalified groups illustrating group eligibility requirements and use of the SLR.
- Develop a training webinar on MU specifically dedicated to prequalified groups, made available on the Medi-Cal EHR Incentive Program website and advertised through social media. The webinar will address provider concerns specific to MU and HIE, including utilization of patient portals and specialized registries.
- Develop FAQs/tip sheets for all Stage 2 and Stage 3 MU measures.
- Develop a survey specifically for specialty groups to gather insight into barriers in progressing along the stages of MU.
- Provide certificates for attaining MU that providers can post in their offices. See Appendix 11.

Specifically, outreach efforts will consist of a coordinated campaign with the existing network of healthcare stakeholders. This network includes medical and trade associations, clinics, managed care plans, and other stakeholder groups. Much of the MU outreach efforts will be handled by the CTAP program, which was developed to focus on the provider populations that RECs were previously unable to assist. This includes specialists and large groups. The efforts of the CTAP program are discussed in Section 1.8.

GEOGRAPHICAL AREAS WITH LOW EHR-USAGE

DHCS believes that geo-mapping will provide additional insight into the areas of the state that have low utilization or usage of an EHR. While providers are no longer able to submit an application for AIU, it may be possible to target providers and hospitals in these rural or underutilizing populations and provide support related to MU and encourage activities related to interoperability.

ELIGIBLE PROVIDER TYPES WITH LOW MU PARTICPATION RATES

As discussed in Section 1.1.1, the number of dentists meeting MU is substantially lower than other provider types. The survey of dentists conducted by DHCS in 2017 (Appendix 13) revealed a number of actual and perceived barriers to attaining MU. The primary goal of DHCS' targeted outreach to dentists will attempt to ameliorate these barriers. DHCS' ongoing education and outreach plan to dentists will include:

- Working with the California Dental Association (CDA) and other dental stakeholders.
- Attendance and participation in the annual CDA conventions, both in Northern and Southern California.
- Articles and print advertisements targeted to dentist-specific publications.
- Informational articles included with the monthly bulletins posted on the Medi-Cal Dental website for dental providers.
- Follow-up surveys of dentists regarding attaining MU.
- Distribution of the Dental MU tip-sheet (Appendix 14).

Optometrists also had low rates (29 percent) of MU participation. However their low program participation numbers, probably do not justify extensive outreach efforts. DHCS will provide outreach via an Optometrist MU tip-sheet.

2.3.2 HOSPITAL EDUCATION AND OUTREACH PLAN

EHs progressed through the stages of MU more quickly than EPs in California. Over 70 percent of participating EHs are in Year 3 or Year 4 of the program. EH outreach will focus on assisting EHs progress through the stages of MU, particularly Medicaid only hospitals. In this regard, DHCS will:
- Update the EH Quick Start Guide, workbook, and other informational documents as needed for pending changes to the Final Rule.
- Create new training webinars to accommodate changes to the Final Rule.
- Develop user-friendly MU guidance tools, particularly targeted at Stage 3.

2.4 THE FUTURE LEGAL LANDSCAPE

DHCS has identified several areas in which state laws regarding health information exchange could be potentially improved, including eliminating areas of conflict between state and federal laws. The code sections listed below do not represent a comprehensive list and should be considered only as additional information to better understand the future legal landscape in California.

California Health and Safety Code section 11845.5[75] seems to be more stringent than 42 CFR Part 2. Originally when enacted, this section mirrored the confidentiality protections of 42 CFR Part 2 for substance use disorder records and information. However, federal law has evolved over time while this state statute did not change accordingly. State statute does not authorize some of the releases without signed patient authorization that are now allowed by federal law. For example, this statute does not authorize communications between substance use disorder treatment/prevention programs. HIEs may feel that they have liability concerns regarding the adequate collection and maintenance of authorizations because of restrictions in the state statute that do not exist under federal law.

Currently, California Health and Safety Code section 120980[76] protects HIV test results from release without a signed patient authorization. It does not block the release of other information that would identify the patient as a person living with HIV /AIDS. For example, a treatment note that lists the HIV/AIDS diagnosis and medications is not covered by this statute. As with substance use disorders discussed above, this statute may also lead HIEs to have concerns regarding collection and maintenance of authorizations for patients with HIV/AIDS.

California Welfare and Institutions Code section 4514[77] specially protects developmental services information and records. This statute does not have an exception for release to business associates, which are outside entities that perform a health care related function for a health care provider/health plan. This means that developmental services treatment information and records cannot be released without an authorization to a professional person who is not employed by the regional or state developmental center. With treatment being moved from the state to outside facilities, it may be beneficial to patients to have this information available without an authorization to flow through HIEs.

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[75] California Health and Safety Code Section 11845.5. Accessed October 18, 2018.

[76] California Health and Safety Code Section 120980. Accessed October 18, 2018

[77] California Welfare and Institutions Code Section 4514. Accessed October 18, 2018.

While not currently in statute, it might be helpful if California had a statute that expressly authorized electronic signatures on a patient release of information form. This would make the collection less burdensome and would create a record in an EHR that could be uploaded to an HIE. There are not any California or federal laws that expressly permit electronic signatures for authorizations. Currently, paper signatures are collected and scanned but unless certain methods are used in scanning, the text is unrecognizable by search applications.

In order to continue to educate providers about changes in state and federal laws, DHCS plans to support the revision and expansion of the State Health Information Guidance (SHIG) on Sharing Behavioral Health Information to include guidance on sharing health information regarding minors, HIV/AIDS, foster children, informed consent, authorizations, surrogate decision making, electronic signatures, and developmental disabilities.

3   ADMINISTRATION & OVERSIGHT OF THE PROGRAM

The following information documents California's administration and oversight of the Medi-Cal EHR Incentive Program. California has implemented a robust program to ensure eligibility of the maximum number of providers in accordance with the Final Rule, while ensuring that incentive payments are timely, proper, and without fraud or abuse.

3.1   STATE LEVEL REGISTRY

3.1.1   OVERVIEW

The State Level Registry (SLR)[78] is a web-based portal utilizing a Software-as-a-Service (SaaS) solution developed through collaborative work between DHCS, Conduent, and program stakeholders.

With a focus on delivering a user-friendly application, the home page of the SLR has a series of status fields organized in a single view.

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[78] DHCS State Level Registry. Accessed on: April 25, 2018.

FIGURE 14: SLR WELCOME SCREEN
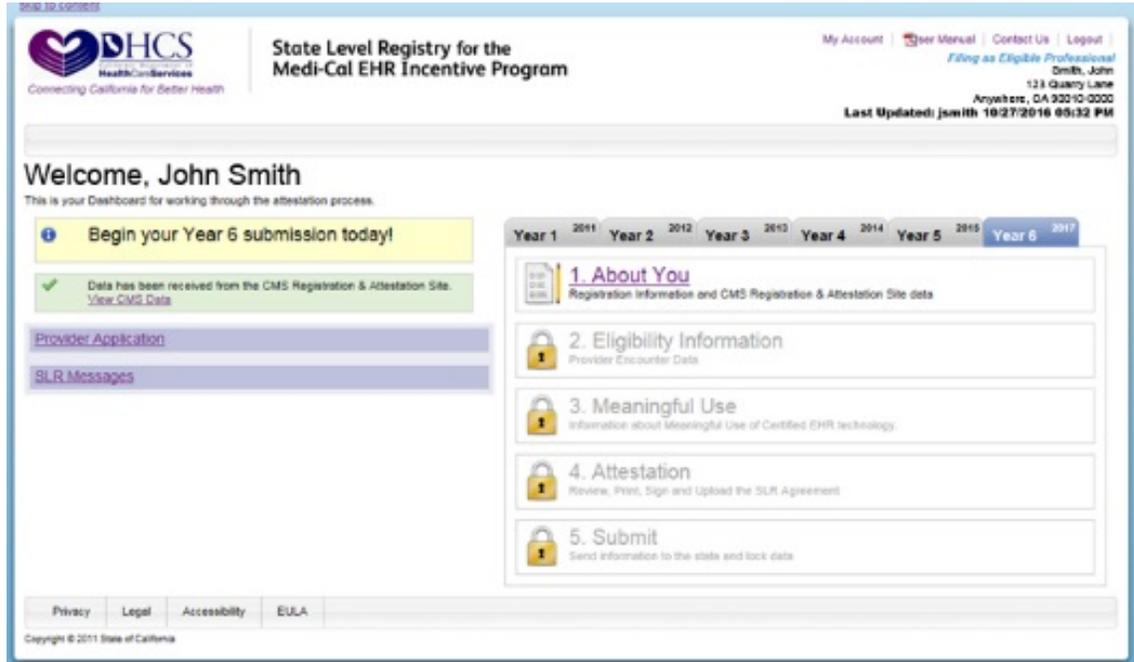
The SLR accommodates a wide range of users and allows providers access to a complete set of tools for state-level registration, attestation, and centralized user management of their SLR account.

The core functions of the SLR application can be categorized into the following:

- Registration (Account Creation)
- Step 1: About You
- Step 2: Eligibility Information
- Step 3: AIU or MU
- Step 4: Attestation
- Step 5: Submit

REGISTRATION (ACCOUNT CREATION)

Participation in the Medi-Cal EHR Incentive Program requires the provider to register through CMS' National Level Registry (NLR) before registering in the SLR. NLR registration data is delivered to the SLR and verified against the state's Provider Master File (PMF) and other data sources to confirm the provider's legitimacy as a Medi-Cal provider. Upon authentication of the provider's credentials, the provider is able to create an account in the SLR.

STEP 1: ABOUT YOU

Users are prompted to enter contact information which includes an email address and telephone number. Additionally, providers will enter their professional license information which is validated with the appropriate licensing board before the provider is able to proceed to the next step.

STEP 2: ELIGIBILITY INFORMATION

Once the user completes Step 1 they proceed to Step 2 where they are prompted to enter eligibility data. The system verifies that the data entered meets the program's eligibility requirements, such as the Medicaid patient volume, before the user is able to proceed to the next step.

STEP 3: AIU OR MU

Once eligibility is confirmed, the provider then continues on to enter AIU or MU data. The option to do AIU was only available during the provider's first year of participation and only through Program Year 2016. As required by CMS guidelines, the AIU option required the provider to provide legal and/or financial binding documentation showing AIU of certified EHR technology. Providers attesting to MU are prompted to enter MU data directly into the SLR and, as of program year 2019, to upload a copy of their EHR MU dashboard. If the provider fails to enter any of the required information or does not meet the requirements of a particular measure, they are notified with system messaging and will be unable to proceed to the next step.

STEP 4: ATTESTATION

Once the provider successfully completes Step 3, they proceed to Step 4 where they are prompted to print, sign, and upload their attestation form. The attestation form is populated with the data the provider entered in Steps 1 through 3. The user may review all content prior to signing and uploading the form to the SLR.

STEP 5: SUBMIT

To complete the process, providers must then submit their application to the state. After the user completes Step 5, the application is then ready for state review.

3.1.2   STATE LEVEL REGISTRY USER ASSISTANCE & RESOURCES

The Medi-Cal EHR Incentive Program rules and regulations, as defined by the Final Rule and interpreted within CMS rulemaking, are complex and can be a barrier to participation by providers and the healthcare community. In order to minimize this impediment and maximize the provider experience, DHCS has provided various tools to assist users in the attestation process.

In the SLR, "Tool Tips" and on-screen directions guide users through each screen and field, showing users an immediate description, definition, or direction for the specific field being completed. Also, in the SLR, users can access the SLR User Manual.

The SLR homepage[79] also notifies providers of SLR updates and changes. In addition, the website provides links to resources that help users understand the program and prepare prior to applying in the SLR. Listed below are some the many resources available on the SLR homepage:

- **Workbooks:** Hospital users are able to enter their eligibility information into Excel-based workbooks to determine if they qualify prior to applying in the SLR. The hospital workbooks not only calculate eligibility, but also collect information to calculate the hospital incentive payment amount over four years.

- **Quick-Start Guides:** These guides walk the user through each step of the SLR registration process, and include screenshots and relevant information for each step of the SLR.

- **FAQs:** Frequently asked questions from our stakeholders and participants have been compiled for easy reference. DHCS continues to update the FAQs as the program evolves and the need for additional FAQs arise.

- **SLR Help Desk:** Providers are able to contact a help desk associate by phone or email for assistance. The hours of operation are from 8am to 5pm PST Monday through Friday, and includes a 24/7 Voice Response System.

3.1.3   SLR/NLR INTERFACES

The SLR interacts with the NLR through designated interfaces designed to exchange pertinent information regarding provider status and payment details.

Communication of the payment cycle is achieved through the following transactions and information exchanges between the state and CMS:

- A D-16 transaction transmits the calculated payment file from the SLR to the NLR to check for duplicate payments, etc. and request approval to pay.

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[79] DHCS State Level Registry. Accessed on: April 25, 2018.

- A responsive D-16 transaction from the NLR identifies any processed or pending payments and exclusions from other states. The D-16 response either approves or rejects the state's request to pay.

- If D-16 approval is received from the NLR, the state will pay the incentive to the provider. Following the payment, the state sends a D-18 transaction to the NLR. The D-18 includes payment information including year, incentive amount, and attestation type (AIU or MU).

The exchanges between the SLR and NLR are illustrated further in the figure below:

FIGURE 15: PROVIDER AIU WORKFLOW
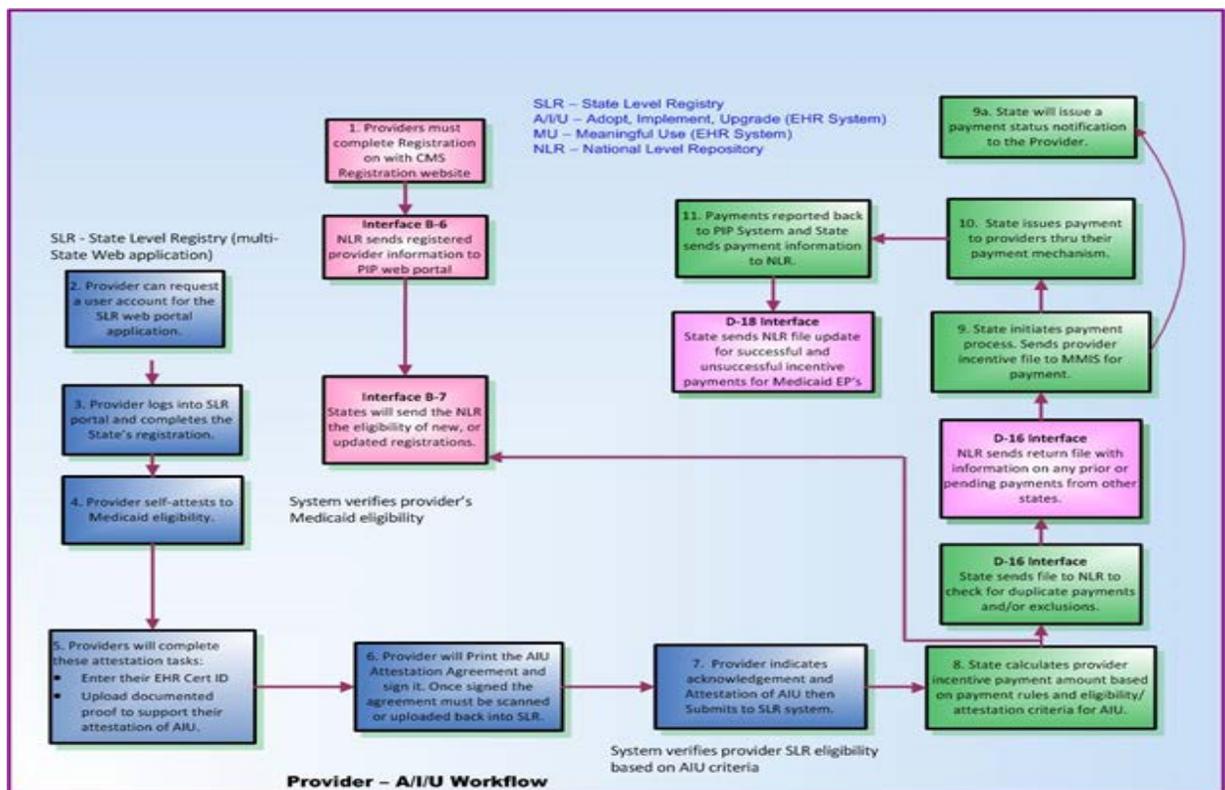
The NLR sends the state a nightly B-6 transaction file containing information on newly registered professionals and hospitals, updated registrations, and cancelled registrations. The NLR captures the email address of each eligible provider and passes that value in the nightly file along with other registration information.

After logging into the SLR, providers may select a sub-menu option for "NLR Data" to open a screen with their NLR information displayed in a read-only format. In addition to the registration details, the NLR Data screen contains the following statement:

"The data on this screen was provided by the National Level Repository (NLR) and contains the information that you provided to the NLR. If any of the information is incorrect, please update your registration information in the NLR. Updates to the NLR data may take up to three days before they can be viewed here."

The link to CMS' Registration and Attestation Site is made available to users should they wish to update their NLR registration information.

3.1.4   PROGRAM UPDATES AND SLR FUNCTIONALITY

The Medi-Cal EHR Incentive Program continues to grow and change as additional guidance and requirements are provided by CMS. DHCS communicates changes to stakeholders through the SLR homepage, email notifications, and via bi-weekly calls with the RECs and CTAP contractors who disseminate information to their providers. The following lists the updates and additional functionality made available in the SLR since the initial launch in October 2011:

- **SLR Launch**: October 2011 – SLR accepting hospital AIU attestations
- **Group and Clinic attestations accepted**: November 15, 2011
- **Provider attestations accepted**: December 2011
- **Stage 1 MU attestations accepted**: September 27, 2012
- **2013 Changes to Stage 1 MU:** October & November 2013 - The SLR was modified in two steps to allow both hospitals and professionals to incorporate 2013 changes in Stage 1 eligibility and MU criteria (delineated in the Stage 2 Final Rule).
- **2014 Changes to Stage 1 MU**: June & September 2014 - The SLR was modified to incorporate 2014 changes in Stage 1 eligibility and MU criteria on June 6, 2014 for hospitals, and September 2, 2014 for providers.
- **Stage 2 MU attestations accepted (hospitals):** June 6, 2014
- **Stage 2 MU attestations accepted (providers):** September 2, 2014
- **Flexibility Rule Changes:** April 1, 2015 **–** The SLR was modified for Program Year 2014 to allow providers to apply under the parameters of the Flexibility Rule (delineated in the Sept 4, 2014 Final Rule).
- **2015-2017 Modification Rule Changes:** The Modification Rule made many changes to MU requirements for both EPs and EHs and defined Stage 3 objectives. For EPs, the updates were available as follows:
    - Program Year 2015, Stage 2
        - AIU: 1/1/2015 – 12/12/2016
        - MU: 8/30/2016 – 12/12/2016
    - Program Year 2016, Stage 2
        - AIU: 1/1/2016 - 5/23/2017 (*first year EP deadline 7/25/2017)

- MU: 12/13/2016 – 5/23/2017 (*first year EP deadline 7/25/2017)
  Since 2016 was the last year that a provider could begin participation in the program, CMS approved DHCS' request to extend the deadline for first-time attesters through 7/25/2017. Providers utilizing this extended deadline were still required to meet all program requirements by 5/23/17.
- Program Year 2017, Stage 2
  - MU: 5/23/2017 – 5/8/2018
- Program Year 2017, Stage 3
  - MU: 3/6/2018 – 5/8/2018
- Program Year 2018
  - MU: 6/21/2018 – 4/5/2019*
  The 2018 SLR attestation deadline was extended from 3/31/2019 to compensate for periods of SLR downtime.

For EHs, the updates were available as follows:
- Program Year 2015, Stage 2
  - AIU: 10/1/2014 – 12/12/2016
  - MU: 8/30/2016 – 12/12/2016
- Program Year 2016, Stage 2
  - AIU: 10/1/2015 – 5/23/2017
  - MU: 8/30/2016 – 5/23/2017
- Program Year 2017, Stage 2
  - MU: 5/23/2017 – 5/8/2018
- Program Year 2017, Stage 3
  - MU: 3/6/2018 – 5/8/2018
- Program Year 2018
  - MU: 6/21/2018 – 4/5/2019*
  The 2018 SLR attestation deadline was extended from 3/31/2019 to compensate for periods of SLR downtime.

- **2017 IPPS Final Rule Changes:** The number of hospital CQMs were reduced from 29 to 16. This update was implemented into the SLR with Program Year 2017, Stage 2 on 5/23/2017.
- **MACRA/MIPS/QPP Final Rule Changes:** The definition of meaningful user was updated and providers were required to attest to supporting health information exchange. This update was implemented into the SLR with Program Year 2017, Stage 2 on 5/23/2017.
- **OPPS Final Rule Changes:** The MU reporting period for 2016 and 2017 was reduced to 90 days for all applicants and allowed all providers to attest to Stage 3 in 2017.

- **2018 IPPS Final Rule Changes:** Effective 10/2/17, the following changes were made in the SLR: the number of EP CQMs required was reduced from 9 to 6 and CQM domains were removed, 11 EP CQMs were removed (from 64 to 53), CQM reporting period was reduced to 90-days (Program Year 2017 only).
- **2019 Physician Fee Schedule Final Rule Changes[80]:** Modifications to the SLR are being made so that EPs will be required to report on six CQMs relevant to their scope of practice. One of the CQMs selected must be an outcome measure. If no outcome measures are relevant to the scope of practice, the EP must report on one high-priority measure as defined by CMS and DHCS. If none of the outcome or high-priority measures are relevant to the EP, six other measures relevant to the EP's scope of practice must be reported.

3.2   ELIGIBLE PROFESSIONALS

The SLR validates provider data to ensure that providers are eligible to participate in the program prior to any payment being issued. The SLR contains enrollment information from the Medi-Cal Provider Master File (PMF). As providers register for user accounts in the SLR, their national provider identifier (NPI) and tax identification number (TIN) are verified against the PMF to determine if the provider is enrolled in Medi-Cal before the user account is created. Since California does not require all Medi-Cal providers, such as those in managed care, to enroll with Medi-Cal, DHCS staff verify eligibility for providers that do not appear in the PMF. This includes researching other data sources and may include lists of providers from managed care plans. Once verified, these providers are entered into the PMF. If a provider is permanently sanctioned in the PMF, the provider is not allowed to create a user account in the SLR. Providers under temporary sanction, or a status that requires review, are allowed to create an account and provide their information for the program but will be flagged for further review to determine their specific eligibility.

The SLR contains information on provider licensing from all the licensing entities within California. During the SLR application process, providers are required to enter their license information. The license data is verified against the provider license master data from the California licensing entities. Providers that practice in Indian Health Clinics or other federal

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[80] CMS, Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B for CY 2019; Medicare Shares Savings Program requirements; Quality Payment Program; Medicaid Promoting Interoperability Program; Quality Payment Program- Extreme and Uncontrollable Circumstance Policy for the 2019 MIPS Payment Year; Provisions From the Medicare Shared Savings Program—Accountable Care Organizations— Pathways to Success; and Expanding the Use of Telehealth Services for the Treatment of Opioid Use Disorder Under the Substance Use-Disorder Prevention That Promotes Opioid Recovery and Treatment (SUPPORT) for Patients and Communities Act. Accessed September 10, 2019.

clinics may be eligible for the incentive program but are not required to be licensed in California. The SLR provides the ability for providers to indicate if they practice in an Indian Health Clinic or other federal clinic as well as provide the license number and state in which they are licensed. This information is verified manually by DHCS. In addition, providers are asked to attest to the fact that they do not practice 90 percent or more of the time in a hospital inpatient or emergency room setting as part of their registration for the state. Beginning in Program Year 2013, providers who attest that they do practice 90 percent or more of the time in a hospital or emergency room setting are able to apply for a waiver of this exclusion if they provide proof that they use a certified EHR in the hospital/ER setting for which they have provided the funding for acquisition (including hardware and software), implementation and maintenance. Providers upload this documentation in the SLR.

After the state validates the provider's eligibility and approves payment, the B-7 eligibility transaction is sent to the NLR confirming the provider's eligibility. This approval occurs when the provider has cleared the automated eligibility checks described above, as well as the manual verifications done by the state. DHCS considers a provider as eligible to participate in the incentive program if the provider is free of sanctions, is properly licensed and credentialed, is a valid provider type under the HITECH act, is not hospital based (unless applying for a waiver of this exclusion), and has documented the minimum percentage of Medi-Cal encounters required by law within the prescribed period.

3.2.1   ELIGIBLE PROFESSIONAL TYPES

California recognizes the provider types designated in the Final Rule as eligible for the Medi-Cal EHR Incentive Program: physicians, nurse practitioners, certified nurse midwives, dentists, and physician assistants. In addition to these provider types, DHCS has designated optometrists as eligible providers as of January 2013, since California's State Plan contains the proper language for this designation as specified in CFR 495, Subpart B, section §495.100 of the Final Rule. The SPA, submitted and approved by CMS is included in Appendix 15.

Physician assistants (PAs) must practice in a PA-led FQHC or RHC in order to be eligible for the Medi-Cal EHR Incentive Program. According to the Final Rule "PA-led" can be established in three ways:

1. The PA is the primary provider in a clinic (for example, when there is a part-time physician and full-time PA, the PA would be considered as the primary provider).
2. The PA is a clinical or medical director at a clinical site of practice.
3. If the PA is an owner of an RHC.

DHCS recognizes a PA as the primary provider when compared to other providers in the clinic the PA is either: assigned the most patients, has the most patient encounters, or has the most practice hours. See Appendix 16 for the PA-led form.

Every PA applicant is required to attest as to which of these criteria qualifies the clinic as PA-led. PAs in California are not permitted by law to have majority ownership in a clinic. Thus, California does not anticipate applicants from PAs under the third criteria.

Pediatricians are eligible to receive reduced incentive payments at the 19.5 percent-29.4 percent Medi-Cal encounter volume level. Per CMS directive, the definition of pediatrician should be consistent with its usage in the Medicaid program. Based on the direction provided by CMS, DHCS uses the criteria for a pediatrician as established by its Child Health and Disability Prevention Program (CHDP), which requires board certification or board eligibility with the American Board of Pediatrics. For verification purposes, the SLR directs pediatricians qualifying at the 19.5-29.4 percent encounter volume level to upload documentation supporting their eligibility, such as a board certificate or a diploma specifying completion of a residency in pediatrics.

3.2.2   ELIGIBILITY FORMULAS FOR PROFESSIONALS

In order to be eligible for the Medi-Cal EHR Incentive Program, EPs must demonstrate that at least 29.5 percent (19.5 percent for pediatricians) of their encounters during a 90-day representative period in the previous calendar year were Medi-Cal encounters. Beginning in Program Year 2016, California expanded this definition and gave providers the option to derive encounters from the previous calendar year **or** the 12 months prior to attestation (see Appendix 21 for the SMHP Addendum approved by CMS on October 3, 2016).

As California has both fee-for-service and managed care programs under Medi-Cal, DHCS allows eligible professionals to choose the eligibility formula that is most advantageous for achieving the minimum threshold for participation in the program.

- **Formula 1:**
  Total Medi-Cal Encounters*
  Total All Patient Encounters

    * Note: Medi-Cal encounters may only be counted once for services received from the same provider on the same day. Medi-Cal encounters must be paid for in part or whole by Medi-Cal or a Medi-Cal demonstration project, including payment in part or whole of an individual's premiums, co-payments, and cost sharing. For this reason Medi-Cal encounters without federal financial participation (not covered by Title 19) may not be counted. This excludes counting encounters

for services in Medi-Cal aid codes— 2V, 4V, 65, 7M, 7N, 7P, 7R, 71, 73, 81. (See **Appendix 22** for a detailed description of these aid codes). In Program Year 2013 DHCS expanded the definition of a Medi-Cal encounter for EHR Incentive Program purposes to be any billable service provided to a Medi-Cal enrolled patient regardless of whether the service was paid for by Medi-Cal. See discussion of billable service above.

- **Formula 2:**

  Total Patients Assigned to a Medi-Cal Panel* + Total Medi-Cal Encounters
  Total Patients Assigned to a Panel* + Total Patient Encounters

  * Note: In order to be counted in either the numerator or denominator, panel patients must participate in managed care, a medical or health home program, or similar provider structure with capitation and/or case assignment. Panel members must have had at least one encounter in the 12 months preceding the 90-day representative period. Beginning in 2013 the "look-back" period was expanded so that panel members can be counted if treated by the provider at least once in the 24 months preceding the 90-day representative period.

EPs practicing with at least 50 percent of encounters in an FQHC or RHC during a 6-month period in the preceding calendar year can add other needy individual encounters to the numerator of either formula in order establish the 29.5 percent (or 19.5 percent for pediatricians) Medicaid patient volume. Beginning in 2013, California exercised the option to change the 6-month look back period for practicing predominately to occur either in the 12 months preceding the date of attestation or the prior calendar year. California's SLR defines other needy individuals as patients enrolled in the Healthy Families Program (HFP), or patients receiving uncompensated care, or no cost or reduced cost care based on a sliding scale determined by the individual's ability to pay. Because children in California's HFP began transitioning to Medi-Cal in 2013, some HFP encounters were included as Medi-Cal encounters in 2014 and all were included in later years for the purposes of establishing eligibility for the Medi-Cal EHR Incentive Program. While the Final Rule defines needy individuals as including Medi-Cal patients, for clarity and to avoid duplicate counting, information on Medi-Cal patient encounters are entered separately from encounters for other needy individuals in the SLR. This change in terminology from the Final Rule does not affect the validity of eligibility calculations as Medi-Cal encounters and other needy individual encounters are added together in the numerator of the eligibility formulas, thus remaining in line with the Final Rule. This approach was discussed with and approved by CMS staff.

3.2.3   GROUP/CLINIC ELIGIBILITY

The Final Rule allows providers in groups and clinics to qualify for incentive payments based on the total patient volumes for the group/clinic. In this way, providers who may not have attained 29.5 percent Medicaid volume based on their own practice are eligible for incentive payments if the group/clinic practice as a whole attains the 29.5 percent threshold. Encounters for all providers, not just those eligible for incentive payments, must be counted and if any provider elects to establish eligibility separately based on his/her encounters in the group/clinic practice, then the entire panel of EPs in the group/clinic cannot use the group/clinic patient volumes to qualify for incentive payments. A provider must have had at least one Medicaid encounter with the group in the previous calendar year or, beginning in 2016, the 12 months prior to attestation in order to be considered a member of the group.

The Final Rule is silent as to the parameters for what constitutes a group or clinic. Additionally, CMS had instructed DHCS that establishing specific parameters that designate a group or clinic is at the state's discretion. With CMS approval, DHCS adopted the following three parameters for defining groups and clinics:

- Clinics – All clinics that are licensed by the California Department of Public Health ("1204a clinics") are considered clinics for the purposes of the Medi-Cal EHR Incentive Program (see Appendix 23 for definition of 1204a clinics).

- Groups – A group of providers that operates as a unified financial entity and has overarching oversight of clinical quality can be considered a group for the purposes of the Medi-Cal EHR Incentive Program. The group must have a single federal employer identification number (FEIN), but subgroups of providers can have separate national provider identifiers (NPIs). As dictated by federal regulations, the encounters of all providers under the FEIN must be counted in determining the patient encounter volumes for the group for the 90-day representative period. Any provider with at least one Medicaid encounter with the group during the previous calendar year or, beginning in 2016, the 12 months prior to attestation can be considered a member of the group for eligibility purposes. Providers practicing predominately in an FQHC or RHC during a 6-month continuous period ending in the program year can be considered members of the group even if they did not have encounters with the clinic during the previous calendar year.

- Designated Public Hospital (DPH) Systems – These systems often utilize one TIN to bill for the services of a large number of providers and data systems and clinical oversight may be divided into separate regions. For these reasons DHCS will consider exceptions, on a case by case basis, that all providers under the single TIN must be registered as a single group. DHCS will assess requests from DPH systems

to create multiple groups to ensure that such requests follow operational and clinical oversight lines of authority and that the encounters of all providers under the TIN are captured appropriately. See Appendix 24 for a group definition proposal from LA County that was approved by CMS and DHCS.

DHCS implemented the SLR's group/clinic module on November 15, 2011. This allowed group/clinic representatives to enter information about groups/clinics before the EP module was implemented on December 15, 2011. Group/Clinic representatives are able to enter identifying information about the group/clinic including: name, address(es), NPI, the names and NPIs of group/clinic EPs, group patient volumes, and CMS Certification ID for EHR Technology. They are also able to upload documentation to assist EPs in demonstrating AIU (contracts, vendor letters, etc.). Group/Clinic representatives are not able to attest for providers nor to enter information about their hospital-based or practice predominantly statuses. EP's will provide this information and attest when they subsequently enter the SLR through the EP module.

When providers enter the SLR they are notified that a group (or groups) has identified them as a member and are given the option of qualifying using the patient volumes of the group, or using their own patient volumes (whether derived from the group or another practice site). If the provider opts to apply as a member of a group, they will inherit the information that was previously entered under the group's SLR application. These providers will be able to change the EHR Certification ID information and AIU documentation if they wish, but are not able to change the group patient volumes that they have inherited. If a provider chooses to qualify for the program using his/her own patient volumes from the group/clinic, they will have the option to "opt-out" of the group in the SLR. If the provider elects to "opt-out" of the group, the group/clinic will be closed and group EPs who enter the SLR after that will be instructed that they must establish eligibility based on their individual (not group) patient volumes. Group EPs who have attested before the "opt-out" occurs will not have their eligibility affected.

To date, DHCS' experience with clinics and groups has demonstrated the effectiveness of the group eligibility option. Of the applications to the program through June 2015, approximately 65 percent were submitted by providers using clinic or group patient volumes to establish eligibility. This greatly facilitates the prepayment verification process for these providers.

3.2.4   PREQUALIFICATION OF PROFESSIONALS AND CLINICS

DHCS and its stakeholders believe that using existing state data sources is a feasible method to identify a large number of providers and clinics eligible for the Medi-Cal EHR Incentive Program before submitting an application through the State Level Registry. The identification of eligible providers and clinics has greatly decreased the amount of work

related to prepayment verification. Annual lists of prequalified EPs and clinics can be accessed through the SLR splash page[81]. This approach has enabled DHCS to do targeted outreach to prequalified providers and clinics. The CMS approved methodologies for "prequalification" of providers and clinics are described below.

PROVIDER ENCOUNTER METHODOLOGY

Encounter volume: The basic approach to "prequalification" of providers is to use their Medicaid encounter volume for the entire preceding calendar year. Providers who attain or surpass the number of Medi-Cal encounters that would be expected of a full-time primary care physician with 30 percent Medi-Cal volume during the preceding calendar year are considered prequalified for incentive payments (if they are not hospital-based). This determination is made for individual providers by DHCS staff by analyzing claims and encounter data in the state's MIS/DSS data warehouse.

Why primary care physicians? The threshold is based on primary care physicians as this provider group sees more patients than non-primary care physicians. In general, specialist physician visits are longer in duration due to the higher complexity of issues addressed. Visits by other EP types also tend to be longer, but for different reasons. Visits to dentists are longer in duration due to the complex procedures that dentists perform. The visits of physician assistants and nurse practitioners tend to be longer, perhaps because they require physician supervision or because they work based on a salary.[82] [83]

Minimum number of Medi-Cal encounters expected of a full time provider: The American Academy of Family Physicians Practice Profile Study (June 2008) found that in the Pacific Region, family physicians have 74.9 office visits, 3.9 hospital visits, 1.9 nursing home visits, and 0.4 home visits per week--for a total of 81.1 visits per week (Appendix 25). From this, it is possible to extrapolate that the total number of expected outpatient encounters in a 46-week work year for a full time physician would be 3,721. A provider would need to then deliver 1,116 encounters in order to attain a 30 percent Medicaid volume. A threshold set at this level is quite high as the demonstration of services to Medicaid patients is sustained over the entire year, not just during a 90-day period. Setting the threshold high for prequalification does not disadvantage provider types that may find it harder to prequalify than primary care physicians. Providers unable to prequalify can apply for the program

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[81] DHCS State Level Registry. Accessed on: April 25, 2018.

[82] Hooker, RS. *Physician assistants in occupational medicine: how do they compare to occupational physicians. Occupational Medicine* 2004, May; 54(3): 153-8). Accessed on May 21, 2018.

[83] Taylor LG. Comparing NPs, PAs, and Physicians. *Advance for NPs & PAs 2007*, Vol. 15(1), 53-54, 57-58. Accessed on May 21, 2018.

through the usual channels using the two formulas specified in the Final Rule. An indirect benefit of prequalification is that DHCS has more time and resources available to assess provider applications, as prepayment encounter volume verification does not have to be conducted for prequalified providers.

Impact of Prequalification. Analysis of 2010 Medi-Cal data indicated that approximately 10.4 percent of Medi-Cal providers would be prequalified using a threshold of 1,000 encounters (see **Figure 16)**.

FIGURE 16: ENCOUNTERS PER PROVIDER, CY 2010
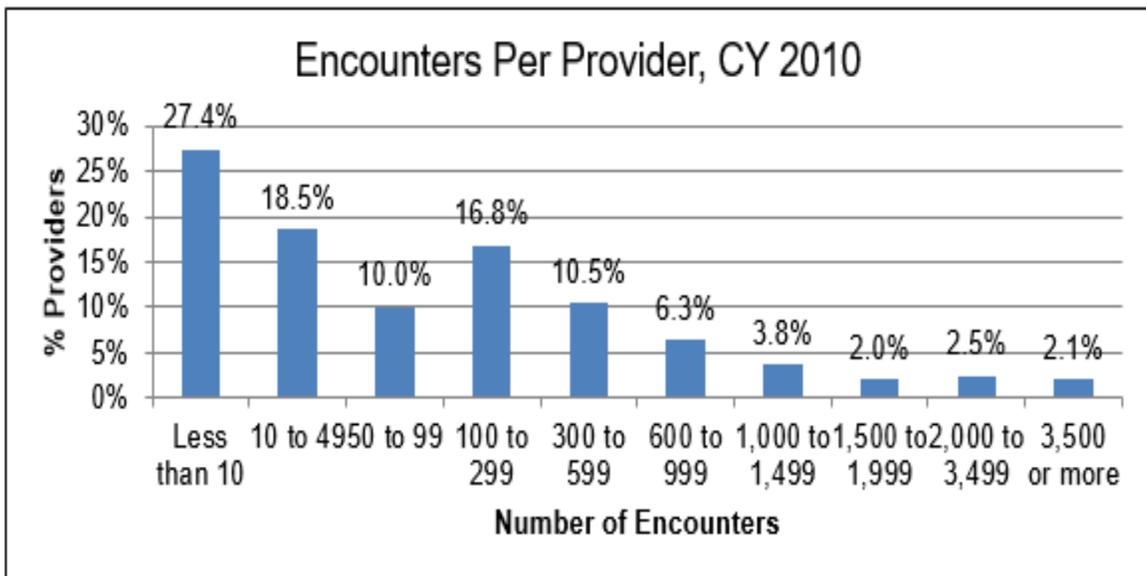
This represents roughly half of the 20 percent of Medi-Cal providers projected by the Lewin Group and McKinsey & Company analysis to be eligible for the incentive program. The break out by provider types is as follows: physicians—10 percent, dentists –12 percent, nurse practitioners –10 percent, and nurse midwives –13 percent. Some part-time practice providers will not be "prequalified" using this methodology, but will still be able to establish eligibility under Formulas 1 or 2 by submitting practice volumes. Similarly, some pediatricians eligible at the 20-29 percent practice level can establish eligibility based on submitted practice volumes but cannot be prequalified using this methodology. DHCS cannot prequalify pediatricians at the 20-29 percent level due to the inability to identify pediatricians in its claims and encounter databases.

Safeguards: It is possible that there may be some EPs who are wrongly prequalified using this methodology because of practicing more than full time and treating few Medi-Cal patients during this additional practice time. However, this methodology does ensure that EPs have attained the minimum number of encounters expected of a full time provider with 30 percent of patients covered by Medi-Cal for the entire year. This methodology will not

result in fewer providers being eligible as providers who are not prequalified are able to use Formulas 1 and 2. The prequalification methodology may be more accurate than Formulas 1 and 2 in that it does not rely on "all payer" denominators reported by providers that cannot be verified against Medi-Cal claims or encounter data. As an additional safeguard, a special attestation form is required for all providers utilizing the prequalification option that includes the following language:

"I have been prequalified by Medi-Cal for the EHR Incentive Program based on having at least 1116 encounters with Medi-Cal patients in [insert prior calendar year] documented in claims and encounter data held by Medi-Cal. I attest that I personally delivered the services for at least 1116 Medi-Cal encounters in [insert prior calendar year]."

To deal with the probability that some providers may improperly bill for services rendered by other professionals despite this being illegal in California, prequalification is not permitted for providers with more Medi-Cal encounters than would be expected for full time practitioners. Based on the American Academy of Family Physicians survey this number would be 3,721. As some providers may work more than full time treating Medi-Cal patients, DHCS plans to set the upper limit of Medi-Cal encounters for prequalification purposes slightly higher at 4,000. This will reduce the percentage of Medi-Cal providers offered prequalification by less than 2 percent (see **Figure 16**).

Potential Advantages: As mentioned above, this prequalification methodology has the potential advantage of being an effective outreach tool for providers. Providers identified through prequalification receive notification letters or e-mails regarding their status, educating them about the program and encouraging them to apply for incentive payments. Providers, particularly those in small offices with manual billing systems, are more likely to apply for the program if they do not have to go to the work of generating the encounter data needed for Formulas 1 and 2. Such providers are probably the ones most in need of the help that the Medi-Cal EHR Incentive Program has to offer. The prequalification methodology also assists DHCS by substantially decreasing the number of prepayment verifications required.

PANEL METHODOLOGY

Panel Volume: The methodology for prequalification of managed care providers is largely derived from the encounter volume methodology. Data from various sources indicate that panel patients have 3.2 to 3.5 encounters per year on the average[84]. DHCS decided to adopt the more conservative 3.2 number for the purposes of prequalification, which results in a

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[84] Davies, MM, Davies M, Boushon B. *Panel size: how many patients can one doctor manage?, Family Practice Management. April 2007, 14(4):44-51*. Accessed on May 21, 2018.

higher threshold than using a higher number of encounters per year. Discussions with the Managed Care Eligibility Workgroup convened by DHCS revealed that 3.2 encounters per year is supported by the data and experience of the participating Medi-Cal health plans.

Using 3.2 encounters per year per panel patient and 3,721 total encounters per year, a provider who treats only managed care patients would be expected to treat approximately 1,060 different managed care patients in a year. To achieve a 30 percent Medi-Cal threshold, the provider would be expected to treat 318 Medi-Cal patients in a year. This number represents a high threshold since non-active patients (those not seen in the previous 12 months) are not excluded from the calculation methodology. DHCS would rather set the threshold too high than too low to prevent improper prequalification of some providers. The methodology for identifying panel members was prepared by DHCS' MIS/DSS contractor, Optum and is described in detail in Appendix 26. This document was prepared based on identifying providers with at least 300 Medi-Cal panel patients per year, but the same methodology would apply to the higher threshold of 318. As with the other methodologies, hospital-based providers will not be prequalified.

DHCS does not directly track which Primary Care Physicians (PCPs) are selected by Medicaid enrollees. However, this prequalification methodology essentially accomplishes this by using managed care encounter data to link patients to providers. Only PCPs are expected to have a sufficient number of unique managed care patients linked to them to qualify for prequalification. DHCS set a higher bar for prequalification for managed care providers by allowing prequalification either based on panel members or encounters (see Patient Encounter Methodology above), but not based on panel members plus encounters.

Potential Impact: Analysis of encounter data for 2010 in the MIS/DSS data warehouse indicates that approximately 6 percent of Medi-Cal providers were identified as having treated at least 300 Med-Cal managed care patients in 2010.

TABLE 11: MEDI-CAL PANEL PATIENTS

Number of Patients Per Provider	Physician No.	Physician %	Dentist No.	Dentist %
Less than 10	17,577	56%	238	71%
10 to 49	7,271	23%	52	16%
50 to 99	2,343	7%	13	4%
100 to 299	2,479	8%	18	5%
300 to 599	921	3%	4	1%
600 to 999	403	1%	2	1%
1,000 to 1,999	355	1%	2	1%
2,000 or More	199	1%	4	1%
Total Providers	31,548	100%	333	100%
Providers with 300 or more patients	1,878	6%	12	4%
Patients Per Provider, Mean	88	-	65	-
Patients Per Provider, Median	7	-	2	-
Patients Per Provider, Min	1	-	1	-
Patients Per Provider, Max	25,381	-	3,220	-

*Includes providers with at least 1 patient served under Program Code 02 or 04 in 2010.

This methodology identifies only slightly more than half the number of providers as the encounter methodology. However, it may accurately reflect the reality that fewer managed care providers are high volume providers of care for Medi-Cal patients.

Safeguards: This methodology has the same difficulty as the patient encounter methodology in dealing with the very high volume providers. It is possible that some providers have healthier panel patients who are seen less frequently than 3.2 times per year. It seems unreasonable that any provider could see a Medi-Cal patient panel more than 2 times the number of 1,060 expected for a full time practitioner seeing only Medi-Cal panel patients. Also, the California Code of Regulations (Title 28, Division 1, Chapter 1, §1300.67.2) specifies that there shall be at least one full time equivalent primary care physician for each 2000 enrollees in a health plan. For these reasons, DHCS plans to set an upper limit of 2,000 panel patients for the purposes of prequalification. This would eliminate the top 1 percent of Medi-Cal panel providers from prequalification. Also, similar

to the patient encounter methodology, providers are required to sign an attestation form including the following:

"I have been prequalified by Medi-Cal for the EHR Incentive Program based on having treated at least 318 Medi-Cal panel patients in [insert prior calendar year] documented in claims and encounter data held by Medi-Cal. I attest that I personally delivered the services for at least 318 Medi-Cal panel patients in [insert prior calendar year]."

Potential Advantages: The patient panel prequalification methodology has advantages similar to the patient encounter prequalification methodology. Both methodologies limit the amount of prepayment verification conducted by DHCS. Medi-Cal managed care plans are supportive of the panel prequalification methodology.

CLINIC METHODOLOGY

The basic approach to prequalifying clinics involves using data from the Office of Statewide Health Planning (OSHPD) Annual Utilization Report of Primary Care Clinics to determine which clinics in the preceding calendar year had 30 percent or more of encounters attributable to Medi-Cal patients and needy individuals. Licensed clinics in California, including FQHCs, are considered 1204(a) clinics as defined by the California Health and Safety Code that governs them (see Appendix 23). 1204(a) clinics are either community clinics or free clinics and all are required to be non-profit and treat patients for free or charge based on their ability to pay. All 1204(a) clinics, including FQHCs, are required to report the same data annually to OSHPD. For this reason, it is justifiable to treat community and free clinics equally for the purposes of prequalification with the exception that clinics that are not FQHCs or RHCs would not be eligible for prequalification based on needy individual encounters. The OSHPD database is very robust with regard to payment sources, allowing easy delineation of Medicaid encounters from needy individual encounters. This report contains all of the information needed for determination of clinic-wide patient volumes and, unlike claims and encounter data, contains accurate data on all payer sources that can be used to generate all-payer denominators. The data in the OSHPD report tends to be highly accurate since it is generated by electronic practice management systems in over 90 percent of the clinics. The payment source categories in the OSHPD report and their relevance to eligibility for the Medi-Cal EHR Incentive Program are listed below:

- Medicare
- Medicare Managed Care
- Medi-Cal (Medi-Cal/ Needy)
- Medi-Cal Managed Care (Medi-Cal/ Needy)
- County Indigent/ CMSP/ MISP (Medi-Cal/Needy)

- Healthy Families Program (California CHIP) (Needy Pre-2014; in 2014 transitioned to Medi-Cal)
- Private Insurance
- Self-Pay/ Sliding Fee (Needy)
- Free (Needy)
- Breast Cancer Programs (Medi-Cal/Needy)
- Child Health and Disability Prevention Program (Medi-Cal/ Needy)
- EAPC (Expanded Access to Primary Care) (Needy)
- Family PACT (Medi-Cal/ Needy)
- PACE Program (Medi-Cal/Needy)
- LA County Public Private Partnership (Medi-Cal/Needy)
- Alameda Alliance for Health (Medi-Cal/Needy)
- Other County Programs
- All Other Payers
- Total

Some Indian health programs in California are exempt from licensure and OSHPD reporting requirements as they operate on tribal land. These clinics would not be able to be prequalified using the OSHPD methodology outlined above. As such, DHCS has gained approval from CMS to use an alternate approach for prequalifying Indian health programs who do not report to OSHPD. Using the Resource Patient Management System (RPMS), the Indian Health Service California Area Office (IHS CAO) runs reports for those exempt Indian health programs using the same parameters used by the Indian health programs that are required to submit annual reports to OSHPD. These reports are submitted to DHCS on a yearly basis to determine if the Indian health program has met the minimum criteria to be prequalified based on Medicaid encounters or Medicaid with needy individual encounters.

Impact of Prequalification: Analysis of the 2010 OSHPD data indicates that approximately 83 percent of FQHC clinic sites would be prequalified at the 30 percent Medi-Cal volume level and 97 percent at the 30 percent needy individual level (see **Table 12**). For the non-FQHC sites, 194 would be prequalified, representing approximately 50 percent of all non-FQHCs.

TABLE 12: 2010 OSHPD ENCOUNTERS

2010 OSHPD Encounters	2010 OSHPD Encounter Totals	2017 OSPHD Encounters	2017 OSPHD Encounter Totals
FQHC Total	563	FQHC Total	868
Medi-Cal Total	466	Medi-Cal Total	805
30% Medi-Cal	83%	30% Medi-Cal	93%
Needy Total	544	Needy Total	820
30% Needy	97%	30% Needy	94%
Non-FQHC Total	394	Non-FQHC Total	440
Medi-Cal Total	194	Medi-Cal Total	218
30% Medi-Cal	49%	30% Medi-Cal	50%

Potential Advantages of Prequalification: One of the hallmarks of primary care clinics is that operations are conducted on a team based care model and bill by the entity, not by the rendering provider. This billing model poses difficulties because Medi-Cal cannot easily confirm through the claims and encounter data that a specific provider at a clinic was responsible for a particular encounter. Prequalification using OSHPD data overcomes this problem for the vast majority of clinic providers and makes use of claims and encounter data unnecessary for confirming patient volumes. This methodology also provides a rich source of information about needy individual encounters and commercial payer encounters that is not available from Medi-Cal claims and encounter data. The clinic community in California is highly supportive of prequalification of clinics using OSHPD data.

DHCS believes that prequalification of clinics is a necessary adjunct to prequalifying providers. Providers who receive notification that they have been prequalified based on their individual encounters may see little motivation to qualify for the program as a member of their group or clinic. If high volume providers do not participate as group or clinic members, many group or clinic providers with less than 30 percent patient volumes may not be able to qualify for the program. Prequalification of clinics will enables the proactive education of their providers and enrollment for group eligibility.

3.3   ELIGIBLE HOSPITALS

To be eligible for incentives, hospitals must demonstrate that at least 10 percent of discharges during a 90-day representative period in the previous federal fiscal year (FFY) are Medicaid discharges. Beginning in Program Year 2016, with CMS approval, California has expanded this definition to allow hospitals to derive encounters from the previous FFY

or the 12 months prior to attestation. Additionally, the average length of stay must be 25 days or less.

To determine the number of Medicaid discharges, hospitals can include fee-for-service and managed care inpatient discharges, and emergency room encounters. Hospitals are instructed to use any auditable data source to derive their encounter data and must upload the backup documentation used for state review and verification. To calculate average length of stay, hospitals are instructed to enter the Total Inpatient Bed Days and Total Discharges from the hospital cost report ending in the prior FFY.

Children's hospitals are not required to meet 10 percent Medicaid discharge eligibility threshold and are automatically eligible to apply if they meet the average length of stay threshold of 25 days or less. Children's hospitals are identified in the SLR using the hospital's CCN number.

In 2016, DHCS secured CMS approval to allow hospitals submitting a new application to the program for the first time to apply with auditable discharge data from the most recent 12-month continuous period that ends before the end of the federal fiscal year that serves as the first payment year. Previously, DHCS had required the 12-month continuous period to end before the start of the federal fiscal year that serves as the first payment year.

3.4 ATTESTATION REQUIREMENTS

3.4.1 ADOPT, IMPLEMENT, OR UPGRADE (AIU)

Through 2016, providers and hospitals in their first program year were given the option to attest to adopting, implementing, or upgrading (AIU) to a certified EHR technology instead of attesting to MU.

- **Adopt:** to acquire and install a certified EHR system
- **Implement:** to begin using a certified EHR system
- **Upgrade:** to expand a certified EHR system that is already in use

As a component of attestation for AIU, the provider or hospital must have provided signed documentation demonstrating a legal and/or financial binding commitment to adopt, implement, or upgrade certified EHR technology.

The provider was not limited to submission of a contract and may submit other documentation for attestation such as a receipt, software license agreement, purchase order, service order, lease agreement or a services contract in the case of a remotely hosted certified EHR solution. In addition, the provider could upload a completed copy of a vendor

letter signed by a vendor representative and including the pertinent information of the binding agreement for AIU of CEHRT between the vendor and the EP. While the submission of the latter was not required or sufficient, it assisted DHCS in assessing the validity of AIU commitments. Providers and hospitals were for AIU and currently are for MU required to upload a copy of the page from the ONC website that shows the EHR technology and its corresponding certification ID. The SLR validates that the certification ID entered is valid, and from an acceptable year before allowing the user to proceed. For example, those attempting to enter a 2011 CEHRT ID or a 2011/2014 CEHRT ID in Program Year 2014 and beyond were stopped by the SLR.

3.4.2 MEANINGFUL USE

Providers and hospitals in their second year and beyond are required to attest to meaningful use (MU) of a certified EHR technology in order to continue receiving incentive payments. For professionals and Medicaid-only hospitals, the SLR routes users to the appropriate MU objectives and measures, which are determined by the year and MU stage the provider is in. The information for each objective and measure, as defined by CMS, is collected in the SLR. Users must input their data and meet the minimum thresholds or claim the appropriate exclusions for all required objectives in order to be deemed a meaningful user. The SLR guides users through the process by providing descriptions and definitions for each objective and measure, as well as providing users with an immediate "pass" or "fail" response after their data is entered and saved. Users who "fail" MU requirements are not be able to complete the attestation process in the SLR. Users who "pass" MU requirements must sign and submit an attestation to the state that includes all of the MU data entered into the SLR. The SLR will not collect MU data from dual-eligible hospitals as they are required to report their MU data directly to CMS. The SLR allows but does not require providers to upload supporting documents for MU objectives and CQMs.

Listed below are the final rules published by CMS that have defined the MU requirements for the Medicaid EHR Incentive Program. See Appendix 27 for specific MU requirements for each program year.

STAGE 1 FINAL RULE

On July 28, 2010 CMS published the first of many Final Rules[85] that would define the requirements for the Medicaid EHR Incentive Program. In this initial Final Rule, requirements for Stage 1 MU were defined.

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[85] Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Final Rule. Accessed May 21, 2018.

STAGE 2 FINAL RULE

On September 4, 2012, CMS published the Stage 2 Final Rule[86] which in addition to defining requirements for Stage 2, also revised the requirements for Stage 1 in 2013, and Stage 1 in 2014.

FLEXIBILITY FINAL RULE

Beginning in 2014, providers and hospitals that completed at least two years of Stage 1 MU were to progress to Stage 2 MU which requires use of 2014 CEHRT. However, on September 4, 2014 CMS issued The 2014 Edition EHR Certification Criteria Final Rule[87] (also known as the "Flexibility Rule"). This rule enabled hospitals and providers who had been unable to fully implement a 2014 CEHRT because of delays in the availability of 2014 CEHRT to attest for MU in 2014 using two alternative pathways--2013 Stage 1 objectives and measures or 2014 Stage 1 objectives and measures--depending on the MU stage for which they were scheduled to report. The Flexibility Rule was implemented into the SLR on April 1, 2015. Due to the late implementation, CMS approved the extension of the Program Year 2014 deadline to from March 31, 2015 to June 14, 2015 to allow providers ample time to apply using the Flexibility Rule. See Appendix 20 for the Flexibility Rule Addendum that was approved by CMS.

Hospitals and providers taking advantage of the Flexibility Rule were required to designate at least one of the following vendor-related reasons in the SLR to establish their eligibility to use the Flexibility Rule and were given the ability to upload documentation into the SLR supporting the reason(s) designated:

- Software development delays.
- Certification delays.
- Implementation delays by the vendor.
- Delays in release of the product or update by the vendor.

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[86] Medicare and Medicaid Programs; Electronic Health Record Incentive Program—Stage 2; Health Information Technology: Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology, 2014 Edition; Revisions to the Permanent Certification Program for Health Information Technology; Final Rules. Accessed May 21, 2018.

[87] Medicare and Medicaid Programs; Modifications to the Medicare and Medicaid Electronic Health Record (EHR) Incentive Program for 2014 and Other Changes to the EHR Incentive Program; and Health Information Technology: Revisions to the Certified EHR Technology Definition and EHR Certification Changes Related to Standards; Final Rule. Accessed May 21, 2018.

- Unable to train staff, test the updates system, or put new workflows in place due to delay with installation of 2014 CEHRT by the vendor.
- Other vendor related delays.
- Inability to meet Summary of Care objective due to inability of receiving hospital(s)/provider(s) to receive transmission (applies to using 2014 Stage 1 instead of 2014 Stage 2 only).
- MU 2015-2017 Modification/Stage 3 Final Rule.

In October 2015, CMS published a revised Final Rule[88] which updated MU requirements beginning in Program Year 2015. Under the modified rule, CQMs remained the same, but Stage 1 was eliminated and Stage 2 objectives were updated to include alternate exclusions for providers scheduled to be in Stage 1. In addition, Stage 3 requirements were defined. Due to SLR limitations in providing alternate exclusions separately for each measure, CMS approved a methodology for Program Year 2015 that presented providers who were scheduled to be in Stage 1 with two separate MU paths: in one path, all alternate exclusions were automatically accepted while in the second path providers were presented with Stage 2 objectives only. See Appendix 27 for the addendum submitted to CMS and approved on 3/10/2016. Beginning in 2017, Stage 2 is required for all EPs and EHs (note: in 2017, EPs and EHs also have the option to attest to Stage 3 per CMS FAQ 18257[89]). Beginning in 2018, Stage 2 will no longer be available and Stage 3 will be required for all EPs and EHs.

2017 IPPS FINAL RULE

The IPPS rule[90] (published 8/22/2016) reduced the number of hospital CQMs available from 29 to 16 beginning in Program Year 2017. Instead of reporting on 16 out of 29 CQMs from among at least three domains, EHs now are required to report on all 16.

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[88] CMS, Medicare and Medicaid Programs; Electronic Health Record Incentive Program—Stage 3 and Modifications to Meaningful Use in 2015 through 2017; Final Rule. Accessed May 21, 2018.

[89] Centers for Medicare & Medicaid Services, CMS FAQ 18257. Accessed May 21, 2018.

[90] CMS, Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long-Term Care Hospital Prospective Payment System and Policy Changes and Fiscal Year 2017 Rates; Quality Reporting Requirements for Specific Providers; Graduate Medical Education; Hospital Notification Procedures Applicable to Beneficiaries Receiving Observation Services; Technical Changes Relating to Costs to Organizations and Medicare Cost Reports; Finalization of Interim Final Rules With Comment Period on LTCH PPS Payments for Severe Wounds, Modifications of Limitations on Redesignation by the Medicare Geographic Classification Review Board, and Extensions of Payments to MDHs and Low-Volume Hospitals; Final Rule. Accessed May 21, 2018.

MACRA/MIPS/QPP FINAL RULE

The MACRA/MIPS[91] rule (published 11/4/2016) changed the following program requirements effective on 1/1/2017:

- Updated the definition of a meaningful user to include supporting providers with the performance of CEHRT (SPPC).
- Required providers and hospitals to attest to supporting providers with the performance of CEHRT (SPPC).

OPPS FINAL RULE

The OPPS Rule[92] (published 11/14/2016) changed the following program requirements:
- Reduced the MU Reporting Period to 90-days for all applicants in 2016 and 2017.
- Allows all providers and hospitals to attest to Stage 3 in 2017 (further clarified in CMS FAQ 18257[93]).
- Modifies measure calculations to require that actions included in the numerator occur within the calendar year that the EHR reporting period occurred.

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[91] CMS Medicare Program; Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive Under the Physician Fee Schedule, and Criteria for Physician- Focused Payment Models. Accessed May 21, 2018.

[92] CMS, Medicare Program: Hospital Outpatient Prospective Payment and Ambulatory Surgical Center Payment Systems and Quality Reporting Programs; Organ Procurement Organization Reporting and Communication; Transplant Outcome Measures and Documentation Requirements; Electronic Health Record (EHR) Incentive Programs; Payment to Non-excepted Off-Campus Provider- Based Department of a Hospital; Hospital Value-Based Purchasing (VBP) Program; Establishment of Payment Rates Under the Medicare Physician Fee Schedule for Non-excepted Items and Services Furnished by an Off-Campus Provider-Based Department of a Hospital. Accessed May 21, 2018.

[93] Centers for Medicare& Medicaid Services, CMS FAQ 18257. Accessed May 21, 2018.

2018 IPPS FINAL RULE

The 2018 IPPS Rule[94] (published 8/14/2017) changed the following program requirements (effective in SLR 10/2/17):

- Reduced the CQM Reporting Period to 90-days in Program Year 2017.
- Removed 11 EP CQMs (from 64 to 53).
- Changed the EP CQM requirement from 9 CQMs among 3 domains to any 6 CQMs relevant to the provider's scope of practice.
- Stage 3 is now optional in 2017 and 2018, and required beginning in 2019.
- In 2018, those attesting to Stage 2 can use 2014, 2014/15 Combo, or 2015 CEHRT, those attesting to Stage 3 can use 2014/15 Combo, or 2015 CEHRT.

2019 PHYSICIAN FEE SCHEDULE FINAL RULE[95]

The 2019 Physician Fee Schedule Final Rule (published 11/23/2018) changed the following program requirements:

- EPs reporting MU for the first time must report on a 90-day eCQM reporting period.
- Requires EPs to report on six CQMs relevant to their scope of practice. One of the CQMs must be an outcome measure. If no outcome measures are relevant to the scope of practice, the EP must report on one high-priority measure as defined by CMS and DHCS. If none of the outcome or high-priority measures are relevant to the EP, six other measures relevant to the EP's scope of practice must be reported.
- Allows states to designate any additional high-priority eCQMs.

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[94] CMS, Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long- Term Care Hospital Prospective Payment System and Policy Changes and Fiscal Year 2018 Rates; Quality Reporting Requirements for Specific Providers; Medicare and Medicaid Electronic Health Record (EHR) Incentive Program Requirements for Eligible Hospitals, Critical Access Hospitals, and Eligible Professionals; Provider-Based Status of Indian Health Service and Tribal Facilities and Organizations; Costs Reporting and Provider Requirements; Agreement Termination Notices. Accessed May 21, 2018.

[95] CMS, Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B for CY 2019; Medicare Shared Savings Program Requirements; Quality Payment Program; Medicaid Promoting Interoperability Program; Quality Payment Program- Extreme and Uncontrollable Circumstance Policy for the 2019 MIPS Payment Year; Provisions from the Medicare Shared Savings Program- Accountable Care Organizations- Pathways to Success; and Expanding the Use of Telehealth Services for the Treatment of Opioid Use Disorder Under the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment (SUPPORT) for Patients and Communities Act. Accessed September 12, 2019.

- DHCS has designated CMS 74 (Primary Caries Prevention Intervention) as a high priority measure for California.

3.5   VERIFICATION AND VALIDATION

DHCS has developed an administrative review process designed for two explicit objectives:

- Address issues with providers and hospitals proactively to avoid appeals whenever possible.

- Work with providers and hospitals proactively in order to ensure that as many as possible meet the eligibility requirements within the constraints of the Final Rule.

3.5.1   PREPAYMENT ELIGIBILITY VERIFICATION FOR ELIGIBLE PROFESSIONALS

Prepayment verification of eligibility is carried out on 100 percent of the EP applications. Providers who have not been prequalified are required to upload backup documentation to support their Medi-Cal encounters. The number of Medi-Cal encounters reported in the numerator of Formula 1 or Formula 2 is verified against the uploaded backup documentation and can be verified against claims and encounter data maintained in the DHCS MIS/DSS system. DHCS contracted with Optum to develop of a script that can be used by DHCS analysts in this verification process. The analysts can run the query against the MIS/DSS database for single or multiple NPIs in order to ascertain actual encounter volumes. After 2011, DHCS required all providers to upload supporting documentation because of the high percentage of providers who were unable to be verified using MIS/DSS data alone. Currently, the MIS/DSS data is only used in special cases to verify provider eligibility, such as encounter volumes at or very near the 30 percent threshold.

FQHC or RHC providers who are not prequalified have their verification conducted by DHCS staff using the uploaded backup documentation and OSHPD's Annual Utilization Report of Primary Care Clinics. This report documents clinic encounters categorized by payer source. Applications with reported numbers greater than a small percentage above documented numbers where the discrepancy would affect the attainment of the required eligibility threshold (30 percent or 20 percent patient volume) are referred to Audits & Investigations for further examination. As the Annual Utilization Report of Primary Care Clinics uses annual data, DHCS staff determines if the annual data is not representative of the reporting period (for example, the clinic was not operational during part of the year) before referral to Audits & Investigations staff. All providers claiming to practice predominantly, with 50 percent or more services in a FQHC or RHC have a clause stating such added to their attestation. The attestation must be signed and dated by the provider in order for the EP to be approved for payment. If there is a question about the signature, DHCS staff compares it to that on other

documents signed by the EP that are held by the state, such as Medi-Cal fee-for-service applications submitted to the Provider Enrollment Division.

Group encounter volumes are required to include the encounters performed by non-EP providers. As non-EP encounters are not captured in DHCS's claims or encounter data, it is impossible for DHCS to carry out prepayment verification of most group volumes using MIS/DSS data. As such, group representatives are required to upload backup documentation that supports group volume data. Group eligibility will therefore be subject to aggressive post payment audit by Audits & Investigations.

As DHCS does not have access to an all-payer database, DHCS staff is unable to verify the numbers reported in the denominators of either Formula 1 or Formula 2, or to accurately determine whether or not a provider is hospital-based. Providers are required to attest to the validity of all information entered into the SLR. However, Audits & Investigations Division staff investigate this information by requiring further documentation or through onsite audit visits. DHCS also does not have data regarding most non-EP visits. When applications including non-EP encounters are selected for verification, the review may be passed by OHIT staff to Audits & Investigations, which can audit a variety of data sources, such as clinic visit calendars or encounter logs.

3.5.2 PREPAYMENT MU VERIFICATION FOR ELIGIBLE PROFESSIONALS

The SLR does not require EPs to upload documentation for MU objectives or measures, although each objective or measure page provides an upload capability. EP's or their group/clinic representative are required to upload a copy of their EHR report dashboard and security risk assessment for review by DHCS staff before approval for payment is granted.

It has been difficult to verify that a provider is using the proper CEHRT throughout the MU reporting period in 2018 and 2019. This is because when providers attested in early 2019 for program year 2018, they reported using 2015 CEHRT. However, they had used 2014 CEHRT at the start of program year 2018 that was subsequently withdrawn from ONC certification before the 2015 CEHRT was certified by ONC. Although the provider continuously used an EHR that was certified by ONC for either 2014 or 2015 standards throughout the MU reporting period, this has been difficult to verify through the ONC website. To deal with this issue, DHCS will deem providers to have continuously used CEHRT throughout the MU reporting period for 2018 if the provider attested with 2014 CEHRT in 2017 program year and reports using 2015 CEHRT for any portion of the 2018 program year.

CMS has issued guidance for the 2019 program year that EHRs that are not certified to 2015 standards can be used as long as the same EHR is used without change throughout the MU reporting period and is subsequently certified by the end of the MU reporting period.

DHCS believes there will be many EHRs used without change throughout the MU reporting period that will not certified by the end of the MU reporting period. DHCS does not believe that providers using these EHRs should be penalized and will allow the use of such EHRs for MU as long as the EHRs are certified by the end of the 2019 calendar year.

Some EPs have attested with an EHR, such as SuccessEHS, that has been subsequently found to have reporting inaccuracies. DHCS will allow those EPs to report revised MU data using an auditable alternative reporting methodology to calculate the numerators and denominators if the EHR vendor is not able to provide CEHRT that will report correctly[96].

In the past, DHCS has not verified before payment whether the CQMs reported by professionals are relevant to their scope of practice. However, with the advent of outcome and high-priority CQMs in 2019, DHCS will begin prepayment verification of some EP attestations regarding reporting of high-priority CQMs relevant to the EPs scope of practice. Specifically, DHCS will verify that dentists report either CMS 74 (Primary Caries Prevention Intervention as Offered by Primary Care Providers, including Dentists) or CMS 75 (Children Who Have Dental Decay or Cavities) as high-priority measures and, for optometrists, that CMS 142 (Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care) is reported as a high-priority measure. If these are not reported, DHCS will ask the professional for an explanation. If this explanation is not satisfactory, the professional's MU attestation will be rejected. For other types of professionals who have wider practice scopes, DHCS will accept that the CQMs reported are within their scope of practice.

3.5.3   SLR VALIDATION STOPS

The SLR utilizes a number of "soft stops" which trigger reviews by state staff before an incentive payment is issued or denied. These prompt verifications by state staff and interactions with providers to clear up any issues. A few "hard stops" are used in the SLR, such as lack of a valid and current professional license, which prevent the provider from progressing with the application.

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[96] Centers for Medicare & Medicaid Services, CMS Frequently Asked Questions, Certified Electronic Health Record Technology, FAQ#3063. Accessed August 23, 2019.

TABLE 13: STATE LEVEL REGISTRY VALIDATION ITEMS

VALIDATIONS	AUTOMATED (A), MANUAL (M)	EXCEPTION RESULT
PROVIDER CREATE ACCOUNT	-	-
Validate that the provider's TIN and ID (NPI or CCN) matches PMF.	A	SOFT STOP
If not found on PMF then validate using the NLR record.	A	HARD STOP
Standard check to validate that a "group" status is noted on the PMF for users selecting Group Representative role.	A	N/A – State will be sent exception notice, but user can proceed.
Beginning in 2017, before allowing an EP/EH to proceed, validate that: • Hospitals have received a payment in the prior year • Providers have received a payment in a prior year	A	HARD STOP
STEP 1: ABOUT YOU	-	-
Provider license number is on the PMF and is active.	A	SOFT STOP
PMF Provider Status 4 is noted as deceased.	A	HARD STOP
PMF Provider Status 6 is noted as permanently suspended.	A	HARD STOP
PMF Provider Status 3 is noted as pending a transition.	A	*HOLD
PMF Provider Status 2 is noted as inactive.	A	SOFT STOP
PMF Provider Status 5 is noted as rejected.	A	SOFT STOP
PMF Provider Status 9 is noted as temporarily suspended.	A	SOFT STOP
STEP 2: ELIGIBILITY	-	-

VALIDATIONS	AUTOMATED (A), MANUAL (M)	EXCEPTION RESULT
For EP - Validate that the outcome of Formula 1 or Formula 2 meets eligibility when result is as follows: • **≥ 19.5% for pediatricians** **OR** • **≥ 29.5% for all other provider types**	A = Confirmation that data entered meets minimum eligibility requirements. M = OHIT staff to verify.	Required Field Validation – User forced to fix data entry before proceeding.
For EP – EP had at least one encounter with a Medicaid beneficiary in the 12 months prior to attestation or the previous calendar year.	M = OHIT staff to verify.	N/A
For EH-Validate that the outcome of the eligibility entries meets eligibility when the result is as follows: • **The hospital is a children's hospital** **OR** • **If Medicaid volume > 9.5% AND LOS (Avg. Length of Stay) <=25 days AND the last 4 digits of CCN = 0001 – 0879 or 1300 – 1399**	A = Confirmation that data entered meets minimum eligibility requirements; M = Confirmation that data entered matches Hospital Cost Report.	Required Field Validation- User forced to fix data entry before proceeding.
STEP 3: ATTESTATION OF EHR AIU/MU	-	-
Criteria Method (AIU or MU) - Check to validate that a document is attached. In the case of a modular approach, the provider will be able to attach up to 10 documents per page within the system. Since there is document management functionality in several places in the SLR, the provider could attach more documents in other locations in the application.	A = Confirmation that document is attached; M = Confirmation that document includes required information.	N/A- User cannot proceed without attaching document.

VALIDATIONS	AUTOMATED (A), MANUAL (M)	EXCEPTION RESULT
EHR Certified Technology – CMS EHR Certification ID is listed on ONC as a Certified EHR system. In the case in which a provider presents a modular solution DHCS staff will verify the CMS EHR Certification ID for the specific combination of modules on the ONC website.	A	HARD STOP
EHR Certified Technology – Validate that a document is attached.	A = Confirmation that document is attached; M = Confirmation that document includes required information.	N/A – User cannot proceed without attaching document.
STEP 4: REVIEW, SIGN AND ATTACH ATTESTATION	-	-
Validate that there is a document attached.	A = Confirmation that document is attached; M = Confirmation that document includes required information.	HARD STOP
STEP 5: SEND (YEAR X) SUBMISSION	-	-
Validate the NLR record is on file.	A	HARD STOP
Provider license number is on the PMF and is active.	A	SOFT STOP
PMF Provider Status 4 is noted as deceased.	A	HARD STOP
PMF Provider Status 6 is noted as permanently suspended.	A	HARD STOP
PMF Provider Status 3 is noted as pending a transition.	A	*HOLD
PMF Provider Status 2 is noted as inactive.	A	SOFT STOP
PMF Provider Status 5 is noted as rejected.	A	SOFT STOP
PMF Provider Status 9 is noted as temporarily suspended.	A	SOFT STOP

VALIDATIONS	AUTOMATED (A), MANUAL (M)	EXCEPTION RESULT
Validate that the outcome of the eligibility formulas meets eligibility criteria.	A	SOFT STOP
ADDITIONAL VALIDATIONS	-	-
B-6 interface with other state exclusion. NOTE: From NLR to states; informs states of new, updated and cancelled Medicaid registrations. The NLR will send the states batch feeds of new EPs and Hospitals that signed up for HITECH and selected, or switched to, Medicaid.	A	SOFT STOP (in place until B-6 received from NLR)
D-16 response interface with other state exclusion. NOTE: From state to NLR, with NLR Response; to prevent duplicate EHR incentive payments, to notify NLR of state exclusions, to be notified of any Federal exclusions by NLR.	A	SOFT STOP (in place until D-16 received from NLR)
D-16 response interface with a Federal exclusion. NOTE: From state to NLR, with NLR Response; to prevent duplicate EHR incentive payments, to notify NLR of state exclusions, to be notified of any Federal exclusions by NLR.	A	HARD STOP

NOTE: *HOLD- Will occur only if PMF Provider Status is noted as *3: Pending Transition*. HOLD will occur for 8 days, after which will change to SOFT STOP if *Pending Transition* status has not changed.

DHCS monitors and reviews exceptions as needed to reduce the number of unnecessary appeals. Follow up discussions occur to ascertain whether the user is still working on the issue, requires additional assistance, has received information, or concluded the issue could not be corrected.

Generally, there are two global issues that could precipitate an appeal; eligibility and incentive payment calculation. Although eligibility is generally determined through the automated application verification and validation process, there are components of the eligibility process that can and are addressed by DHCS staff.

The most common eligibility issue is related to Medi-Cal patient volumes. Determination of patient volumes for both professionals and hospitals can be a complex task. DHCS staff are well versed in the requirements of the Final Rule and direction from CMS as it relates to

patient volumes. DHCS staff work with providers to ensure that all avenues are addressed, ensuring that professionals and hospitals are provided every opportunity to attain eligibility to receive an incentive payment in accordance with the Final Rule and CMS regulations.

3.6 PAYMENTS

3.6.1 FOR ELIGIBLE PROFESSIONALS

The SLR designates the appropriate payment amount for the provider based upon the year for which they are receiving payment. Providers receive $21,250 in their first year, and $8,500 in years 2 through 6. The SLR is able to accommodate the two-thirds incentive payment for pediatricians meeting the 19.5-29.4 percent Medi-Cal eligibility threshold. The SLR also ensures that only one payment per provider is issued per year, and does not calculate a payment for a provider that is ineligible due to not meeting the Medicaid encounter volume requirements. The SLR functionality limits the number of payments to EPs to six.

3.6.2 FOR ELIGIBLE HOSPITALS

The system will calculate the hospital incentive payment amount using the formula provided by CMS. As part of the registration and eligibility processes for hospitals, the system gathers all of the information required to complete the calculation. The SLR displays the calculation on a screen so that hospitals will be able to determine exactly how incentive payments are calculated.

Calculation of the Overall EHR Amount is calculated based on the following steps:

- Calculate the average annual growth rate over three years using the most recent Medicare/Medicaid Cost Reports or other auditable data sources for a 12-month period prior to the payment year (base year) and the three years prior to that. If a hospital's average annual rate of growth is negative over the three-year period, it will be applied as such.

    - DHCS will allow hospitals with less than four years of data to apply, as long as a full year of data is available for the base year. When four years of data are available, the growth rate will be recalculated and payments adjusted accordingly.

    - In 2016, with approval from CMS, DHCS changed the timeframe for the base year to end before the end of the payment year rather than to end before the start of the payment year. This policy is not retroactive. See Appendix 20 for more details.

- Calculate the total Medicaid discharges using the Medicaid discharges in the Medicare/Medicaid Cost Reports plus the discharges where Medicaid is the secondary payer. Only discharges between 1,149 and 23,000 per CCN will be allowable discharges.

    - After consultation with CMS, DHCS determined in 2017 that psychiatric and acute rehabilitation discharges are included if the care occurred in beds that would be reimbursed under IPPS for Medicare patients. This policy is retroactive.

- Calculate each of the next four-year's total discharges by multiplying the previous year's discharges times the average computed growth rate.

- Calculate the Aggregate EHR Amount for each year by multiplying (total discharges times $200) plus the $2,000,000 base.

- Apply the appropriate transition factor to each year's Aggregate EHR Amount. (Year One – 100 percent, Year Two – 75 percent, Year Three – 50 percent, Year Four – 25 percent).

- Calculate the total Overall EHR Amount by adding the total of each year with the transition factor applied.

- Apply the Medicaid Share percentage to the Overall EHR Amount. (See Medicaid Share calculation below). This is the hospital's Medicaid Aggregate EHR Incentive amount.

Calculation of the Medicaid Share percentage:

- Total Medicaid Bed Days includes both the total Medicaid Bed Days and total Medicaid HMO Bed Days from the Medicare/Medicaid Cost Report.

    - After consultation with CMS, DHCS determined in 2017 that psychiatric and acute rehabilitation bed days are included in the Medicaid and Medicaid HMO Bed Days if care occurs in beds that would be reimbursed under IPPS for Medicare patients. This policy is retroactive.

    - After consultation with CMS, DHCS determined in 2017 that "Administrative Bed Days" (which occur while waiting for a SNF bed) are included in the Medicaid and Medicaid HMO Bed Days since such bed days are considered acute inpatient care under IPPS for Medicare. This policy is retroactive.

- Calculate the non-charity percentage. Divide the total hospital charges less uncompensated care by the total hospital charges.

- Calculate the non-charity days by multiplying the non-charity percentage times the total hospital days.

- Calculate the Medicaid Share percentage by dividing the Total Medicaid Bed Days by the non-charity days.

DHCS created a Hospital Workbook for EHs that mirrors the calculation in the SLR application and instructs the EH how to gather their information using the Medicare/Medicaid cost report.

FIGURE 17: HOSPITAL WORKBOOK

Medi-Cal EHR Incentive Program Hospital Workbook

Input the required data in the ORANGE BOXES below.

Hospital Name:	Hospital Location (City):	CCN:
		xx-xxxx

STEP 1: MEDICAID VOLUME (Medicaid Discharges/Total Discharges)

90-Day Representative Period:	START DATE:	Choose a representative 90-day period within the **prior federal fiscal year** (October 1st - September 30th) to determine your hospital's eligibility to participate in the program.
	END DATE:	

Hospital Discharges and ER Encounters: From the 90-Day Representative Period	TOTAL	MEDICAID	You may use any auditable data source. Include both fee-for-service and managed care inpatient discharges, and emergency room (ER) encounters. Indigent care may be included by some hospitals (see special instructions in Step 3). Nursery discharges should be included.

Does your hospital have Medicaid discharges or ER encounters from other states that you are including to establish eligibility and payments?		Enter Yes/No

Hospitals (except children's hospitals) must have a Medicaid volume ≥ 10% to be eligible.

Medicaid Volume Percentage:

For STEP 2 and STEP 3 below:
- The CMS Annual Cost Reports (2552-96 or 2552-10) should be used. Other auditable data sources may be used if necessary.
- Non-acute beds should be excluded.
- Nursery and swing bed days should be excluded if the hospital is unable to distinguish between days used to deliver SNF-level care versus inpatient acute-level care.
- ER encounters should not be included in bed days or discharges.

STEP 2: AVERAGE LENGTH OF STAY (Total Inpatient Days/Total Discharges)

Enter the year of your most current cost report or other auditable data source:		This should be the most current 12-month period prior to the payment year (for which the hospital has a cost report or other auditable data).
Total Inpatient Bed Days:		CMS 2552-96: Worksheet S-3, part I, column 6, sum of lines 1,2, 6-10. CMS 2552-10: Worksheet S-3 part I, column 8, sum of lines 1, 2, 8-12.
Total Discharges:		CMS 2552-96: Worksheet S-3, part I, column 15, line 12. CMS 2552-10: Worksheet S-3 part I, column 15, line 14.

Hospitals (except children's hospitals) must have an Average Length of Stay ≤ 25 days to be eligible.

Average Length of Stay   **days**

STEP 3:	ADDITIONAL INFORMATION NEEDED TO CALCULATE HOSPITAL PAYMENTS

Total Discharges for Last Four Years:
This data is used to calculate your hospital's Average Growth Rate.

			0

CMS 2552-96: Worksheet S-3, part I, column 15, line 12.
CMS 2552-10: Worksheet S-3 part I, column 15, line 14.

Total Medicaid Inpatient Bed Days:
Include bed days paid by Medicaid for individuals in fee-for-service or managed care. Do not include bed days for individuals if payment may be made by Medicare or a Medicare Advantage organization.

CMS 2552-96: Worksheet S-3 part I, column 5, sum of lines 1, 2, 6-10.
CMS 2552-10: Worksheet S-3 part I, column 7, sum of lines 1, 2, 8-12.

Special Instructions:
In calculating Total Medicaid Inpatient Bed Days, if managed care bed days have not been reported on the CMS 2552-96 form in Line 2, Column 5, the Medicaid managed care bed days reported on the OSHPD Annual Hospital Financial Report may be used instead. Specifically, the amount in Section 4.1, line 5, column 4, of the Patient Census Days table of the OSHPD report may be used. Please upload a copy of the appropriate OSHPD report page with your application if your hospital will be using this data source.

If column 3 of the CMS 2552-96 form has been used to report contractual services, the amounts in this column may be added to the relevant column 5 (Title XIX) amounts to establish Total Medicaid Inpatient Bed Days. If Medicare Title V funding has been used for any bed days reported in column 3, these must be excluded before adding to column 5.

INDIGENT CARE: Designated public hospitals and other hospitals in Alameda, Contra Costa, Kern, Los Angeles, Orange, San Diego, San Francisco, San Mateo, Santa Clara, and Ventura counties may include indigent care encounters if these are partially supported by Safety Net Care Pool funds under Medi-Cal's 1115 Waiver. Please attach an auditable data source documenting such indigent care, such as the OSHPD Annual Hospital Financial Report Section 4.1, line 5, sum of columns 5 and 6. Designated Public Hospitals use DPH Supplemental Workbook.

Total Hospital Charges:

CMS 2552-96: Worksheet C, part I, column 8, line 101.
CMS 2552-10: Worksheet C part I, column 8, line 200.
LA County-owned Designated Public Hospitals use DPH Supplemental Workbook.

Hospital Charity Care Charges:

CMS 2552-96: Worksheet S-10, line 30.
CMS 2552-10: Worksheet S-10, column 3, line 20.
Note: Uncompensated care cost data may be used only if "bad debt" is subtracted. When using CMS 2552-96, Worksheet S-10, line 30 ensure that bad debt has been subtracted from this total. Consider using the OSHPD annual financial statement to document bad debt (OSHPD Supplemental Patient Revenue Information, Line 420).
If charity care data is not available, please enter "0." Designated Public Hospitals should use DPH Supplemental Workbook.

STEP 4:	HOSPITAL PAYMENT CALCULATION

Go to the Payment Calculations tab to view the calculation of your hospital's incentive payments.

In early 2012, DHCS updated the hospital workbook in response to FAQs issued by CMS, adding explicit instructions to only include paid bed days as Medicaid bed days and to not include bed days that may be paid by Medicare.

For designated public hospitals (DPH), the DHCS P-14 Workbook is used in addition to the Medicare/Medicaid cost report to gather the information required to calculate the hospital payment amount. For this reason, DHCS created the DPH Supplemental Workbook for DPH use in tandem with the Hospital Workbook. Because of changes in the P-14 workbook, DHCS provided three versions of the DPH Supplemental Workbook for Fiscal Years 2009-2010, 2010-2011, and 2011-2012. All DPHs had attested to the program by 2012. The 2011-2012 DPH Supplemental Workbook is provided below.

FIGURE 18: DESIGNATED PUBLIC HOSPITAL SUPPLEMENTAL WORKBOOK

Medi-Cal EHR Incentive Program
Designated Public Hospitals Supplemental Workbook

This workbook serves as a supplement to the Medi-Cal EHR Incentive Program Hospital Eligibility Workbook for the purpose of determining total Medicaid inpatient bed days and hospital charity care charges. To access the Hospital Eligibility Workbook, click below:

Medi-Cal EHR Incentive Program Hospital Workbook

Input the required data in the ORANGE boxes below:

Hospital Name:	Hospital Location (City):	CCN:
		XX-XXXX

NOTE: This workbook is to be used with the P14 FY 11-12 Version. If your hospital is using a different version of the P14, please select the appropriate tab.
Data sources to attach:
1. Paragraph 14 Workbook (FY11-12 Version), Schedule 1 and 1.1. The P14 workbook used should correspond to the same fiscal year as the CMS 2552 cost report used. To determine which cost report should be used, see the "Hospital Fiscal Year" tab in the Hospital Workbook (link above).
2. OSHPD report, page 12 (Los Angeles County-owned public hospitals only; see below)
3. Paragraph 14 Workbook, Schedules 1B and 2.1 (LAC-owned public hospitals only; see below)
4. If necessary, schedule showing removal of subprovider days from Medicaid Inpatient Bed Days derived from P14 workbook

STEP 1: Total Medicaid Inpatient Bed Days

All designated public hospitals use this section to calculate Medicaid inpatient bed days

Include Medi-Cal fee-for-service, Medi-Cal managed care, Health Care Coverage Initiative, Low Income Health Program, and SNCP-covered uninsured days.

Total Medicaid Inpatient Bed Days:

Paragraph 14 Workbook FY11-12 Version, Schedule 1, sum of columns 2a (Medi-Cal FFS days), 3a (Medi-Cal managed care days), 5a (out-of-state Medicaid days), 7a (uninsured days), 6a, 8a, 9a, 9g, 9k, 10a, 10c, and 10e (Low Income Health Program days), and sum of lines 3000-3400 as well as "Other Special Care" lines, which may be numbered 3500 up to 3502; any subprovider lines should not be included.

Subprovider days may not be included.
If subprovider days are included in any workbook line mentioned above, they should be broken out per a separate schedule.

Uninsured days should be reduced by 13.95%.

Finally, the total must be reduced by the number from "Schedule 1.1 Medi-Cal Data", column 1b, Medicare/Medi-Cal crossover days.

Use as input for "Total Medicaid Inpatient Bed Days" on the Medi-Cal EHR Incentive Program Hospital Workbook (Step 3, cell G51)

STEP 2a: Total Hospital Charity Care Charges

All designated public hospitals, except those owned by Los Angeles County, use this section to calculate Hospital Charity Care Charges

Total Uninsured Inpatient Day-Based Charges:		P14 workbook, Schedule 1, column 7a, section "Inpatient Unit Charges" (at bottom), lines 03000-04300.
Total Uninsured IP&OP Ancillary Charges		P14 workbook, Schedule 1, columns 7a and 7c, sum of lines 4400-11600 as well as "Other Special Purpose (Specify)."
Total Uninsured Charges:	0	**Sum of Uninsured Day-Based Charges and Ancillary Charges**
SNCP-Funding-Ineligible Percentage:	13.95%	
Hospital Charity Care Charges:	$0	**Total Uninsured Charges * SNCP-Ineligible Percentage** *Use as input for "Hospital Charity Care Charges" on the Medi-Cal EHR Incentive Program Hospital Workbook (Step 3, cell G63)*

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STEP 2b:	Total Hospital Charity Care Charges (Los Angeles County Only)	
Only designated public hospitals owned by Los Angeles County should use this section to calculate Hospital Charity Care Charges		

Total Hospital and Professional Charges:		For Los Angeles County only: OSHPD report, page 12, line 415, column 23. Please include a copy of the relevant OSHPD report page.
Professional Services Costs:		Schedule 1B, Column 4, line A.
Total Hospital Costs:		CMS 2552-96, worksheet B, part I, column 25, line 95. CMS 2552-10, worksheet B, part I, column 24, line 118.
Professional Services Percentage:		Prof. Svc. Costs / (Total Hosp. Costs + Prof. Svc. Costs)
Total Hospital Charges:		Total Hosp. and Prof. Charges * (1 - Prof. Svc. %) *Use as input for "Total Hospital Charges" (LA County-owned public hospitals only) on the Medi-Cal EHR Incentive Program Hospital Workbook (Step 3, cell G60)*
SNCP-Funding-Ineligible Percentage:	13.95%	
Total Uninsured IP&OP Costs:		P14 workbook, Schedule 2.1, step 3, column 8, "Adjusted Hospital Based Uncompensated Costs (DSH Eligible)"
Charity Care Costs as % of Total Costs:		(SNCP-Ineligible % * Total Uninsured Costs) / Total Hosp. Costs
Total Charity Care Charges:		Total Hosp. Charges * Charity Care Cost % *Use as input for "Hospital Charity Care Charges" (LA County-owned public hospitals only) on the Medi-Cal EHR Incentive Program Hospital Workbook (Step 3, cell G63)*

Data sources from the Medicare/Medicaid hospital cost report and/or the DHCS P-14 Workbook are designated on the worksheet for each required data element. If charity care charges are not available, DHCS will allow the use of data for uncompensated care where bad debt is removed from charity care charges. If neither charity care data nor uncompensated care cost data are available, DHCS will set the charity care ratio to one. Hospitals submitting cost reports after May 1, 2010 use cost report form CMS 2552-10. Any Medicare Cost Report prior to that date would have used form CMS 2552-96.

In accord with the Final Rule, DHCS allows hospitals to count discharges when Medicaid is the primary or secondary payer. Discharges for patients who are dually-eligible for Medicare and Medicaid cannot be counted as Medicaid in calculating the "Medicaid Share." The estimated amounts for total charges and charity care charges used in the payment formula must represent inpatient hospital services only and exclude any professional charges associated with the inpatient stay.

DHCS pays the aggregate hospital incentive payment amount in four annual payments, contingent on the hospital's annual attestations and demonstrations of MU. In the first year, if all conditions for payment are met, 50 percent of the aggregate amount will be paid to the EH. In the second year, if all conditions for payment are met, 30 percent of the aggregate amount will be paid to the EH. In the third year and fourth year, if all conditions for payment are met, 10 percent of the aggregate amount will be paid to the EH for each year. Payments are extended over four years in order to increase the number of EHs incentivized to achieve stages 2-3 of MU. No Medi-Cal EHs may begin receiving payments after 2016, and

payments will not be made after September 30, 2021. Prior to 2015, payments could be made to an EH on a non-consecutive annual basis, but beginning in 2017, in order for a hospital to receive payment it must have received an incentive payment in the prior fiscal year.

Due to Final Rule changes in 2013, DHCS allows hospitals to switch to California from another state where they have received EHR incentive payments. DHCS works with the other state to determine the remaining payments due to the hospital based on the aggregate incentive amount and incentive amounts already paid. The hospital then assumes California's payment cycle, less the money paid from the other state. Prior to addressing this scenario, DHCS consults with CMS. To date, DHCS has not received any such requests.

3.6.3   PAYMENT PROCESSING

DHCS has determined that the most efficient intervals for delivery of incentive payments to recipients is weekly. This utilizes the existing payment processes currently in place for the state and ensures that incentive payments are made within the timeframes required by CMS.

The payment processing begins in the State Level Registry (SLR). The system captures the state's approval of the EP/EH's attestation and flags the record for payment. The system includes sufficient storage capacity in preparation of capturing and tracking transactions between 2011 and 2022.

The current role of DHCS' Fiscal Intermediary (FI), Conduent, is to coordinate the transfer of payment information from the SLR to the state's payment system based upon the MMIS Interface Standards. The MMIS system is able to process provider payments via Electronic Funds Transfer (EFT), and provide the annual 1099 required by the IRS for reporting income.

The system functionality includes the following:

- Maintains a complete repository of incentive payment-related information.
- Follows correct payment methodology based on CMS payment rules.
- Accurately exchanges payment information with the MMIS payment system.
- Avoids inappropriate payments.
- Excludes payments to providers with state or federal exclusions, sanctions, and/or other state incentive payments pending or paid.
- Pays assigned payees designated by the provider in the NLR.

The SLR system calculates incentive payment amounts, and executes a payment validation process with the National Level Repository (NLR) via the D-16 interface. The FI uses data from the SLR to send a file to the MMIS for payment. Currently, the exchange between the SLR and the MMIS is a manual process. DHCS and Conduent are in the process of creating an automated payment process to increase payment efficiency and reduce errors. It is anticipated this process will be implemented in September 2018. Under the automated process, the SLR will send payment information to MMIS without the need for manual intervention. The MMIS will issue incentive payments and notifications to eligible professionals through normal payment channels and send a confirmation to the SLR system. As it does today, the SLR system will send a D-18 file with the payment details to the NLR to update the NLR records for those eligible parties receiving payments.

As required by CMS, incentive payments are issued without any deduction to pay for its own program administration or to fund other state priorities. However, when there are public debts owed by the provider, the state may recoup the debt from the provider by offsetting the debt with the incentive payment. Similar to the Medicare program, if the provider reassigns the payment, any debt owed by the re-assignee would not be recouped from the payments made on behalf of the provider.

FIGURE 19: PAYMENT CYCLE
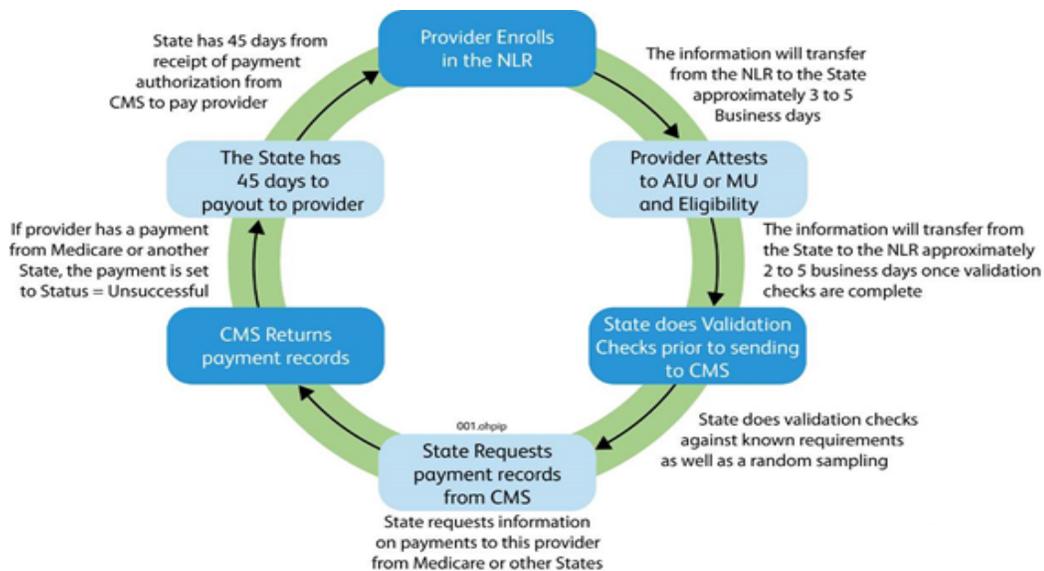
The SLR system uses the payment methodology in Figures 19 and 20 for incentive payments to all eligible entities, including EPs and EHs. Conduent has worked directly with CMS to define the details for correct computation of incentive payments under the EHR Incentive Program. The Medi-Cal payment methodologies are similar to those prescribed for Medicare incentive payments. Using validation checks with the NLR, the SLR prevents issuing payments when actual or pending Medicare EHR incentive program payments and

Medicaid EHR incentive program payments from other states are identified. However, this does not apply to dually-eligible hospitals that are allowed to participate in both programs.

FIGURE 20: NLR PAYMENT APPROVAL PROCESS
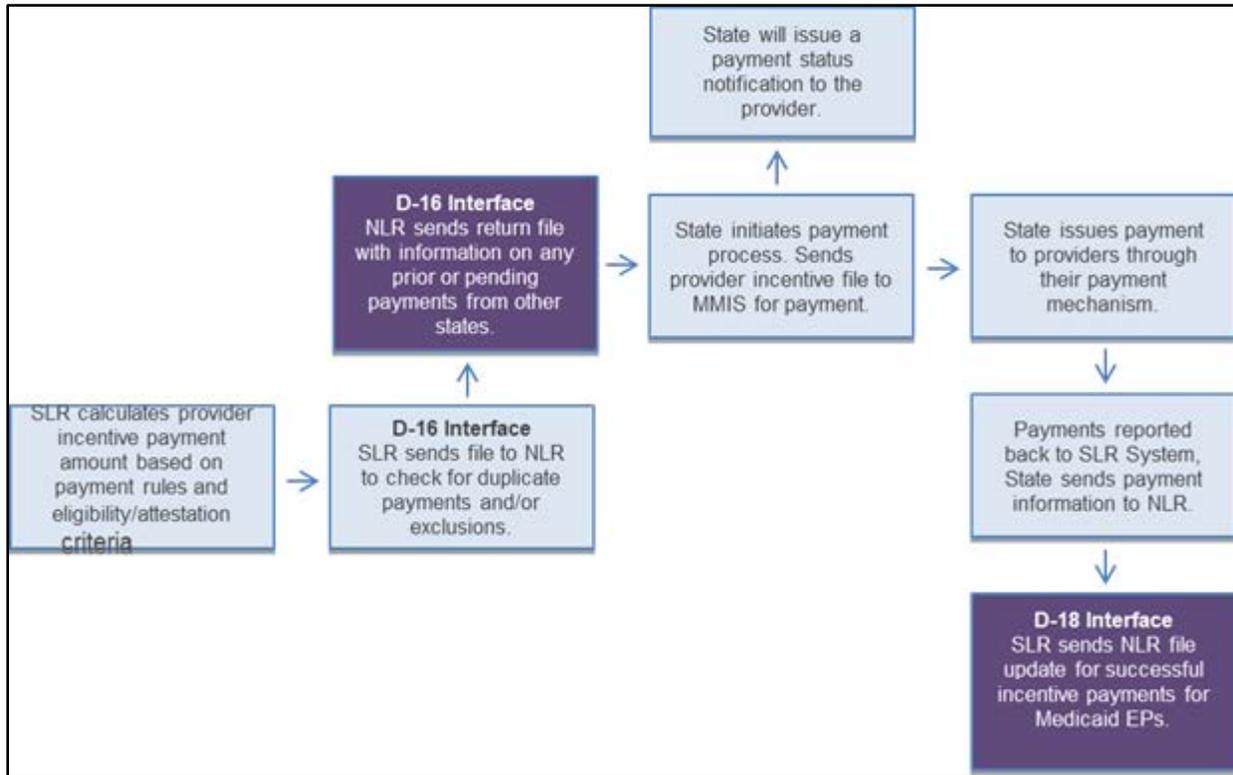
When the payment is calculated, the SLR requests information via the D-16 Interface on duplicate or pending payments as well as any updated exclusions from the NLR. A payment from another state or from Medicare disqualifies the provider from receiving a Medi-Cal incentive payment for that year. The payment file is sent to the MMIS for payment. When the MMIS reports the payment back to the SLR, the payment record is forwarded to the NLR. The Payment Process Data Flow chart (Figure 21) illustrates the standard flow for the generation of provider incentive payments.

FIGURE 21: PAYMENT PROCESS DATA FLOW
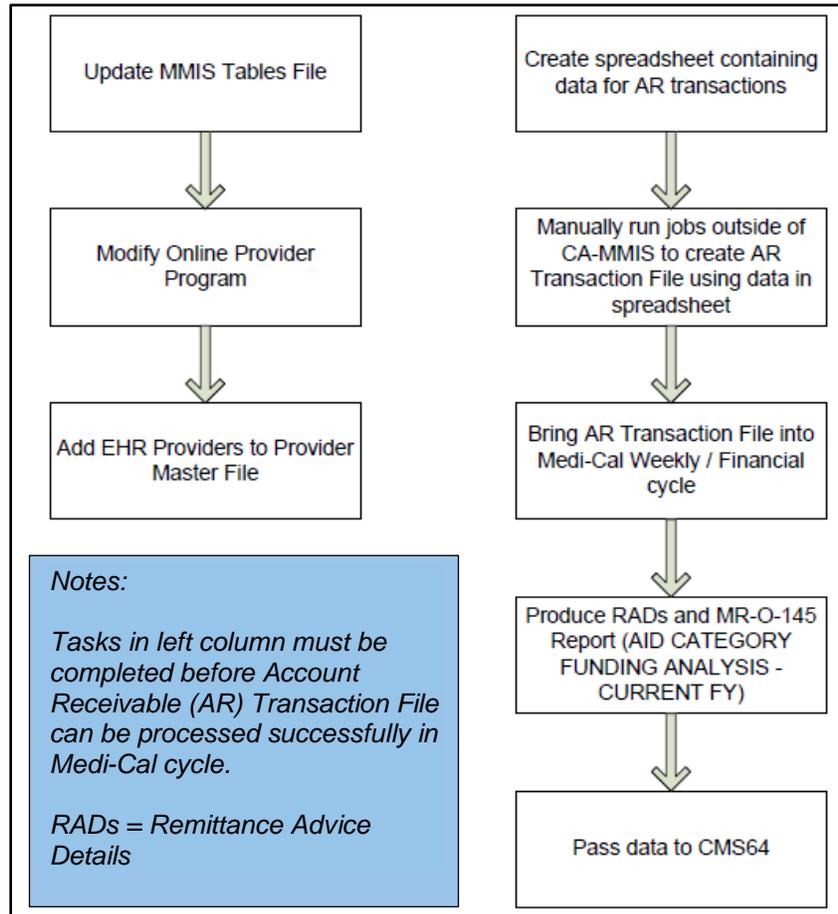
CMS allows each state to determine methods for recovery of inappropriate payments. In the instance that an overpayment is self-identified by the provider or identified through an audit, the overpayment may be fully or partially satisfied through offset from future incentive payments. The state will utilize its existing Medi-Cal recovery methodologies to recover inappropriate incentive payments that cannot be offset against future incentive payments. If underpayments are identified, the provider will be appropriately reimbursed.

EPs receiving incentive payments under the incentive program may assign their incentive payments to certain other entities. For example, an EP is allowed to specify that his or her group practice received the incentive payments. The EP designates the TIN of the practice (payee) to which he or she wishes to assign his or her incentive payments at the NLR, and that information is received and stored in the SLR via the B-6 transaction. The state validates that the NPI/TIN reassignment combination is allowed by examination of the Provider Master File. After validating the NPI/TIN for reassignment, payments for that EP are issued to the payee TIN.

The state's payment process requires that a warrant (check) number is included for tracking and audit purposes. As the source of the warrant information, the State Controller's Office (SCO) issues the final payments. The system uses the current Medi-Cal check write system.

Payment processing includes the following steps:

1) Upon acceptance of the verification and validation processes within the SLR, and notification from NLR that payment may be released, the FI will receive a release for payment notification from the SLR to pay the appropriate provider incentive payments.

   a) The payment is made with the warrant number from SCO and a uniquely identifiable transaction number.
   b) The transaction number will have an EHR Incentive Program descriptive message as defined in the Medi-Cal Provider Manual.

2) System reporting is updated to identify the payments separately within existing service categories based on the transaction number identified above.
3) The CMS64 database calculates FFP for EHR Incentive Payments and retains the information for reporting purposes.

3.7 APPEALS

Eligible professionals and hospitals have the right to appeal DHCS' decision on participation eligibility, attestations, and incentive payment amounts. The appeals for pre-payment denials follows the process described in W & I Code section 14043.65. This code designates a written appeal process to the director's designee. No formal administrative hearing is required. The provider has 60 days from the date of the department's action to file their written appeal with all of the supporting materials. The director/designee has 90 days from receipt of the appeal to issue a decision. The decision may uphold, continue or reverse the department's action in whole or in part. Any further appeal shall be via a writ to the Superior Court under §1085 of the Code of Civil Procedure.

For audit appeals, DHCS has an established administrative hearing process referenced in the WIC, Section 14171, and California Code of Regulations, Title 22, Section 51016. Audit appeals are referred to the Office of Administrative Hearings and Appeals (OAHA), an independent office within DHCS, which handles Medi-Cal provider appeals for the Department. The EH or EP has 45 days from the date the EHR audit report is issued to file for an appeal with OAHA. OAHA affords providers an administrative hearing. If the provider wishes to appeal further, the appeal must be filed through Superior Court.

3.8 RECOVERY/RECOUPMENT

EHs found upon audit to have received an incentive payment in error for a payment year, will have the overpayment recovered by offsets against pending incentive payments or, in the case that the EH does not have pending payments to cover the overpayment, through recoupment. EP overpayments will be recovered by recoupment only.

In the case that an audit determines that the EP or EH had engaged in fraud through deliberately attesting to false information, the EP or EH will permanently lose the payment for that participation year. Examples would be as follows:

- EPs in their first year of the program will not be able to receive a first year payment of $21,250 in a subsequent program year.
- EHs in their first year of the program will not be able to receive their calculated first year payment in a subsequent program year.
- EPs or EHs in the second year of participation, will lose the ability to receive their second year payment during the subsequent year of participation.

Such EPs and EHs will have their eligibility for the program reduced by one program year (from 4 years to 3 years for EHs and from 6 years to 5 years for EPs).

In the case that an audit determines that the EP or EH had received a payment in error but had not engaged in fraud, the EP or EH will not permanently lose the ability to receive payment for the participation year and will not have the total years of eligibility reduced. Such EPs in the example above may receive a first year payment in a subsequent program year and such EHs will be able to receive their calculated first or second year payments in subsequent program years.

EPs or EHs receiving only one payment before 2017 that are found on audit to be ineligible for that year (whether due to fraud or not) will lose the ability to receive payments in 2017 and subsequent years. EHs found on audit to be ineligible for any program year after 2015 will lose the ability to receive payments in any subsequent program year. If such payments have already been made, they will be recovered.

3.9 REPORTING

The SLR provides DHCS with an actionable reporting package to effectively manage the Medi-Cal EHR Incentive Program. Key SLR reporting features include:

- Active eligible professional attestation applications currently being completed.

- Active eligible professional attestation applications currently being adjudicated by CMS.

- Active eligible professional attestation applications currently awaiting payment, include the dollar value of the payments.

- Inactive eligible professional attestation applications currently pending.

- Completed eligible professional attestation applications.

Additional reporting functionality scheduled to be deployed in June 2018 has been partially delayed due to the transition of SLR support from Conduent to IBM and establishment of NLR interfaces by the new SLR contractor. This includes:

- Ad hoc reporting functionality. While the SLR contractor has developed capabilities to generate ad hoc reports, finalization of ad hoc reporting software is still in process.
- Audit reporting functionality. System modifications are in process, as a remaining component is the development of a queue to release audit files to CMS. This will be completed with the implementation of Program Year 2019 Stage 3 changes to the SLR.

3.10 ASSUMPTIONS

In providing a strategic and tactical plan for successfully implementing the Medi-Cal EHR Incentive Program, DHCS identifies that the role of CMS is critical to the success of the state's plan and requires the ongoing and close interaction of CMS with ONC and the state. The state is relying on CMS to provide timely guidance to state issues and concerns.

- **SMHP and I-APD Approvals:** CMS continues to review and approve the SMHP and I-APD updates, in a timely manner.

- **Status/Availability of Certified EHR Technology:** Certified EHR applications continue to be approved and certified in a timely manner so that providers can meet the requirements for Stage 3.

- **HIE Funding:** CMS funding for HIE development will be available and sufficient when DHCS submits its SMD letter 16-003 requests.

- **State Level Registry**: Continued availability and support of interfaces and file transfers between the SLR and NLR.

- **Operational Funding**: Health care reform efforts in Congress will not adversely impact California's budget and continued ability to support the 10 percent state match.

- **Program Termination and Closeout**: DHCS understands that HITECH funding for CMS approved initiatives, including HIE efforts, ends on September 30, 2021 (although some initiatives may continue under MMIS). In

addition, incentive payments must be made the end of the 2021 calendar year. DHCS will continue to distribute incentive payments through December 31, 2021, except in cases of audits and appeals. DHCS intends to accept attestations for program year 2021 until June 30, 2021. In accordance with regulations that CMS issued in December 2018, DHCS will continue administrative functions until September 30, 2022 and auditing functions until September 30, 2023[97].

4   CALIFORNIA'S AUDIT STRATEGIES

4.1   INTRODUCTION

For DHCS, audits are conducted by the Audits and Investigations Division (A&I). The overall goal of A&I is to improve the efficiency, economy, and the effectiveness of DHCS while ensuring the financial and programmatic integrity of its programs. As part of its mission, A&I promotes sound management of public funds, performs specific audits of DHCS operations, performs medical and financial audits of Medi-Cal and public health providers, conducts investigations of suspected violations of Medi-Cal laws and regulations, identifies public funds spent inefficiently or illegally for recovery, and has the lead responsibility for DHCS' Medi-Cal anti-fraud program.

The Deputy Director of A&I reports to the Chief Deputy Director and has direct access to the Director of DHCS. This enables A&I to operate independently with no organizational impairments in order to fulfill its oversight and fiduciary responsibilities with regard to DHCS programs and operations. A&I is comprised of four branches: the Medical Review Branch (MRB), Financial Audits Branch (FAB), Investigations Branch (IB), and the Internal Audits Office. The two branches with primary responsibilities for auditing the EHR incentive program are MRB and FAB. MRB audits the non-institutional providers (e.g. laboratories, pharmacists, durable medical equipment providers, and various individual providers and

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[97] CMS, Centers for Medicare & Medicaid Services, 42 CFR Parts 412, 413, 424, 495, Medicare Program; Hospital Inpatient Prospective Payment Systems for Acute Care Hospitals and the Long- Term Care Hospital Prospective Payment System and Policy Changes and Fiscal Year 2019 Rates; Quality Reporting Requirements for Specific Providers; Medicare and Medicaid Electronic Health Record (EHR) Incentive Programs (Promoting Interoperability Programs) Requirements for Eligible Hospitals, Critical Access Hospitals, and Eligible Professionals; Medicare Cost Reporting Requirements; and Physician Certification and Recertification of Claims, Federal Register/Vol. 83, No. 160/Friday, August 17, 2018/Rules and Regulations. Accessed September 12, 2019

practitioners), while FAB audits institutional providers (e.g. acute care hospitals, nursing home facilities, FQHCs, and RHCs). A&I conducts its audit work in accordance with Generally Accepted Governmental Auditing Standards (GAGAS). In addition to full access and authority over DHCS program operational data, A&I also utilizes Medi-Cal claims data, the Provider Master File (PMF), and other relevant data and information needed to carry out its oversight activities of Medi-Cal providers. A&I oversight and audit activities provide assurance that payments made to Medi-Cal providers are valid, reasonable, and in accordance with federal and state laws, regulations, and program intent.

FAB audits EHs and EPs who work in FQHCs, herein referred to as EP/Clinics. MRB audits EPs who have individual practices and/or work in a group. A&I has assigned EHR audit activities to the same audit branches that normally audit the specific provider types, with an intent to integrate EHR audits with other existing audit workload. This arrangement also leverages the auditors' familiarity with the providers' operations and programs. The audit activities for MRB and FAB are further described in Section 4.2 and the following sections.

The IB is primarily involved in EP and EH oversight, monitors the Medi-Cal Fraud Hotline and facilitates referrals to the California State Department of Justice (DOJ), Bureau of Medi-Cal Fraud and Elder Abuse (BMFEA). IB is also involved with various federal and state Program Integrity and Fraud Task Force activities to coordinate A&I's investigative and oversight activities with the Office of Inspector General, U.S. Attorney's Office, and other law enforcement agencies.

MRB and FAB will refer EHR incentive program providers to IB, if they suspect there has been misuse, abuse, or fraudulent activity or a multi-disciplined effort is needed to conduct unannounced reviews of high risk providers.

In an effort to ensure there is appropriate administration and oversight of the state's EHR incentive program, A&I's Internal Audits Branch periodically conducts an internal audit of the incentive program. The internal auditors examine all aspects of the program in detail, including but not limited to: the SLR, attestation process, department pre-payment review of applications, eligibility support documentation, payment approvals, payment processing, payment reconciliation, payment adjustments and recoupments, and system security/integrity.

In 2014, DHCS submitted an audit strategy that detailed the AIU audit plan. The strategy included a description of the departments risk assessment methodology, risk criteria and risk scores for EHs, EPs in individual practice, groups, and FQHCs/RHCs. The strategy also included copies of the audit programs and audit correspondence templates. CMS approved this audit strategy on May 5, 2014.

DHCS received CMS approval of its MU audit strategy on January 16, 2018. In accordance with the updated audit strategy, DHCS will conduct MU audits of EPs as well as Medi-Cal only EHs. For dually eligible EHs, DHCS will rely on the results of the Medicare MU audits for Program Years 2011-2014. For Program Years 2015 and later, DHCS will conduct MU audits for a sub-sample of EHs. DHCS will continue to audit eligibility requirements for EPs and EHs.

4.2   A&I AUDIT LANDSCAPE AND PROCESS

A&I has numerous field offices located throughout the state which are responsible for conducting audits and reviews of institutional and non-institutional providers within a given region or territory. The MRB conducts provider audits out of six field office sections located throughout the state. MRB is staffed by multi-disciplined auditors (e.g. health program auditors, research analysts and medical staff) who also focus on anti-fraud initiatives, research and data mining, which has become an important component of the antifraud strategies by the branch. FAB has thirteen audit sections located throughout the state. These sections perform desk or field audits of Medi-Cal institutional providers which include; acute inpatient hospitals, children's hospitals, critical access and rural hospitals, designated public hospitals), long-term care facilities, FQHCs, rural health clinics (RHCs), Drug Medi-Cal providers, mental health providers, ground emergency transportation providers, Local Educational Agencies (LEA), and Targeted Case Management providers. To minimize audit burdens on the providers and for purposes of efficiency, FAB has attempted to integrate EHR Incentive Program audits of EH's with other Medi-Cal hospital desk or field audits.

As DHCS has a large universe of eligible professionals participating in the Medi-Cal EHR Incentive Program, A&I has devised a two-tier audit approach to EHR Program audits, which include pre-payment audits and post-payment audits. In each of the tier levels, desk or field audits will be utilized depending on the assessed audit risk as described in <u>Section 4.2.1 Pre-Payment Audits</u> and in <u>Section 4.2.2 Post-Payment Audits</u>.

To supplement the historical profiles when developing risk profiles, A&I has access to the SLR, which contains relevant provider information submitted during the application process. The SLR also contains "hard stops" and "soft stops" which are used in risk evaluation. Comparing the severity of the registration stops with historical data allows A&I to develop a risk profile.

A&I audit procedures are designed to ensure that the provider has met the financial and programmatic requirements of the EHR Incentive Program. A&I has developed a risk assessment process that analyzed various risk factors and assigns risk ranking scores. The assigned risk ranking score determines the provider risk level and the number of discharges

to test. The risk assessment process is detailed in A&I's Audit Strategy. Risk scores also take into consideration, information that may be provided in referrals from OHIT.

To ensure the consistency of audits, A&I conducts training for A&I staff in accordance with audit procedures approved in the Audit Strategy. A&I is committed to auditing 100 percent of year one EH applications, ensuring the accuracy of the calculated incentive payments.

4.2.1 PRE-PAYMENT AUDITS

Pre-payment audits are initiated through referrals from OHIT. The purpose of the referral is to address areas of concern identified by an analyst during prepayment review that warrants further examination by an auditor. Concerns may include, but are not limited to, the validity of information uploaded to the SLR by providers or their representatives, "soft or hard stops" generated by the SLR, known or suspected histories of fraud, waste or abuse by the provider.

Referrals contain a comprehensive description of OHITs concerns including supporting documentation or other relevant information.   Once received by A&I, audit program administrators review the referral, research applicable databases, and further develop the audit case. If warranted, field or desk audits are conducted by audit staff. Once the review or audit is completed, results are shared with OHIT, whom reviews the findings and recommendations and takes appropriate action on the application. A&I and OHIT databases are also updated with audit findings.

4.2.2 POST-PAYMENT AUDITS

A&I is responsible for conducting AIU and MU post-payment audits of EPs and EHs consistent with the approved Audit Strategy. Post-payment audits are conducted through field audit reviews (FARs) and desk audit reviews (DARs) of Medi-Cal providers to verify compliance with program requirements and identify potential fraud, waste or abuse.

MRB has developed a risk assessment for all EPs (excluding those in FQHCs, RHCs, IHCs) who received payments for AIU and MU. The risk assessment determines audit selection by risk category. MRB conducts field or desk audits depending on the eligible professionals' overall risk score.

MRB's audit program includes the verification of ownership and controlling interest as a standard audit procedure. The intent of this procedure is to ensure that any individual receiving payment, or entity with an ownership or controlling interest in the provider, does not appear on state or federal exclusion lists.

MRB staff use the CMS approved calculation methods for EPs as stated in 42 CFR 495.306. Validation of EP SLR attestations will be conducted by audit staff to confirm the Medi-Cal percentage, utilizing claim data, provider data, and other applicable and reliable audit sources for patient encounters and panel patients. By using Medi-Cal claims and Managed Care encounter data, audit staff are able to verify the EP's encounter and patient panel volumes.

MRB has audited a statistically relevant sample of EPs to ensure compliance with AIU and eligibility requirements. As of October 2017, of the 425 AIU audits completed, 13 audits resulted in negative findings. In many cases, it was determined that EPs met the 30 percent Medicaid patient volume requirement, although patient volumes differed from those that were reported at the time of attestation. Most EPs were still able to satisfy the volume requirements using a different 90-day reporting period, which fell within the acceptable timeframe based on the program year for which they had attested.

The approved Audit Strategy also addresses EPs who work in FQHCs and details the risk assessment process employed to identify the higher risk EP/Clinics that will be audited. Clinics are under the prospective payment system (PPS) and are not audited annually. FAB is refining its audit plans for EPs at FQHCs/RHCs and intends to conduct AIU/MU audits of EPs in a selected sample of clinics.

FAB's post payment audit scope for EHs in payment year one includes, but is not limited to:

- Review EH records to validate patient volumes, inpatient stays, and discharges and compare to EHR calculated payment for accuracy.

- Reviewing the attestation and supporting documentation (contracts, leases, invoices, receipts, hardware, and software certifications/serial numbers).

- Review the OHIT EH workbook[98] as well as verification that incentive fund calculations and payments are correct. This includes comparing disbursement ratios by fiscal year and actual disbursements through the SLR payment database.

Once the audit is completed, FAB notifies OHIT and the EH of the findings. The EH is given a two-week timeframe to provide additional information and documentation to resolve the findings. If the provider submits additional information or documentation, FAB reviews the additional information/documentation and determines whether the findings are adequately addressed. Where findings are insufficiently addressed, FAB issues an audit report to the

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[98] Department of Health Care Services, Hospital Workbook (Updated 01/10/2017). Accessed May 21, 2018.

provider, identifying any overpayments. OHIT also receives a copy and determines whether overpayments will require immediate recoupment, or can be offset against future incentive payments. Recoupment may consist of off-setting against future fee-for-service payments or voluntary/involuntary collection action. In addition, FAB will enter the results in the CMS audit reporting tool and/or through the State Administrative Module (SAM).

FIGURE 22: AUDIT PROCESS
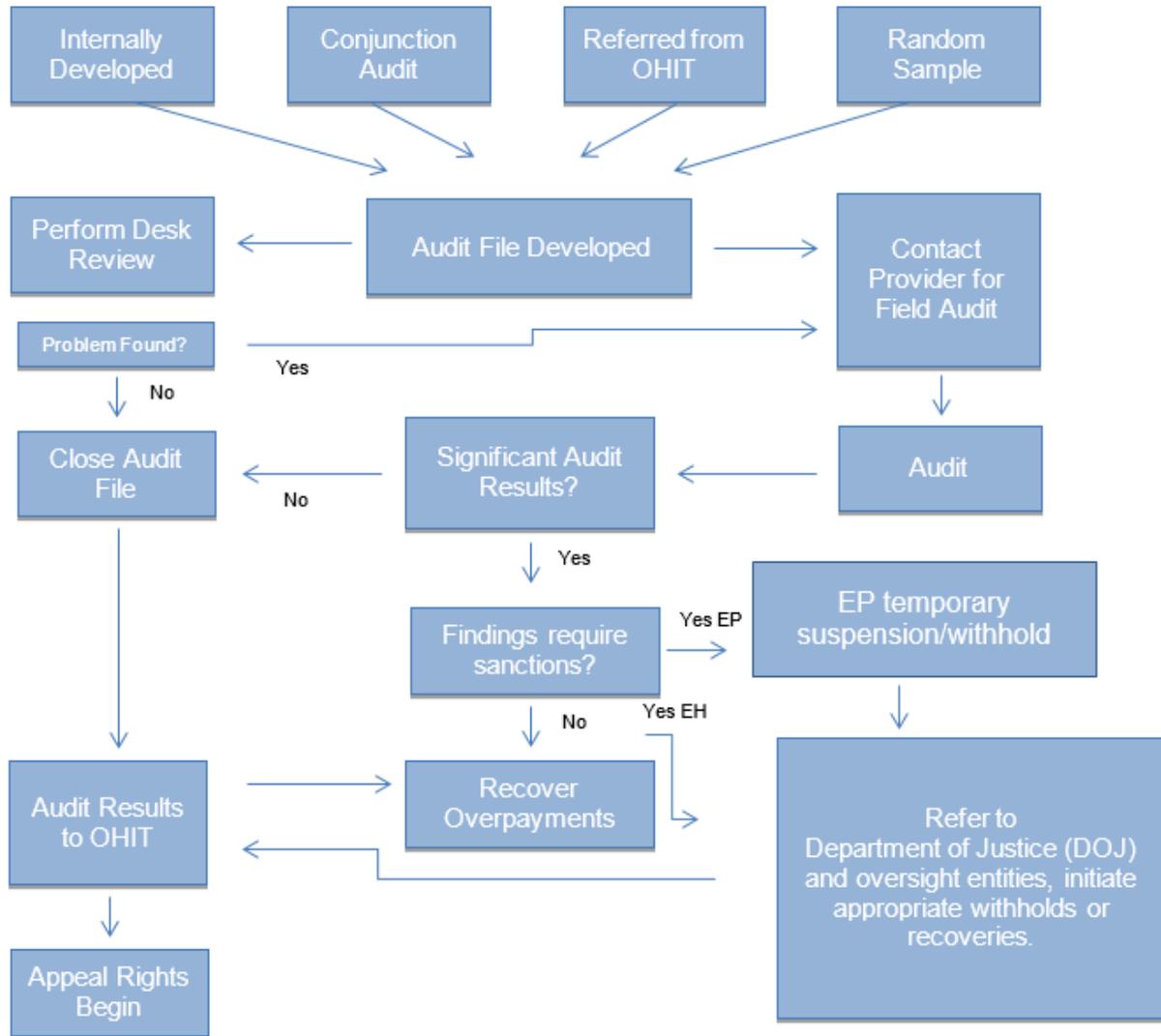
AUDIT DATA RESOURCES

A&I uses a number of data resources in its work auditing the Medi-Cal EHR Incentive Program and investigating providers for fraud, waste, and abuse. These are described in the table and narrative below.

TABLE 14: AUDIT DATA RESOURCES

Data Resource	Resource Function	Resource Benefit
State Level Registry (SLR)	Provider Registration	Review provider statements and submissions, and compare to other data sources and audit findings.
Surveillance and Utilization Review Subsystems (SURS)	Extensive report system of claim data for all Medi-Cal providers and beneficiaries.	Claim detail reports will be run on EHs and EPs to help verify Medi-Cal eligibility percentages and participation.
Provider Enrollment Tracking System (PETS)	Reviewing provider CA Medi-Cal enrollment applications.	Compare SLR registration information for EHs to their PETS file to verify accuracy of information provided on the SLR (cross-referenced with MRB for clinic ownership status).
Provider Master File (PMF)	Master file on all Medi-Cal providers from information submitted by the provider to the Provider Enrollment Division.	Will be used to compare locations, businesses, practices, owners, tax identification numbers, NPI numbers, provider names, payment and location addresses, review Medi-Cal status, Medi-Cal payment histories, etc.
CA Dept. of Consumer Affairs	Licensure of medical professionals.	Verify licensure status and professional licensure sanctions.

Data Resource	Resource Function	Resource Benefit
American Board of Medical Specialties website	Tracking of physician certification of 24 medical specialties.	To assist in the verification of an eligible professional's designation as a pediatrician.
Gatekeeper List	Data list of providers, businesses, locations, individuals, etc. in which previous significant adverse audit findings were found.	Compare SLR data to Gatekeeper list to verify providers, locations, assigned payees, etc. to see if provider may be listed on the Gatekeeper in which MRB will exercise increased audit awareness.
Case Tracking System	Tracks audit cases and their results, amounts, sanctions, findings, etc.	Review the Case Tracking System for previous audit findings on providers.
Financial Audits Tracking System (FATS)	Maintains the historical record of a provider's payment activity, Auditor assignments, and recoveries.	Review FATS for historical payment background.
A&I Documentum System	Maintains complete audit files for Hospital audits conducted for fiscal years ending 2008 years and filed cost reports.	History of previous audit findings for each EH.
TeamMate	Electronic audit work paper system implemented during fiscal year 2014-15. Replaces hard copy audit working papers, also compiles provider documentation obtained during the audit.	Full history of all previous audit findings for each EH.

Data Resource	Resource Function	Resource Benefit
Certified HIT Product List (CHPL)	Official database of certified EHR programs.	Database of the criteria measures of EHR programs selected for certification measure. MU module audit procedures to be developed in future years.
Office of Statewide Health Planning-- Annual Utilization Report	All licensed clinics in California submit an Annual Utilization Report.	Used to obtain encounters by payer source.
Management Information System/Decision Support System (MIS/DSS)	Database of eligibility, provider, and claims information for Medi-Cal.	Review provider statements and submissions, and compare to other data sources and audit findings.

STATE LEVEL REGISTRY (SLR)

A&I has access to the SLR, which is maintained by Conduent. The SLR is the primary access point for source data submitted by providers during the application process. EHR lead auditors and managers will utilize the SLR to access EH workbooks, applications, attestations, and supporting documentation uploaded by EHs and EPs. The SLR provides information needed for preliminary audit work scoping prior to starting the desk or field audit.

SURVEILLANCE AND UTILIZATION REVIEW SUBSYSTEMS (SURS)

The SURS system is a mainframe-based reporting system that captures all elements of submitted claims by Medi-Cal providers whether paid or not paid. The SURS system is used extensively by auditors when verifying EHR Medi-Cal requirements, such as the 30 percent-20 percent EP eligibility, 30 percent Needy Individuals patient volume when practicing more than 50 percent of encounters over six months in the prior calendar year at FQHC/RHC's, and the 90 percent hospital-based measures. MRB EHR Program Administrators run frequency distribution reports as well as claim detail reports during the case development scoping process.

PROVIDER ENROLLMENT TRACKING SYSTEM (PETS)

The PETS system is utilized frequently by MRB to compare data attested by the provider in the SLR and NLR systems to application data the provider attested to in order to participate in California's Medicaid/Medi-Cal program. The PETS system is used extensively for ownership and control disclosures, practice locations, provider's affiliations with sub-

contractors, medical specialties, etc. Review of the PETS system is a standard audit case development tool used for both pre-payment audits and post-payment audits. When discrepancies are found between the provider's attestations in the SLR/NLR and their CA Medi-Cal enrollment data, the audit risk increases.

PROVIDER MASTER FILE (PMF)

Maintained by the Provider Enrollment Division (PED), the PMF stores all eligible provider information as well as the payments received by each provider for the Medi-Cal program. Address information, including pay-to address, tax identification numbers, social security numbers, active statuses, declared profession type, payment history, etc. is stored in the PMF. Data can be used by A&I auditors to identify address discrepancies, activity status, and for payment tracking.

GATEKEEPER LIST

The Gatekeeper list was developed by MRB to track individuals and sites (addresses, regional areas, etc.) where significant Medi-Cal fraud, waste, or abuse has occurred. The Gatekeeper list is checked to determine if any of the EPs, locations, entities, owners, affiliated individuals, etc. are listed.

CASE TRACKING SYSTEM (TEAMMATE)

During fiscal year 2014-15, A&I transitioned to an electronic work paper software known as TeamMate. TeamMate increases the level of security necessary to access audit working papers, which contain sensitive and personal information, and reduces paper and storage costs. The tracking system assigns a specific case number for each audit and records the entire history of the case from beginning to end. Once a case is closed, the tracking system will return all data. Each audit file in the tracking system contains many elements that include, but are not limited to, audit periods, monetary amount subject to review, monetary overpayments, and dates of all actions relating to the audit, case notes, and the auditors/staff and A&I office(s) assigned to the review/audit. A&I EHR Program Administrators and auditors have access to the tracking system and are able to search the system by provider number and retrieve any prior audit information and results available for a particular provider. Audit and overpayment information for each EP/EH is available in A&I's case tracking program.

FINANCIAL AUDITS TRACKING SYSTEM (FATS)

FATS is a database developed by FAB to track the history of all audit types and capture relevant financial data for extraction and evaluation. FAB field audit sections can access the FATS data base.

A&I DOCUMENTUM 2 SYSTEM (ELECTRONIC FILE ROOM)

During fiscal year 2012-13, A&I transitioned from hard copy file to an electronic file room. ARAS is the custodian of the audit records maintained by the Documentum 2 System (D2). D2 is an enhanced PDF system with an optical reader that is capable of searching and querying documents by fiscal year, name, or word search. D2 contains the audit working papers and audit reports and records going back to 2008. During the risk assessment process, EHR audit staff will refer to the files. EHR audit working papers and audit reports are scanned into the D2 system.

CERTIFIED HIT PRODUCT LIST (CHPL)

The ONC Certified Health IT Product List (CHPL) is the comprehensive listing of health IT products that have been tested and certified under the Health IT Certification Program administered by the Office of the National Coordinator for Health IT (ONC). The CHPL is a starting point in researching eligible EHR systems available, and may be used to develop MU attestation audit procedures in conjunction with CMS updates of Level 1-3 criteria.

OSHPD ANNUAL UTILIZATION REPORT

The OSHPD Annual Utilization Reports is used for reference in planning in EH and FQHC/RHC audits. The reports contain encounters by payer source and procedure. FQHCs/RHCs file an Annual Utilization Report and the reports will supplement the claims data from the SURS system for patient volume verification

MIS/DSS

The MIS/DSS is a subsystem of the California Medicaid Management Information System (CA-MMIS) and serves as the California Department of Health Care Services (DHCS) Medi-Cal Data Warehouse. As a current and comprehensive database of eligibility, provider, and claims information for the Medi-Cal Program, the MIS/DSS is the largest Medicaid data warehouse in the nation. It is Teradata-based, a leading-edge, hardware and software technology platform that enables the MIS/DSS to store great volumes of data and allow large numbers of users to simultaneously access the data without any deterioration in system performance. As an integrated repository of data that offers the capability for robust queries and analyses, MIS/DSS will be used in a fashion similar to SURS.

4.3 AUDIT APPEALS

EPs and EHs are allowed appeal rights through an administrative hearing process under W&I Code section 14171 (see Section 3.7). As of September 30, 2017, FAB issued audit reports for 60 EHs and DHCS received 30 requests for informal or formal appeal hearings. In these audits, the issues cited as contributing to most overpayments are the improper inclusion of unpaid Medi-Cal bed days, the improper inclusion of psychiatric bed

days, and the improper inclusion of administrative bed days in the calculation of EH payments. DHCS has consulted with CMS and has determined that administrative bed days can be included in EH payment calculations, as well as psychiatric and rehabilitation bed days if the beds are paid under CMS's IPPS payment system. In response to this, DHCS is recalculating its auditing findings in these areas. In the case of the first appeal, the administrative law judge decided that it was proper for DHCS auditors to exclude unpaid Medicaid bed days. Two other hearings are pending a decision at this time.

In 2016, the U.S. Department of Health and Human Services Office of the Inspector General (OIG) audited 64 eligible hospitals in California, finding approximately $24 million in overpayments. Payments made to these hospitals represented 53 percent of total incentive payments from October 1, 2011 through December 31, 2014. Based on OHITs response to the audit findings, FAB has audited these same hospitals utilizing adjudicated claims data vs. hospital generated schedules. Results have varied in most instances, with some EHs having greater overpayments and, in some instances, underpayments. The OIG determined that DHCS made incorrect payments to 61 of these eligible hospitals, including over and underpayments of $22,043,234. These findings were similar to findings for other states audited by the OIG. Consistent with DHCS' response to the OIG audit recommendations and prior discussions with CMS, DHCS will use its own audit findings for the payment adjustments for these hospitals.

In written comments to the OIG report, DHCS agreed that incorrect incentive payments may have been made, but did not concur with the OIGs reliance on hospital generated schedules and internal financial records. Historical experience suggests actual payments and adjudicated claims data from claims payment reports yield more accurate findings, which can be supported in an appeal. DHCS committed to conducting audits of 100 percent of the hospitals participating in the incentive program, prioritizing and completing audits of the 64 eligible hospitals audited by the OIG. As of June 30, 2019, all hospitals were audited with the exception of three hospitals still lacking four years of cost report data[99]. Where overpayments are identified, DHCS, to the extent possible, is offsetting the overpayment against pending incentive payments.

4.4 FRAUD AND ABUSE

A&I has lead responsibility for DHCS' Medi-Cal Anti-Fraud program. Various data sources, as previously referenced in Table 14, are utilized to develop risk assessments and profiles which help identify providers whom pose the greatest risk for committing fraud or abuse. Providers meeting these criteria are often prioritized for review and audit. Examples of

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[99] The remaining three hospitals will be audited in the 2020 State Fiscal Year when four years of hospital cost report data is available for them.

criteria that would normally identify a provider as a risk for fraud or abuse include, but are not limited to:

- Unrelated investigations of a provider due to improper billing practices, data mining claims patterns irregularities, or whistleblower complaints.

- Manual reviews of uploaded AIU or MU documentation identify evidence of improper modification, alterations, or fabrication of submitted documents.

- Verification of self-certified patient utilization, encounters, charity care charges, or discharges has significant variances to reported numbers with no explanation.

- Review of Medi-Cal claims volume identifies a sudden drop in claim submissions after payments are remitted to the provider.

If, upon completion of a referral, pre-payment, or post payment review, A&I identifies that the providers submissions and representations exhibit misuse/abuse and/or fraudulent activities related to the EHR incentive program, it will make a referral to the IB. The IB will log the case into the Case Tracking System and assign for review by an investigator. The IB will determine whether there is potential misuse or reliable evidence that fraudulent activity has occurred, and refer the case to the State Department of Justice (DOJ) Bureau of Medi-Cal Fraud and Elder Abuse (BMFEA) where there is reliable evidence.

In addition to referrals to IB and the DOJ, when A&I identifies reliable evidence of fraud and/or abuse perpetrated by a provider participating in the Medi-Cal EHR Incentive Program, DHCS withholds or denies EHR incentive payments. Temporary suspensions of providers and payment withholds may also be instituted by A&I.

4.5 A&I CONTINUING DEVELOPMENT

A&I conducts staff webinars and has developed PowerPoint presentations on audit procedures. In addition to TeamMate, working paper templates and audit report templates have been developed to enhance consistency in conducting audits.

A&I monitors the implementation of the EHR audit program along with both the new and previously established audit processes and tools to measure their effectiveness and make modifications and refinements as needed. Audit programs and processes are expanded and modified when requirements are added or revised.

5   CALIFORNIA'S HIT ROADMAP

The long-term goals of the Medi-Cal EHR Incentive Program are to improve the quality and efficiency of health care for all Californians. In this section of the SMHP, information about the "as-is" and "to-be" environments are presented in graphical and tabular formats. More detailed information has been presented in prior sections of this document. Table 15 below provides a basic outline for progress in the future.

TABLE 15: TRANSFORMING HIT IN CALIFORNIA
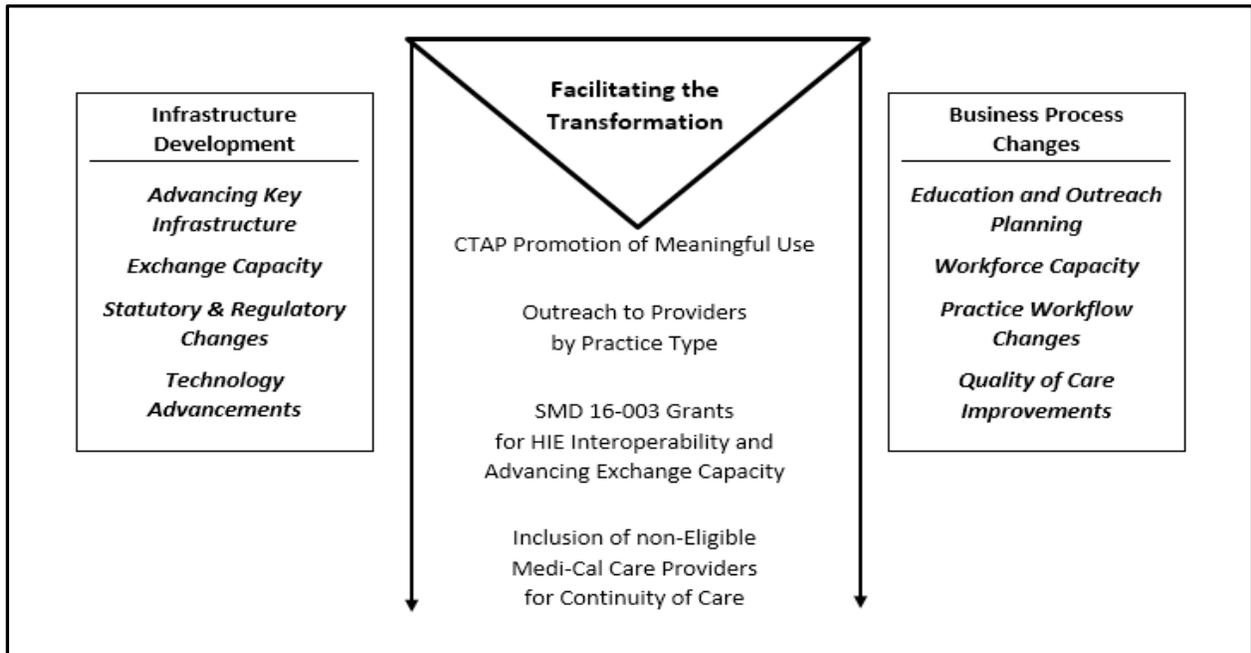
5.1 2017-2022 TIMELINE

Goals	Strategies	2017	2018	2019	2020	2021	2022
State Level Registry	• Ongoing modifications for Stage 2 and/or Stage 3. • Transition to new SLR contractor.						
Expansion of Meaningful Use	• Continue to monitor barriers to MU. • Attain 100% EH and 75% MU participation. • Increase MU participation for dentists to 50%. • Targeted EP outreach at the county, regional, and specialty level.						
Improve Care Coordination	• Participation of SUDs clinics. • Participation of Behavioral Health Clinics. • Implement bi-directional exchange capabilities. • Electronic collection of paper-based forms and clinical data. • Support of CAIR and CalREDIE specialty registries. • Support of Whole Person Care waiver Program.						
HIE Outreach	• Annual HIE Summit • Onboarding emergency services personnel through EMSA. • Outreach regarding consent via promotion of the SHIG and other tools/efforts. • Work with CAHIE to support adoption of the CalDURSA and CTEN. • Outreach to labs through CalREDIE. • Outreach to Community-based providers through CTAP.						
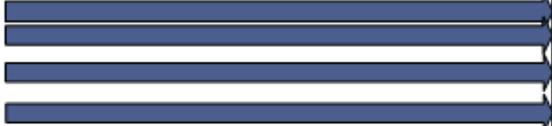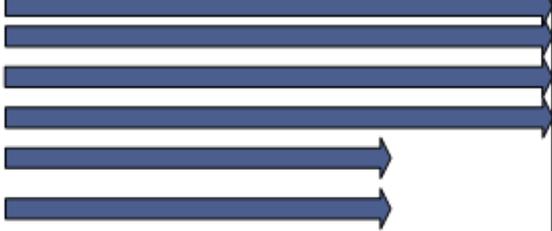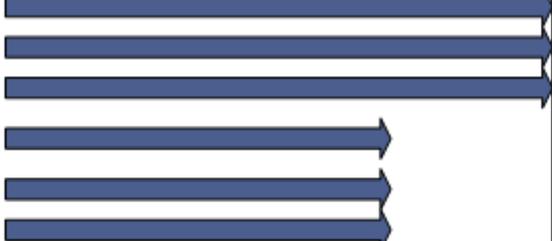
HIE Expansion	• Emergency responder participation in PULSE.
	• HIE for DHCS Waiver program.
	• CA-MMIS replacement systems to support improved health outcomes.
	• Leverage HITEMS demonstration project statewide.
	• Statewide implementation of PULSE for disaster medical response.
	• Develop a Social Determinants of Health Data Exchange.
	• Outreach to develop a means to improve patient matching.
	• Onboarding to CAIR and CalREDIE registries.
	• Development of and onboarding to specialized registries:
	    Behavioral Health/SUDs Registry
	    Parkinson's Registry
	    California Stroke Registry
	    California Cancer Registry
	    Patient Consent Registry
	    POLST Registry						

Goals	Strategies	2017	2018	2019	2020	2021	2022
Education and Outreach	• Support for professionals MU attestations through CTAP. • Support for HIE onboarding and usage through CTAP. • Evaluation of CTAP programs and contractors. • Outreach to dentists regarding meaningful use barriers. • Continued outreach efforts by CDPH staff for CAIR and CalREDIE. • Provider notices through the SLR, e-mail, and professional associations. • Bi-weekly conference calls with stakeholders.						
Support MITA Maturity	• Support interoperability (Level 3). • Support performance measurements. • Support inter-agency secure HIE. • Collection of electronic clinical data. • Development of Master Data Management plan.						
Program Auditing and Appeals	• Refinement of eligibility and MU Audit Strategies. • Complete Program Year 1 audits for all 329 participating hospitals. • Continue risk-based audits of EPs and EHs, including MU. • Participation in audit appeal hearings. • Adjustment of payments for hospitals and eligible providers.						
Program Transition/ Closeout	• Close submission of attestations: 03/31/2021 • Continue Provider Reviews and Payments. • Complete audit program and appeals. • Identify sustainable funding through MIMS, MITA, and other sources for HIT/HIE activities. • Secure alternative funding and begin transition of activities.						
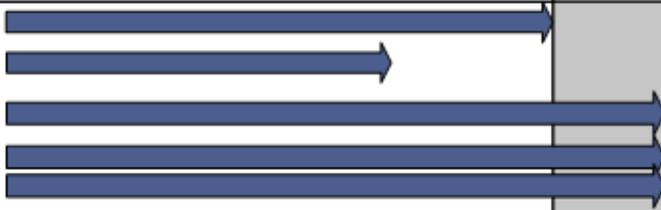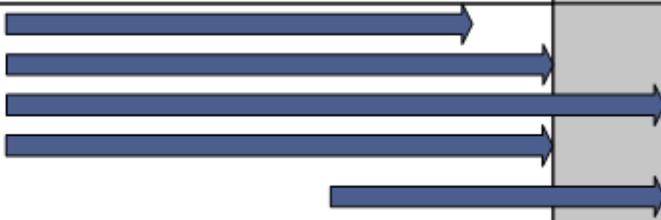
5.2   CURRENT AND FUTURE INITIATIVES

The following table presents a synopsis of the state's current and future initiatives. These initiatives encompass a range of efforts, including those related to provider outreach as well as further development of the systems needed to enhance interoperability.

TABLE 16: CURRENT AND FUTURE INITIATIVES

Initiative	Current Status	Future Activity
EHR Incentive Program	The state has closed out the final year for beginning participation in Program Year 2016 and has now deployed Stage 3 for 2017.	The state will continue targeted outreach efforts at the county, regional and specialty level in order to significantly increase the percentage of EPs meeting the various stages of MU.

The state will continue to expand the incentive program through statewide HIE and HIO efforts in order to improve interoperability and onboard those Medi-Cal providers that were not eligible to participate in the incentive program, such as substance abuse counselors, behavioral health providers, and other non-hospital care settings. This will enable data sharing across all providers involved in patient care, thus improving overall health. |
| State Level Registry (SLR) Modifications | The SLR has been operational since the beginning of the program and has been continuously modified to reflect changes to the Final Rule.

The SLR is operated by Conduent, the successor to Xerox, whose contract will expire September 2019. The successor, IBM, will assume operations by October 1, 2019. | Modifications for Stage 2 and Stage 3 in Program Year 2018 will be implemented as soon as the new regulations have been approved and are effective.

The state will continue to use the current vendor through September of 2019 and will transition to other support thereafter for the remainder of the program. |

Initiative	Current Status	Future Activity
Education and Outreach	The state employs direct emailing, website updates and social media on a regular basis to provide incentive program updates. The CTAP program was initiated in 2015 to provide technical support to EPs similar to the previous ONC Regional Extension Program. CTAP contractors support EPs with EHR and HIE milestones, and have assisted more than 3,000 EPs to AIU and 4,000 EPs to MU to date. In 2017, DHCS carried out a survey of dentists who had not returned for MU and distributed MU information specifically for dentists.	Due to a number of unavoidable delays in implementing the CTAP program fully after contract award, the state has requested and received a two-year no-cost extension to the program in order to allow the contractors to achieve the milestone goals for most or all of the targeted EPs. The state is employing data analytics to develop targeted lists of EPs with similar attributes that have suspended progression in meeting MU stages in order to design specific information to address their barriers. DHCS will continue to reach out to providers, particularly dentists, to increase their participation in MU. DHCS will conduct a survey of providers participating in the CTAP program to evaluate that program as to how it can become more efficient and effective. CDPH staff will continue outreach efforts to encourage and enroll providers and practices in CAIR and CalREDIE.

Initiative	Current Status	Future Activity
California Medicaid Management Information System (CA-MMIS)	CA-MMIS is the legacy system for management of Medi-Cal claims payments and through which EHR Incentive Program payments are made. Its replacement, a modular enterprise solution, is currently being procured.	CA-MMIS replacement systems will support DHCS' move towards HIE/HIT by improving health outcomes and quality services for Medi-Cal beneficiaries. Bridging the traditional split between the clinical and financial content of health care data requires an integrated, person-centered view of information. The enterprise system will provide a solution that supports unification of the financial and clinical data.
Medicaid Information Technology Architecture (MITA)	DHCS has completed its initial Medicaid Information Technology Architecture (MITA) State Self-Assessment (SS-A) to assess the MITA maturity levels of our Business, Information and Technical Architectures. The Technical Assessment and HIT Roadmap are currently drafted and evolving with progress over time.	The state will continue to update and maintain MITA business processes as the state's HIE/HIT landscape evolves. The DHCS goal is attain MITA Maturity Level 3 across the Business, Information and Technical Architectures by 2020. All new initiatives and projects must be reviewed and approved by the executive level MITA Governance Organization.

Initiative	Current Status	Future Activity
Electronic Clinical Data	The state is currently employing a CAASD TAR-free business process based on the receipt of information electronically, including clinical document templates using national standards. Providers participating in the EHR Incentive Program are required to report CQMs and have the capability to do so electronically from their EHR. California currently only requires CQMs to be reported by attestation. Certain paper-based forms are required from EPs by the state, which could feasibly be incorporated into EHRs for submission.	DHCS will implement bi-directional exchange capabilities using trust networks for trading partners: HIEs, groups, hospitals, providers, and Medi-Cal beneficiaries to electronically exchange clinical data, including receipt of CQMs for MU. DHCS is advising a community HIE (Redwood MedNet) which is developing software that will enable the electronic collection of printed form data into EHR vendor-agnostic format. The first such form is the Staying Healthy Assessment (SHA), a behavioral risk questionnaire required to be administered periodically to all Medi-Cal beneficiaries and stored for clinical use in the medical record.

Initiative	Current Status	Future Activity
Health Information Exchange (HIE) and Health Information Organizations (HIO)	The state's HIE landscape is large and complex, consisting of an array of two types of entities. These are either community-based HIO initiatives supported by a number of unaffiliated health care organizations within a geographic service area and connected electronically to public health resources; or, enterprise-based HIOs supported by a single hospital, health system, or integrated delivery network. The HIE landscape in the state is large, complex and continues to evolve. The state's annual HIE Stakeholder Summit was held in November 2017 to provide a venue for discussion of HIE advancement.	The state is investigating the use of enhanced funding as described in SMD #16-003 for onboarding of emergency services personnel, public health providers, pharmacies, laboratories, hospitals, and professionals. In addition to the statewide and regional proposals for HIE interoperability currently before the department, DHCS is also examining its 2017 Strategy for Quality Improvement in Health Care and the department's 1115 Waiver (Medi-Cal 2020 Waiver) for opportunities to further enhance their strategies with the available HIE infrastructure and onboarding funding. The state will continue with annual HIE Stakeholder Summits in the future.
Emergency Medical Services (EMS) Data Exchange	EMS provides entry into the emergency medical care system with response to medical and trauma emergencies. ONC provided grant funding for a demonstration project to develop Health Information Technology for Emergency Medical Services (HITEMS).	Leveraging the HITEMS demonstration project, the state is seeking funding for statewide implementation of HITEMS, developing interoperability among diverse HIE platforms. The system will support patient identification and bi-directional transmission of health information between emergency services personnel and hospital emergency medical personnel.

Initiative	Current Status	Future Activity
Patient Matching: Associating patients with their health records	The size and complexity of health care delivery in California is not conducive to a Master Patient Index and the issue of matching patients with their health records, and only their health records, persists.	DHCS will be working with stakeholders to identify a means to improve patient matching and the appropriate association of health information with patients that can be used by community HIOs, health systems, and state agencies. Given the success of a previously ONC-funded pilot project by EMSA, DHCS has requested funding via IAPD-U for implementation of a statewide Patient Unified Lookup System for Emergencies (PULSE) for disaster medical response.
Public Health Initiatives	California's Department of Public Health (CDPH) has implemented the California Immunization Registry (CAIR) and California's Reportable Disease Information Exchange (CalREDIE) which support MU within the EHR incentive program. Implementation was supported in part by 90/10 funding through the incentive program.	With the most recent 90/10 funding approved by CMS, CDPH will now engage in onboarding of providers to the CAIR system to expand it usage; and a CalREDIE Electronic Case Reporting (eCR) project will allow health care providers and organizations to comply with California's public health disease reporting requirements through an automated, secure process.

Initiative	Current Status	Future Activity
Parkinson's Disease (PD) Registry	California currently has Regional Caregiver Resource Centers (CRCs) to provide services to those families with caregivers providing support to family members with Parkinson's Disease.	The state intends to seek funding for the development of a Parkinson's Disease (PD) Specialized Registry that will provide a confidential database containing information about the extent and characteristics of PD in California. The PD Registry will facilitate MU Stage 2 and 3 requirements.
California Stroke Registry (CSR)	California currently has Regional Caregiver Resource Centers (CRCs) to provide services to those families with caregivers providing support to family members with cognitive issues associated with stroke.	The state intends to seek funding for the development of a Stroke Specialized Registry to monitor the quality of acute stroke care across clinical settings, including pre-hospital care provided through exchange of real-time information between emergency medical services (EMS) and in-hospital care personnel. The Stroke Registry will facilitate MU Stage 2 and 3 regulations.

Initiative	Current Status	Future Activity
California Cancer Registry (CCR)	The CCR collects information about most types of cancers diagnosed in California. The CCR has expanded their technical capacity to receive physician reports to meet MU Stage 2 requirements.	The CCR plans to coordinate with the San Diego Beacon Community to expand electronic health information exchange through the San Diego Health Connect HIE. Areas of focus within the San Diego Beacon Community include coordination with the Beacon, Education, Analytic and Collaboration Hub (BEACH) to integrate and exchange diagnostic and clinical data relative to the hospital cancer case abstract for legislative mandated reporting.
Patient Consent Registry	While patient consent must be obtained for health information exchange, there is currently no statewide registry for managing the varying levels of consent for medical, behavioral and substance use disorder information.	DHCS plans to seek funding for the development of a specialized registry in which consent information can be stored and easily accessed by HIEs and other entities that may require sharing of health information to better inform treatment plans.
Physician Orders for Life-Sustaining Treatment (POLST) Registry	POLST is a voluntary record of a patient's treatment wishes to inform actionable medical orders, especially in end-of-life situations. The California POLST eRegistry pilot took place in Contra Costa County and San Diego.	DHCS will seek funding for the development of a statewide bi-directional POLST registry that would be accessible not only to acute care but long-term care facilities, including skilled nursing facilities and hospice. DHCS is interested in supporting the development of a unified approach to accessing POLST information.

Initiative	Current Status	Future Activity
Social Determinants of Health	While there is a growing body of research indicating that the social determinants of health (income, education, food, employment, transportation, personal safety, housing, etc.) are the primary drivers of long-term health improvement, there is no current method of exchanging these data elements in the state.	The state intends to seek funding to establish a Social-Health Information Exchange (S-HIE), introducing social determinants of health into HIE and EHRs to augment whole person care. Supplementary data sources would include data from social services agencies, housing authorities, mental and behavioral health facilities, correctional facilities, schools, census data, and public health data. These data, available to the EP, will inform targeted referral entities, such as pharmacies, physical therapy, legal, financial, patient navigation, etc. This enhanced view of the totality of the patient's needs will better inform the EP in meeting transitions of care and continuity of care core measures.
Behavioral Health Data Exchange	Privacy and security rules for consent, use, disclosure and reporting are more stringent for behavioral health care treatment. The data is generally retained separately from general health care data, which can result in disjointed care for patients.	In order to facilitate improvement in the quality of care, the state intends to develop a behavioral health information exchange (BHIE) which will address this unique situation by utilizing a hybrid federated/repository model of data sharing to ensure the consumer record is complete and confidential.

Initiative	Current Status	Future Activity
Substance Use Disorder Data Exchange	Privacy and security rules for consent, use, disclosure and reporting are more stringent for substance use disorder treatment. The data is generally retained separately from general health care data, which can result in disjointed care for patients.	In order to facilitate improvement in the quality of care, the state intends to develop a substance use disorder information exchange which will address this unique situation by utilizing a hybrid federated/repository model of data sharing to ensure the consumer record is complete and confidential.

5.3 BEYOND 2021

Like most states, California understands the challenges in continued funding and is considering ways to expand health information technology after the Medi-Cal EHR Incentive Program sunsets in 2021. Given the complexity of both health care delivery and the HIE landscape in California, the state is investigating several methods for statewide expansion of interoperability as well as enhancements to the current HIE infrastructure to facilitate healthcare delivery.

DHCS intends to examine sustainability models capable of leveraging the progress made by the Medi-Cal EHR Incentive Program. These models will include identification of specific areas of health needing quality improvement, such as programs within the state's Quality Strategic Plan and the 1115 Waiver, Medicaid 2020 Waiver. This could be accomplished through more efficient use of CQM data gathered electronically.

Future activities will include continued support of MMIS and MITA, the collection of CQMs electronically, and efforts related to interoperability. As the state identifies various systems which require further development or replacement, our intention is to engage with these efforts in support of HIE/HIT and further improve health outcomes and quality services for Medi-Cal beneficiaries. It is through efforts such as these that the state will seek to further the benefits and progress made to date in California.

APPENDICES

APPENDIX 1: SUMMARY OF RECENT HIT SURVEYS IN CALIFORNIA

Survey Name	Survey Administrator(s)	Organizations Surveyed	Geographic Scope	Sample	CA Response Rate	N	Survey Method	Yrs. Data Collected	Repeated in Future	Survey Interval	Survey instrument Available	Data Publically Available
National Ambulatory Medical Care Survey	Centers for Disease Control and Preventions	Office-Based Physicians	National	sample of office-based physicians	ə		Mail, web, phone	2015	Yes	Annual	Yes	Yes
Study of Physician Use of HIT in California	University of California, San Francisco; California Medical Board of California	Physicians	CA	Random sample of physicians renewing medical license	N/A	n/a	Paper, online	2013				
Study of Physician Use of HIT in California	University of California, San Francisco; California Medical Board of California	Physicians	CA	Random sample of physicians renewing medical license	N/A	n/a	Paper, online	Jan-April 2011	Yes	Annual through 2013	Yes	Only in aggregate
Use of Electronic Records by Nurse Practitioners and Nurse Midwives	University of California, San Francisco; California Medicaid Research Institute	Nurse Practitioners and Nurse Midwives	CA	sample of members	54%	4862	Mail, web	2011-2012	n/a	n/a	Yes	Yes
Landscape Assessment Summary Report	McKinsey&Company; The Lewin Group	Physicians	CA	sample	N/A	n/a	ə	2010	n/a	n/a	No	Yes
Adoption of Electronic Health Records Systems among U.S. Non-Federal Acute Care Hospitals: 2008-2015	American Hospital Association	Hospitals	National	National	61%	320	Mail, web, phone	2008-2015	Yes	Annual	No	Yes
Adoption of Certified Electronic Health Records Systems and Electronic Information Sharing in Physician Offices: United States, 2013 and 2014	Centers for Disease Control and Preventions	Office-Based Physicians	National	Random sample	ə	ə	Mail, phone	2013-2014	Maybe	Annual	No	Yes
California Primary Care Association Survey	California Primary Care Association	Community Clinics and Health Centers	CA	sample of member and non-members	ə	ə	ə	2014	No	n/a	ə	No
The Availability of Electronic Health Records in California Physician Practices	University of California, San Francisco	Physicians	CA	sample of member			mail	June-July 2013	ə	ə	Yes	Yes
Health Information Technology (HIT) Landscape Survey	California Primary Care Association	Community Clinics and Health Centers	CA	sample of member and non-members	ə	120		2012	No	n/a	ə	Yes

Survey Name	Survey Administrator(s)	Organizations Surveyed	Geographic Scope	Sample	CA Response Rate	N	Survey Method	Yrs. Data Collected	Repeated in Future	Survey Interval	Survey instrument Available	Data Publically Available
Progress Towards Meaningful Use Among Critical Access and Other Small Rural Hospitals Working with Regional Extension Centers	Health Resources and Services Administration	Critical Access and Small Rural Hospitals	National	Universe	ə	ə	ONC CRM Tool and National Critical Access Hospital Database	2012	ə	n/a	No	Yes
Health Information Technology In California: Milestones and Miles to Go	University of California, Centers for Disease Control and Prevention's National Center for Health Statistics, Health Resources and Services Administrations, American Hospital Associations, SK&A, Healthcare Information and Management Systems Society	Physicians, Acute Care and Ambulatory Facilities, Hospitals, Health Centers						2010-2013	ə	n/a	No	Yes
Health Information Technology in California Dental Practices: Survey Findings	California HealthCare Foundation	Dentists	CA	sample of members	3.7%	19534	email, mail	Jan - April 2010	ə	n/a	No	Yes
Meaningful Use Survey for Dentists	Department of Health Care Services	Dentists	CA	sample of participating dentists	12%		web-based survey	Oct-Dec 2017	ə	n/a	No	Yes

APPENDIX 2: MEDICAL BOARD SURVEY ON EHR USE

Dear Physician,

The Medical Board of California (MBC), in conjunction with a team of experienced researchers from the University of California, San Francisco (UCSF), is seeking information regarding physician practices in California. You have been randomly selected to answer a few questions regarding the characteristics of your practice and your use of electronic health records. Your responses to these questions are critical in forming public policy. The information you provide is voluntary and confidential and will not affect the timing or any other aspect of your license renewal. It will be analyzed by the research team at UCSF. Findings will be presented only in aggregate. No personal or identifying information will be shared with payers or other parties.

We would greatly appreciate your answering the following questionnaire and including your responses, along with your other license renewal information, in the envelope provided. Alternatively, if you are completing your renewal on line, you may submit your responses through the Web site. The study questions have been reviewed and approved by the MBC and UCSF's Committee on Human Research.

Debbie Nelson	Janet Coffman, PhD
Medical Board of California	University of California, San Francisco
(916) 263-2480	(415) 476-2435

Please answer each question by completely shading the appropriate circle like this:
●

1. PRACTICE SETTING *What is your principal practice location? (check only one)*

Medical office: Solo practice	O	Kaiser Permanente	O
Medical office: Small medical partnership (2 to 9 physicians)	O	Community health center/public clinic	O
Medical office: Group practice (10 to 49 physicians)	O	VA or military	O
Medical office: Large group practice (50+ physicians)	O	Other _____ (specify _____)	O

2. PRACTICE TYPE *Of the time you devote to patient care (100%), what percentage of time do you provide care in each of the following settings?*

	Ambulatory care	Inpatient care	Emergency department	Diagnostic services (e.g., radiology, pathology)	Other
0%	O	O	O	O	O
1 to 19%	O	O	O	O	O
20 to 39%	O	O	O	O	O
40 to 59%	O	O	O	O	O
60 to 79%	O	O	O	O	O
80 to 89%	O	O	O	O	O
90 to 100%	O	O	O	O	O

3. PAYERS *Of your total number of patients (100%), what percentage are:*

	Private, commercial, other insurance	Medicare	Medi-Cal	Healthy Families	Other (e.g., VA, CHAMPUS)	Uninsured
0%	○	○	○	○	○	○
1 to 9%	○	○	○	○	○	○
10 to 19%	○	○	○	○	○	○
20 to 29%	○	○	○	○	○	○
30 to 39%	○	○	○	○	○	○
40 to 49%	○	○	○	○	○	○
50 to 59%	○	○	○	○	○	○
60 to 69%	○	○	○	○	○	○
70 to 79%	○	○	○	○	○	○
80 to 89%	○	○	○	○	○	○
90 to 99%	○	○	○	○	○	○
100%	○	○	○	○	○	○

4. INCENTIVES FOR HEALTH IT USE

In 2011, Medicare and Medi-Cal will begin offering financial incentives for physicians to adopt, implement, or upgrade computerized medical records systems (also known as electronic health records or electronic medical records) and use them meaningfully in practice. Do you or your principal practice organization plan to apply for these incentive payments? Please check only ONE answer from the list below.

I intend to apply for incentive payments but uncertain whether Medicare or Medi-Cal	○
I intend to apply for the Medicare incentive	○
I intend to apply for the Medi-Cal incentive	○
I do not at this time plan to apply for either incentive or need more information to make a decision	○
I am not eligible for either the Medicare or the Medi-Cal incentive	○

5. USE OF COMPUTERS IN YOUR MAIN PRACTICE LOCATION *Does your main practice site have a computerized medical records system?* Yes ○ No ○ Don't know ○

If you answered "Yes", *please answer the following questions about the (A)* **availability of features** *of your main practice site's computerized medical records system and (B)* **the extent to which you use features**.

	Part I — Availability of Features			Part II — Use of Features			
	No	Do not Know	Yes	Do not use	Use some of the time	Use *most or all* of the time	Not applicable to my practice or specialty
a. Patient demographics (e.g., race/ethnicity)	O	O	O → Go to Part II	▶ O	O	O	O
b. Clinical notes (e.g., office visit notes)	O	O	O → Go to Part II	▶O	O	O	O
c. Patient problem list/summary	O	O	O → Go to Part II	▶O	O	O	O
d. Lists of medications each patient takes	O	O	O → Go to Part II	▶O	O	O	O
e. List of medication allergies	O	O	O → Go to Part II	▶ O	O	O	O
f. Ordering and transmitting prescriptions electronically	O	O	O → Go to Part II	▶ O	O	O	O
g. Ordering laboratory tests	O	O	O → Go to Part II	▶O	O	O	O
h. Viewing or receiving laboratory test results	O	O	O → Go to Part II	▶O	O	O	O
i. Ordering radiology tests	O	O	O → Go to Part II	▶O	O	O	O
j. Viewing printed records of radiology test results	O	O	O → Go to Part II	▶O	O	O	O
k. Viewing images from radiology tests	O	O	O → Go to Part II	▶O	O	O	O
l. Generating lists of patients by specific condition	O	O	O → Go to Part II	▶O	O	O	O
m. Generating routine reports of quality indicators	O	O	O → Go to Part II	▶O	O	O	O
n. Transmit information electronically to entities outside your practice to which you frequently refer patients OR from which patients are referred to you?	O	O	O → Go to Part II	▶O	O	O	O
o. Transmitting data to immunization registries?	O	O	O → Go to Part II	▶O	O	O	O
p. Patients able to access their own electronic record	O	O	O → Go to Part II	▶O	O	O	O

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Appendix A. Survey Instrument

Dear Physician,

The University of California, San Francisco (UCSF) and its team of experienced researchers, with the assistance of the Medical Board of California (MBC), is seeking information regarding physician practices in California. Your responses to these questions are critical in forming public policy. Your participation in this endeavor is voluntary and the information will be treated confidentially and will not affect the timing or any other aspect of your license renewal. The supplied information will be analyzed by the research team at UCSF and the findings will be presented only in aggregate. No personal or identifying information will be shared with payers or other parties, and a specified protocol will be followed to safeguard the information you provide. The UCSF research team may contact your office to confirm some of the information you supplied.

We would greatly appreciate your answering the following questionnaire and including your responses, along with your other license renewal information, in the envelope provided. Alternatively, if you are completing your renewal on line, you may submit your responses through the Web site. The study questions have been reviewed and approved by the MBC and UCSF's Committee on Human Research.

Janet Coffman, PhD, Associate Professor
University of California, San Francisco
(415) 476-2435

Natalie Lowe
Medical Board of California
(916) 263-2382

Please answer each question by completely shading the appropriate circle like this ●

1. USE OF COMPUTERS IN YOUR MAIN PRACTICE LOCATION *Does your main practice location have a computerized medical records system (also known as an electronic health record or an electronic medical record)?*

Yes ○ *See below*   No ○ *Go to Question 3*   Do Not Know ○

If you answered "Yes" above, please answer the following questions about your main practice location's computerized medical records system. If a feature is available, please indicate to what extent you use it.	YES, the feature is available				NO, the feature is not available	DO NOT KNOW
	Do not use	Use some of the time	Use most or all of the time	Not applicable to my practice or specialty		
a. Patient demographics (e.g., race/ethnicity)	○	○	○	○	○	○
b. Clinical notes (e.g., office visit notes)	○	○	○	○	○	○
c. Patient problem list/summary	○	○	○	○	○	○
d. List of medications patient takes	○	○	○	○	○	○
e. List of medication allergies	○	○	○	○	○	○
f. Ordering and transmitting prescriptions electronically	○	○	○	○	○	○
g. Ordering laboratory tests	○	○	○	○	○	○
h. Viewing or receiving laboratory test results	○	○	○	○	○	○
i. Ordering radiology tests	○	○	○	○	○	○
j. Viewing printed records of radiology test results	○	○	○	○	○	○
k. Viewing images from radiology tests	○	○	○	○	○	○
l. Generating lists of patients by specific condition	○	○	○	○	○	○
m. Generating routine reports of quality indicators	○	○	○	○	○	○
n. Transmitting information electronically to entities outside your practice to which you frequently refer patients OR from which patients are referred to you	○	○	○	○	○	○
o. Transmitting data to immunization registries	○	○	○	○	○	○
p. Patients able to access their own electronic record	○	○	○	○	○	○

2. SATISFACTION *If you answered "Yes" to Question 1, how satisfied are you with the computerized medical records system at your main practice location.*

Very satisfied ○   Somewhat satisfied ○   Somewhat dissatisfied ○   Very dissatisfied ○ *Go to Question 4*

3. IF YOU DO NOT NOW HAVE A COMPUTERIZED MEDICAL RECORDS SYSTEM AT YOUR MAIN PRACTICE LOCATION *Does your practice plan to purchase one within the next 2 years?*   Yes ○   No ○   Undecided ○

4. INCENTIVES FOR EHR USE *In 2011, Medicare and Medi-Cal began offering financial incentives for physicians to adopt, implement, or upgrade computerized medical records systems (also known as electronic health records or electronic medical records) and use them meaningfully in practice. Please check only ONE answer from the list.*

I have registered for the Medi-Cal incentive.　　○ *Go to Question 6*　　I have registered for the Medicare incentive.　　○ *Go to Question 6*

I plan to register for the Medi-Cal incentive.　　○ *Go to Question 6*　　I plan to register for the Medicare incentive.　　○ *Go to Question 6*

I plan to register for incentive payments but am uncertain as to whether Medicare or Medi-Cal.　○ *Go to Question 6*

I do not plan to register for either the Medi-Cal or the Medicare incentive. ○ *Go to Question 5*

5. REASONS FOR NOT REGISTERING *If you do not plan to register for either the Medi-Cal or Medicare incentive, please indicate why not.*

Do not plan to use an EHR　○　　Money provided　○　　Do not believe I am　○　　Other reason　○
　　　　　　　　　　　　　　not sufficient　　　eligible

6. PRACTICE TYPE *What is your principal practice location? (check only one)*

Solo practice	○	Kaiser Permanente	○
Small medical partnership (2 to 9 physicians)	○	Community health center/public clinic	○
Group practice (10 to 49 physicians)	○	VA or military	○
Large group practice including academia (50+ physicians)	○	Other (specify _____)	○

7. TIME SPENT IN HOSPITAL SETTINGS *Do you spend 90% or more of your time in hospital settings (inpatient or emergency department)?*

Yes ○　　　　　　No ○

8. PATIENT AGES *What percentages of your patients are in the following age groups? (write in percentages, total should sum to 100%.)*

Age 0-17 Years	Age 18-64 Years	Age 65 Years or Older	Total
_____ +	_____ +	_____ =	100%

9. PAYERS *Of your total number of patients (100%), what percentage are:*

	Private, commercial, other insurance	Medicare	Medi-Cal	Healthy Families	Other (e.g., VA, CHAMPUS)	Uninsured
0%	○	○	○	○	○	○
1 to 9%	○	○	○	○	○	○
10 to 19%	○	○	○	○	○	○
20 to 29%	○	○	○	○	○	○
30 to 39%	○	○	○	○	○	○
40 to 49%	○	○	○	○	○	○
50 to 59%	○	○	○	○	○	○
60 to 69%	○	○	○	○	○	○
70 to 79%	○	○	○	○	○	○
80 to 89%	○	○	○	○	○	○
90 to 99%	○	○	○	○	○	○
100%	○	○	○	○	○	○

APPENDIX 3: HRSA HIT FUNDING

HEALTH CENTER CONTROLLED NETWORK GRANTS (H2Q)

Grantee Name	Program Name	Financial Assistance	Award Year	Grant Project Period End Date
Coalition of Orange County Community Clinics	Health Center Controlled Networks (H2Q)	$500,000.00	2016	07/31/2019
Coalition of Orange County Community Clinics	Health Center Controlled Networks (H2Q)	$500,000.00	2017	07/31/2019
Coalition of Orange County Community Clinics	Health Center Controlled Networks (H2Q)	$500,000.00	2018	07/31/2019
COMMUNITY CLINIC ASSOCIATION OF LOS ANGELES COUNTY	Health Center Controlled Networks (H2Q)	$625,000.00	2013	07/31/2016
COMMUNITY CLINIC ASSOCIATION OF LOS ANGELES COUNTY	Health Center Controlled Networks (H2Q)	$1,041,667.00	2015	07/31/2016
COMMUNITY CLINIC ASSOCIATION OF LOS ANGELES COUNTY	Health Center Controlled Networks (H2Q)	$625,000.00	2014	07/31/2016
COMMUNITY CLINIC ASSOCIATION OF LOS ANGELES COUNTY	Health Center Controlled Networks (H2Q)	$1,250,000.00	2016	07/31/2019
COMMUNITY CLINIC ASSOCIATION OF LOS ANGELES COUNTY	Health Center Controlled Networks (H2Q)	$1,250,000.00	2017	07/31/2019
COMMUNITY CLINIC ASSOCIATION OF LOS ANGELES COUNTY	Health Center Controlled Networks (H2Q)	$1,250,000.00	2018	07/31/2019
Council of Community Clinics	Health Center Controlled Networks (H2Q)	$400,000.00	2013	07/31/2016
Council of Community Clinics	Health Center Controlled Networks (H2Q)	$666,667.00	2015	07/31/2016
Council of Community Clinics	Health Center Controlled Networks (H2Q)	$400,000.00	2014	07/31/2016
Council of Community Clinics	Health Center Controlled Networks (H2Q)	$500,000.00	2016	07/31/2019
Council of Community Clinics	Health Center Controlled Networks (H2Q)	$500,000.00	2017	07/31/2019
Council of Community Clinics	Health Center Controlled Networks (H2Q)	$500,000.00	2018	07/31/2019
Golden Valley Health Centers	Health Center Controlled Networks (H2Q)	$475,000.00	2013	07/31/2016
Golden Valley Health Centers	Health Center Controlled Networks (H2Q)	$791,667.00	2015	07/31/2016
Golden Valley Health Centers	Health Center Controlled Networks (H2Q)	$475,000.00	2014	07/31/2016
REDWOOD COMMUNITY HEALTH COALITION	Health Center Controlled Networks (H2Q)	$500,000.00	2016	07/31/2019
REDWOOD COMMUNITY HEALTH COALITION	Health Center Controlled Networks (H2Q)	$500,000.00	2017	07/31/2019
REDWOOD COMMUNITY HEALTH COALITION	Health Center Controlled Networks (H2Q)	$500,000.00	2018	07/31/2019
REDWOOD COMMUNITY HEALTH NETWORK	Health Center Controlled Networks (H2Q)	$400,000.00	2013	07/31/2016
REDWOOD COMMUNITY HEALTH NETWORK	Health Center Controlled Networks (H2Q)	$666,667.00	2015	07/31/2016
REDWOOD COMMUNITY HEALTH NETWORK	Health Center Controlled Networks (H2Q)	$400,000.00	2014	07/31/2016
United Health Centers of The San Joaquin Valley	Health Center Controlled Networks (H2Q)	$500,000.00	2016	07/31/2019
United Health Centers of The San Joaquin Valley	Health Center Controlled Networks (H2Q)	$500,000.00	2017	07/31/2019
United Health Centers of The San Joaquin Valley	Health Center Controlled Networks (H2Q)	$500,000.00	2018	07/31/2019
		$16,716,668.00		

RURAL HEALTH INFORMATION TECHNOLOGY WORKFORCE (R01) GRANTS

Grantee Name	Program Name	Financial Assistance	Award Year	Grant Project Period End Date
LIVINGSTON COMMUNITY HEALTH	Rural Health Information Technology Workforce Program (R01)	$300,000.00	2013	08/31/2016
LIVINGSTON COMMUNITY HEALTH	Rural Health Information Technology Workforce Program (R01)	$300,000.00	2015	08/31/2016
LIVINGSTON COMMUNITY HEALTH	Rural Health Information Technology Workforce Program (R01)	$300,000.00	2014	08/31/2016
		$900,000.00		

SMALL HEALTH CARE PROVIDER QUALITY IMPROVEMENT (G20) GRANT

Grantee Name	Program Name	Financial Assistance	Award Year	Grant Project Period End Date
ADVENTIST HEALTH SYSTEM/WEST	Small Health Care Provider Quality Improvement (G20)	$199,141.00	2016	07/31/2019
ADVENTIST HEALTH SYSTEM/WEST	Small Health Care Provider Quality Improvement (G20)	$195,173.00	2017	07/31/2019
ADVENTIST HEALTH SYSTEM/WEST	Small Health Care Provider Quality Improvement (G20)	$199,935.00	2018	07/31/2019
Altura Centers For Health	Small Health Care Provider Quality Improvement (G20)	$150,000.00	2013	07/31/2016
Altura Centers For Health	Small Health Care Provider Quality Improvement (G20)	$175,000.00	2014	07/31/2016
Altura Centers For Health	Small Health Care Provider Quality Improvement (G20)	$150,000.00	2015	07/31/2016
Clinicas De Salud Del Pueblo, Inc.	Small Health Care Provider Quality Improvement (G20)	$150,000.00	2013	07/31/2016
Clinicas De Salud Del Pueblo, Inc.	Small Health Care Provider Quality Improvement (G20)	$150,000.00	2014	07/31/2016
Clinicas De Salud Del Pueblo, Inc.	Small Health Care Provider Quality Improvement (G20)	$150,000.00	2015	07/31/2016
Hi-desert Memorial Health Care District	Small Health Care Provider Quality Improvement (G20)	$200,000.00	2016	07/31/2019
Hi-desert Memorial Health Care District	Small Health Care Provider Quality Improvement (G20)	$200,000.00	2017	07/31/2019
Hi-desert Memorial Health Care District	Small Health Care Provider Quality Improvement (G20)	$200,000.00	2018	07/31/2019
Mountain Health & Community Services, Inc.	Small Health Care Provider Quality Improvement (G20)	$200,000.00	2016	07/31/2019
Mountain Health & Community Services, Inc.	Small Health Care Provider Quality Improvement (G20)	$200,000.00	2017	07/31/2019
Mountain Health & Community Services, Inc.	Small Health Care Provider Quality Improvement (G20)	$200,000.00	2018	07/31/2019
QUARTZ VALLEY INDIAN RESERVATION	Small Health Care Provider Quality Improvement (G20)	$148,810.00	2013	07/31/2017
QUARTZ VALLEY INDIAN RESERVATION	Small Health Care Provider Quality Improvement (G20)	$149,267.00	2014	07/31/2017
QUARTZ VALLEY INDIAN RESERVATION	Small Health Care Provider Quality Improvement (G20)	$149,622.00	2015	07/31/2017
		$3,166,948.00		

APPENDIX 4: PUBLIC HEALTH BROCHURE

Improve Health. Reduce Costs.

Track and Report Clinical Quality Measures to Meet Meaningful Use

Hypertension Control
CMS 165/NQF 0018
Percentage of adult hypertensive patients with controlled blood pressure (<140/90 mmHg)

1 in 3 adults in the US have hypertension

Only 52% of adults have it controlled

Diabetes Control
CMS 122v3/NQF 0059
Percentage of adult diabetes patients with poor HbA1c control (>9.0%)

29.1 million people in the US have diabetes

1.4 million Americans are diagnosed with diabetes every year

Health care providers who track these clinical quality improvement measures can help fight hypertension and diabetes by:

- Using electronic health records to:
  - Identify and target patients with gaps in control.
  - Adopt evidence-based treatment protocols.
  - Provide decision support for their health care team and reminders for patients.

For more information, visit http://www.cdph.ca.gov/programs/cdcb/Pages/default.aspx

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Improve Health. Reduce Costs.

Track and Report Clinical Quality Measures to Meet Meaningful Use

Flu Immunizations
CMS 147v2/NQF 0041

Colorectal Cancer Screening
CMS 130v2/NQF 0034

Just like the flu, colorectal cancer is **preventable**, **treatable**, and **beatable** when found **early**.

2nd leading cause of cancer death in CA for women and men combined

Five-year survival rate in CA is 92% when detected early

But only **42% of colorectal cancers are** detected early

Health care providers who track these clinical quality improvement measures can help prevent the flu and colorectal cancer by:

- Identifying and targeting patients eligible for flu shot and colorectal cancer screening test.
- Distributing the Colorectal Cancer Fecal Immunochemical Test (FIT) to the patient when getting their flu shot.
- Adopting standardized screening reminder protocols.
- Implementing algorithms within electronic health systems that assure patients are being reminded to get screened and obtain their flu shot.

Screen your patients. It could save their lives!

APPENDIX 5:   CALIFORNIA EHEALTH PARTNERS/ORGANIZATIONS

(Asterisks* denotes program received ARRA/HITECH funding)

Beacon Grantee—UC San Diego*

The Beacon Community Cooperative Agreement Program provided funding to communities to build and strengthen their health information technology (health IT) infrastructure and exchange capabilities to demonstrate the vision of the future where hospitals, clinicians and patients are meaningful users of health IT, and together the community achieves measurable improvements in health care quality, safety, efficiency, and population health. The UC San Diego Health System received a $15 million grant aimed at partnering with local health entities to improve patient care, safety and efficiency through information technology in the San Diego community.

For more information, go to the University of California, San Diego News Center.

Cal eConnect*

Cal eConnect was the governance entity designated by the state to provide leadership and implement, with public input, Strategic and Operational Plans already developed by the state. Cal eConnect was also charged with developing a sustainable business model, establishing ground rules and policies to ensure safety and security within HIE, engaging patients (particularly those who are vulnerable and underserved), identifying core HIE services, and arranging for provision of such services.

(*No website available).*

Cal eRx

Cal eRx was an organization promoting e-prescribing (eRx) as part of an electronic health record (EHR) as the standard of care. Its objectives were to inform a statewide plan in order increase provider adoption of e-prescribing, promote payer provision of eligibility and other information, increase pharmacy productivity, and raise confidence and demand amongst consumers and purchasers.

(*No website available).*

CalHIPSO*

Founded by clinical providers from the California Medical Association, the California Primary Care Association, and the California Association of Public Hospitals & Health Systems, the California Health Information Partnership and Services Organization (CalHIPSO) is a non-profit organization that offers a variety of programs and services designed to help clinical providers transition from a paper-based practice to one that successfully uses electronic health records. CalHIPSO is responsible for a wide range of activities related to identifying and signing up physicians for EHRs, vendor vetting, workforce development, regulatory activities, reporting, developing and implementing privacy and security best practices, and group purchasing. CalHIPSO provides services to all of California, except for Los Angeles and Orange counties.

California Department of Public Health

The California Department of Public Health (CDPH) is working together with state departments, agencies, local health departments, and other organizations to establish safe and secure health information exchange. Our departmental goal is to align public health programs to meet federal requirements for MU. We are assessing programs to be able to receive electronic laboratory and syndromic surveillance data from eligible providers and hospitals. We are also researching solutions to improve immunization information exchange between providers and immunization registries within the state. In addition, CDPH is continuing to identify public health programs that are impacted by MU and to explore implications to improve public health efficiencies and outcomes.

California Health Workforce Alliance (CHWA)*

The California Health Workforce Alliance (CHWA) seeks to develop and support activities that will educationally and professionally develop more than one million persons. Through a public-private partnership to implement strategies to meet California's emerging health workforce needs, the alliance will link state, regional, and institutional workforce initiatives to reduce duplicated efforts, develop a master plan, and advance current health workforce needs. In the next 30 years, CHWA will develop initiatives that educationally and developmentally prepare more than one million healthcare workers.

California Telehealth Network (CTN)*

The California Telehealth Network (CTN) is a program funded by the Federal Communication Commission's Rural Health Care Program. Its aim is to significantly increase access to acute, primary and preventive health care in rural America through the use of telecommunications in healthcare settings.

California Office of Health Information Integrity (OHII)*

The California Office of Health Information Integrity (CalOHII) develops new privacy and security standards to enable the adoption and application of HIE in California. CalOHII is also engaged in the expansion of broadband throughout California, the implementation of telehealth, and providing support to the Health Information Technology Financing study. Facilitated by CalOHII, the Privacy and Security Advisory Board (PSAB) develops and recommends the new standards. Adoption of privacy and security standards for HIE will ensure that a person's critical health information can move safely and securely to the point of care.

CalOptima Regional Extension Center (COREC)*

Through a $4.6 million federal grant, CalOptima will serve as Orange County's Regional Extension Center (REC), providing education and technical assistance to primary care physicians as they make the move to the new technology.

CAHIE

The California Association of Health Information Exchanges (CAHIE) is an association of individuals and organizations focused on securely sharing health information in pursuit of the triple aim. CAHIE was formed to promote collaboration to solve difficult policy and technology problems, and to facilitate statewide health information sharing through voluntary self-governance. CAHIE developed the California DURSA, a multi-party data sharing agreement which allows participants to interoperate using recognized standards and launched the California Trusted Exchange Network (CTEN).

eHealth Coordinating Committee*

The eHealth Coordinating Committee was a multi-stakeholder committee created to coordinate various HITECH and eHealth initiatives. The Coordinating Committee, with counsel from five workgroups, identified services that may be shared by participants and propose plans to fund and coordinate their delivery. This body's goal was to identify barriers to success for the various partners and propose solutions, providing direct assistance where possible and desired.
(*No website available)*

eHealth Advisory Board

The eHealth Advisory Board supports coordinated and collaborative efforts among a diversity of healthcare stakeholders to adopt HIT, exchange health information, and develop and comply with statewide policy

guidelines. The Board also seeks to maximize California's competitiveness in applying for federal HIE implementation funding and ensure accountability and transparency in the expenditure of public funds. Finally, the Board aims to improve public health using health information exchange through stronger public health surveillance and emergency response capabilities.

(*No website available*)

HITEC-LA*

HITEC-LA is the exclusive federally-designated HIT Regional Extension Center (REC) for Los Angeles County, charged with helping doctors and primary care providers purchase, implement and use electronic health records in a meaningful way. HITEC-LA will help providers assess their technology needs, as well as offer education, training, and on-site technical assistance.

Medi-Cal Promoting Interoperability Program (formerly the Medi-Cal EHR Incentive Program)*

The Health Information Technology for Economic and Clinical Health Act (HITECH Act) established programs under Medicare and Medicaid to provide incentive payments to eligible professionals and eligible hospitals as they demonstrate meaningful use of certified EHR technology. Beginning in 2011, eligible Medi-Cal providers and hospitals will be able to receive incentive payments to assist in purchasing, installing, and using electronic health records in their practices. Additional program information is available on the State Level Registry for the Medi-Cal EHR Incentive Program.

Object Health

Object Health is a consulting group that assists health care organizations, communities, and government agencies adopt and implement health information technologies to improve the effectiveness of community health care delivery. Object Health is a service partner of HITEC-LA.

Western Regional HIT Consortium*

To address the need for qualified healthcare workers, the Western Regional HIT Consortium worked to rapidly create or expand health IT academic programs at community colleges in the Western region, consisting of Arizona, California, Hawaii, and Nevada. Efforts included educating health IT professionals that facilitated the implementation and support of EHRs.

(No website available)

APPENDIX 6: STATE OF CALIFORNIA HIE: THE LEGACY OF CALIFORNIA'S STATE HIE COOPERATIVE AGREEMENT PROGRAM

State of California HIE
The Legacy of California's
State HIE Cooperative Agreement Program

January 2014

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Look for the video icon throughout this report for
commentary from California HIE leaders.

STATE OF CALIFORNIA HIE I *The Legacy of California's State HIE Cooperative Agreement Program*

CalOHII
State of California
Office of Health
Information Integrity

About the Report

By enabling providers and patients to securely share personal health information electronically, when and where it is needed for care, health information exchange (HIE) holds great promise for improving health care quality, safety, and efficiency in California and nationally. HIE is also a critical component for success of health care reform, public and population health management, patient engagement, and cost control.

In February 2010, the California Health and Human Services Agency was awarded a four-year, $38.8 million federal grant to encourage and fuel adoption of health information exchange throughout the state. Called the State Health Information Exchange Cooperative Agreement Program, the grant was part of the Health Information Technology for Economic and Clinical Health Act (HITECH).

This report highlights the lasting legacy of the unprecedented opportunity offered by the Cooperative Agreement. It is not meant as a comprehensive evaluation of the award's outcomes.[1] Rather, it describes major advancements and achievements in California that will have lasting impact and continue to stimulate HIE in California for years to come.

> The grant set in motion initial efforts necessary to make large-scale health information exchange possible.

[1] An evaluation for ONC of the California State HIE Cooperative Grant Program is being conducted by Robert H. Miller, PhD, Adjunct Professor of Health Economics, UC San Francisco.

1

Background

Although California received the largest Cooperative Agreement grant given to the 50 states, it was clear at the time of the award that it would not be sufficient to solve all the challenges associated with electronic exchange. The $38.8M represented less than .001 percent of what is spent on healthcare in California in a single year. However, the funding was critical to set in motion efforts necessary to initiate large-scale health information exchange.

The grant was awarded to the California Health and Human Services Agency and administered by the **California Office of Health Information Integrity** under the direction of the Deputy Secretary for HIE, who also serves as director of **CalOHII**. To administer much of the grant's programmatic requirements, CalOHII entered into an interagency agreement in mid-2011 with California Health eQuality (**CHeQ**), a program of UC Davis Health System's Institute for Population Health Improvement. Prior to the CHeQ agreement, Cal eConnect, a non-profit organization, was responsible for the programmatic work.

The Cooperative Agreement was not prescriptive as to governance, policy, or technology, giving states the ability to experiment with different models in determining solutions best suited to their particular environment and population.

While some states developed and operated single-solution statewide HIEs, California's size and diversity did not lend itself to one statewide exchange. Further, legislative policy and stakeholder preference called for a model that was limited in scope. The result was a privately driven, publicly assisted HIE infrastructure.

Public assistance through the Cooperative Agreement focused on:
- developing necessary technical and trust standards and agreements;
- providing grants to local health information organizations (HIOs) to expand and improve their operations;
- removing barriers to HIE interoperability;

California created a privately driven and publicly assisted HIE infrastructure.

- coordinating with Medi-Cal and other state and local public health programs to support meaningful use of electronic health records and population health management; and
- convening, educating, and informing HIE stakeholders.

Perhaps the most important stimulus to HIE in California has been the commitment of hundreds of volunteer public and private stakeholders from the California healthcare community, working in collaboration with CHHS. Through committees, work groups, webinars, and statewide summits, these stakeholders have shared ideas and provided feedback, encouragement, and support to each other; they have served as change agents within their own communities and healthcare organizations, encouraging culture change and a focus on patient needs over competitive concerns.

With this context in mind, the following summarizes significant changes and improvements resulting from the HITECH Cooperative Agreement that will have lasting impact on California's healthcare landscape.

Hear more about how California has benefited from the Cooperative Agreement from Pamela Lane, MS, RHIA, CPHIMS, Deputy Secretary Health Information Exchange, California Health and Human Services Agency.

> **Perhaps the most important stimulus to HIE in California has been the commitment of hundreds of volunteer public and private stakeholders.**

Expansion and Strengthening of Community Health Information Organizations

Early in California's quest to make patients' records available electronically, stakeholders voiced a strong preference for a decentralized approach to HIE.[2] Because healthcare is provided at the local level, the prevailing sentiment was that each community is different and should develop systems that best meet their particular needs.

While California hospitals and integrated delivery systems have been steadily building their internal HIE capabilities, at the start of 2009 – a year before the federal grant was awarded – only one community health information organization was operational and three others were in various stages of development. At the end of 2013, eight HIOs were operational and nine were in various stages of development. The growth and strengthening of HIO presence is due in large part to HIE expansion grants provided since 2010 to individual community HIOs. Grants were targeted for HIE planning, infrastructure, innovation, and demonstration projects.

With the end of the federal funding in February 2014, HIOs will continue to evaluate ways to financially sustain themselves while continuing to seek engagement of a critical mass of providers. Communities are finding innovative ways of bringing HIE to local providers and patients. Some communities are choosing to sign on with an established HIO to provide exchange capability, as the San Joaquin HIE has done with the Inland Empire HIE. Others, such as SacValley MedShare, are starting their own HIO backed by committed provider organizations.

[2] California Health Information Strategic and Operational Plan, March 2010

One of the State's top priorities has been to create a trust environment for clinicians to share patient information.

Hear more about the impact of grants on HIO growth and expansion from Robert (Rim) Cothren, PhD, former Technical Director, CHeQ; Executive Director, California Association of Health Information Exchanges.

Watch a visual dramatization of the growth of HIE/HIOs over the past 17 years in California.

Visit **cheqpoint.org** for a snapshot of HIE activity around California.

Creation of a Trusted Environment for Information Sharing

One of California's top priorities has been to create a trust environment for clinicians to share patient information. A "trust framework" is necessary so that physicians and organizations that want to share information within California or nationally can do so, without having to to execute a point-to-point data agreement every time.

A Model Modular Participant Agreement (**MMPA**), developed with assistance from volunteer group of stakeholders, establishes minimum standards to enable both large and small organizations to efficiently set up legal data exchange agreements. While it's not possible to have a one-size-fits-all agreement, the MMPA includes legal agreement essentials necessary for data sharing. One HIO estimated that the model reduced the time for agreement development from seven months to less than two months, with a savings of up to $25,000 in legal expenses.

As part of the Cooperative Agreement grant, CHHS helped launch two organizations that will continue to provide guidance on trust and support working relationships and collaboration among healthcare organizations that need to share health information.

The California Association for Health Information Exchange
CAHIE grew out of a statewide group of community and enterprise HIO leaders -- many working for organizations that are traditionally competitors -- who came together during 2013 to address gaps in interoperability and find solutions to ensuring safe and secure HIE throughout California.

With the support from CalOHII, participants have worked to establish a California trust framework, based on national standards and protocols for trusted exchange, and to create pathways that allow all providers to interoperate using Direct (to push data) and HealtheWay's eHealth Exchange (to query for information providers need).

CAHIE will continue working to establish a light-weight self-governance function for trusted exchange in California and address additional functions members require to achieve a trusted exchange relationship with each other, such as provider directories and patient matching.

National Association for Trusted Exchange
NATE is a national organization created to help state HIE officials establish standards and best practices, including the coordination of policy efforts to support interstate exchange. NATE grew out of the work of the Western States Consortium, of which California was a leading member and piloted interstate exchange with Oregon. As a member of NATE, California continues to provide leadership through identifying policy and governance drivers for interstate information exchange.

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Hear how California's trust environment has evolved since 2010 from Robert (Rim) Cothren, PhD, formerTechnical Director, CHeQ; Executive Director, California Association of Health Information Exchanges.

Privacy & Security Policy Direction Setting

California stakeholders have long been divided over the best way to promote and enhance the electronic movement of health information while still protecting Californians' constitutional right to privacy. Although many stakeholders pressed for legislation that would dictate a single patient consent policy, advancing a legislative solution was not within CalOHII's authority.

To learn more about the impact of different consent policies, CalOHII conducted demonstrations projects with three HIOs. Findings revealed the following: When offered the choice, a large majority of patients elect to share their health information electronically. Both opt-in and opt-out policies are effective means of managing consent when implemented as part of a comprehensive privacy and security framework. The success of a consent management policy depends on numerous factors, including provider engagement, training and education of provider and office staff, patient demographics, and HIE governance.

Both opt-in and opt-out policies have benefits and risks and the model chosen by an HIO and its participants is an individual business decision that reflects the organization's needs and business processes. No matter what the policy, keeping patients well informed about how their information will be shared and used is key.

Hear about the need to change the conversation about consent from CalOHII's Cassandra McTaggart, Chief, Health Information Policy & Standards Division.

It is critically important to change the conversation about consent.

Support for Electronic Health Record Adoption

Electronic health records (EHRs) are fundamental to building the HIE infrastructure. The federal Medicare and Medicaid EHR Incentive Program is aimed at encouraging providers and hospitals to adopt EHRs by offering financial incentives to upgrade or install and progressively use an EHR in a meaningful way. HIE functionality is necessary to demonstrate "meaningful use" at different "stages" of progress.

While the Cooperative Agreement did not directly fund EHRs, it enabled CalOHII to coordinate with the Department of Health Care Services and Regional Extension Centers[3] to leverage and support each other's efforts and help drive EHR adoption and meaningful use of health information technology and HIE.

As of November 2013, more than 10,000 Medi-Cal providers and 216 hospitals were using EHRs and had met meaningful use requirements to qualify for incentive payments totaling about $630 million. More than 28,000 California providers/hospitals participating in Medicare and Medicare Advantage EHR Incentive Programs administered by the federal Centers for Medicare & Medicaid Services (CMS) were using EHRs and had met meaningful use requirements qualifying for over $910 million in payments.

More robust convergence of EHR and HIE adoption is anticipated in the near future with the proposed Stage 3 meaningful use objectives, which require providers to exchange information across unaffiliated organizations and differing EHR technologies.

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[3] There were three regional extension centers (RECs) in California: Health Information Technology Extension Center for Los Angeles (HITEC-LA), serving Los Angeles County, Cal Optima Regional Extension Center (COREC), serving Orange County, California Health Information Partnership and Services Organization (CalHIPSO) serving all counties except LA and Orange. In addition, the California
4 Rural Indian Health Board, which is a sub-grantee of the National Indian Health Board (NIHB) served areas throughout the state.

Investing in improving public health information has long lasting impact for managing public and population health.

Support for Population Health Management: Registries and Gateway

Investing in improving public health information has long lasting impact for managing public and population health, such as tracking immunizations and patients with chronic diseases and cancer.

Among investments made by the Cooperative Agreement was an updated system for the California Department of Public Health (CDPH) to help providers meet meaningful use requirements for electronically submitting immunization data. The new California Immunization Gateway Service replaces a manual process for registering, testing, and submitting immunization data to the California Immunization Registry (CAIR).

Long term, the goal is to develop an integrated, statewide-computerized registry to network each child's full immunization history. The system will ensure that health care providers have rapid access to complete and up-to-date immunization records so they can avoid both missed opportunities to immunize and unnecessary duplicate immunizations.

By design, the technology used for the Immunization Gateway enabled CDPH to develop the Health Information Exchange Gateway, which improved CDPH's capabilities for data exchange, analysis, and reporting. CDPH exchanges data with a wide range of

stakeholders, including clinicians, hospitals, laboratories, local public health jurisdictions, and federal agencies. The Gateway serves as a single point of entry for submitting data to many state public health programs, enabling providers and hospitals to meet meaningful use requirements of the EHR Incentive Program in the short term, and greatly improving efficiency of all submissions in the long term.

Hear more about the impact of the Gateways from Este Geraghty, MD, MPH, MS, Deputy Director, Center for Health Statistics and Informatics, California Department of Public Health.

Related to this effort is Project INSPIRE, based at UC Davis and funded by the Cooperative Agreement through the CHeQ program. The premise of Project INSPIRE is that the same key patient data elements that are useful for registries are also critical for good care of high impact conditions such as cancer. Project INSPIRE focuses on more efficiently and effectively capturing data at the point of care and creating a "health information home" for a longitudinal record "registry" that is accessible to all of a patient's providers.

Inputting data into disease registries has been a challenge with paper records. However, with the widespread adoption of EHRs, key data can be taken directly from the EHR and, with a few intermediate electronic steps, sent to the appropriate registry in nearly real time. Individual care outcomes will improve as clinicians gain a clearer view of their patients' conditions and can better coordinate care. Population health will improve as well when public health officials and researchers have access to de-identified patient data in the registries.

Hear more about the potential of Project INSPIRE from Mike Hogarth, MD, Professor of Pathology & Laboratory Science, School of Medicine, UC Davis.

Reforming the healthcare system and its payment schemes will rely on HIE for collecting, analyzing, and sharing data.

Increased ePrescribing Rates Through Pharmacy Education

California made adoption of electronic exchange of pharmacy data a priority. Increasing the rate of ePrescribing has long-term effects of improved accuracy, efficiency, and patient compliance monitoring.

The Partners in E program was funded to address the challenge of low ePrescribing rates among independent pharmacies. A survey revealed that many pharmacists do not feel technologically prepared to take on the processes of continual electronic communication and to tackle the technical dilemmas presented during the workday.

To drive interest and adoption, an innovative train-the-trainer program was developed. Students from California's eight schools of pharmacy provide one-on-one assistance to independent community pharmacists that serve large numbers of Medi-Cal patients. As of the end of 2013, nearly 1,000 pharmacy students had completed the program.

With its success attracting widespread recognition, Partners in E is collaborating with the Healthcare Information and Management Systems Society (HIMSS) and the American Association of Colleges of Pharmacy (AACP) to fill the critical gap in pharmacy education nationally.

Support for Emergency Medical Services' Adoption of HIE

The transfer of patients from ambulances to emergency rooms is one of the most critical and information-dependent points in healthcare. Hour-old information is considered useless. CalOHII and the State Emergency Medical Services Authority (EMSA) collaborated to make HIE an integral part of California's emergency medical services and enable real-time exchange of patient health information between providers in the field and healthcare facilities.

An environmental assessment funded by the Cooperative Agreement grant found that all the EMS providers that work with the state's 33 local EMS agencies are converting from paper to electronic patient care records. However, most are still in the early stages of being able to electronically transmit information about patients to the hospital where they are being transported. As yet, none are receiving information about patients' conditions after hospital admission, which could assist with care improvement.

The grant helped three local EMS agencies — Contra Costa, Monterey, and Inland Counties Emergency Medical Agency — carry out demonstration projects to advance HIE in their service areas and funded a two-day statewide summit, which sparked collaboration among EMS agencies and EMSA that will continue into the future.

Hear more about the importance of HIE to transforming pre-hospital care in California from Howard Backer, MD, MPH, FACEP, Director of the California Emergency Medical Services Authority (EMSA).

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Support for Helping Patients Electronically Coordinate Their Care

A project funded in part by the Cooperative Agreement and administered by NATE is aimed at ensuring the successful transfer of provider-held medical data into a patient-controlled personal health record. The PHR project is focused on creating trust among providers of the information uploaded from a patient's PHR. This is an important step toward finding ways to speed health information exchange and address physicians' concerns that "patient mediated exchange" may not be complete or accurate. Patient choice to disclose data expedites receipt of the patient's records and simplifies compliance with privacy laws and rules. By making patient medical records more portable, communication can occur faster, patients become more engaged in their care, and they can coordinate their care online across multiple providers.

Support for Healthcare and Payment Reform

A variety of federal and state programs aimed at reforming the healthcare system and its payment schemes will rely on HIE for collecting, analyzing, and sharing data. The list includes Medicare payment reform, quality initiatives, Patient-Centered Medical Homes, Accountable Care Organizations, and Covered California, the state's health insurance exchange.

The HIE infrastructure created under the Cooperative Agreement -- and the timely information HIE will produce -- is critical to the success of two major California health and healthcare improvement initiatives. Governor Jerry Brown's Let's Get Healthy California, launched in December 2012, establishes six major goals and 39 health indicators to track California's progress toward becoming the healthiest state in the nation. California is participating in the State Innovation Models

Initiative, a federally-funded program to plan, design, and test new payment and service delivery models aimed at improving health system and payment performance.

Under healthcare reform, healthcare financing is quickly moving away from fee-for-service and toward payment systems based on performance and value. Both health plans and physician organizations will benefit when data can be securely and easily shared and analyzed, an essential step in "pay for performance" (P4P). Shared data will also be necessary for other performance programs, including CMS's Medicare "Stars," which offers millions of dollars in incentive payments to Medicare Advantage health plans based on meeting performance measures. Through a grant to the Integrated Healthcare Association (IHA), physician organizations and health plans prepared for the new programs by evaluating the use of HIE and Direct query architecture for quality performance measurement and analysis.

Conclusion

It is clear that the HITECH HIE State Cooperative Agreement Program played an essential role in stimulating California's healthcare system's transition from an information poor culture to one in which information is rich, available, and useable. HIE has improved accountability, interdependency, and evidence-based treatment in California. HIE is making it possible to more easily and quickly measure and improve the quality of care. At the heart of every effort is the patient, who has always been the intended beneficiary of HIE.

Hear more about the impact of the HITECH Cooperative Agreement from Linette Scott, MD, MPH, Chief Medical Information Officer, California Department of Health Care Services.

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APPENDIX 7: HIE/HIT POTENTIAL INITIATIVES AND DESCRIPTIONS

Potential Initiatives	Info Recipient	Potential Initiative Description
MyMedi-Cal v2.0	*Members*	Portal to allow members and designees to view their information regarding claims related data and encounter related information (if Managed Care Plan). This is not meant to replace a Provider or Provider Group EHR Portal. For Members who do not have access to an EHR Portal, this allows access only to claims related data and encounter data (as supplied by the Provider). Provides access to review a members own electronic health information for accuracy and completeness.
Medications Reconciliation	*Providers*	Medications Reconciliation initiative would send prescription claims information to the Providers EHR system (for load) or provide a secure portal for the Provider to login and review. The purpose is for Providers to meet MU requirements for the EHR Incentive Program, support care coordination, and be able to verify prescriptions they gave a Member were picked-up.
ProviderMyMedi-Cal	*Providers*	Access to member's information same as Member in the MyMedi-Cal initiative. Information available will be based on paid claims data and encounter data submitted. May provide information to Provider not available in their organization's EHR, such as prior to enrollment member care (based on treatment relationship established per HIPAA).
Provider Care Coordination	*Providers*	Temporary access by non-Medi-Cal providers, with member approval, to ProviderMyMedi-Cal information for that encounter. Will allow for better coordination of care, however does not usurp the Provider's responsibility to provide appropriate information to out of network Provider / Specialist as needed.

Potential Initiatives	Info Recipient	Potential Initiative Description
Rural Provider Support	*Providers*	For counties and rural providers where they do not have EHR systems, provide basic SaaS solution. Allows for gathering of claims, encounter data, CCD records electronically saving manual processing. Increases EHR adoption in low income areas.
CCD Records Information Base	*CHHS and DHCS*	Receive CCD records in ONC C-CDA standard for collection and analysis of information. See CHHS Internal Constituents. Would be used in Initiatives for: MyMedi-Cal, Provider MyMedi-Cal, Provider Care Coordination and Rural Provider Support. CCD information also supports population health and program integrity functions.
Intra CHHS Agency Information Share	*CHHS and DHCS*	Receive available and applicable data for analysis from other departments in CHHS with member or provider Medi-Cal population data. Examples: OSHPD discharge data, CDPH immunization information.
Intra State Agencies Info Share	*CHHS and DHCS*	Information on Providers licensing and status, identify verification from Vital Records, DMV, DOJ Fraud investigation alerts, etc.
Inter State SMAs Info Share	*CHHS and DHCS*	Information on Providers, new Member enrollments / transfers, and shared population data in border areas.
Health Plan Population, Member information	*Health Plans*	Periodic updates (monthly) on Medi-Cal populations in Provider areas, and other information as available.
Health Plan Payments and Financial Information	*Health Plans*	Periodic updates of financial information for Health Plan Organizations.
Plan Requirements Compliance	*Health Plans*	Information on Health Plan Organization's performance and compliance to program requirements: quality of care, completeness and accuracy of CCD records and claims, and other data as identified.

Potential Initiatives	Info Recipient	Potential Initiative Description
Big Data, Analysis and Statistics	*CHHS Internal*	Use of CCD records, claims data, member and provider information for statistical analysis, fraud analysis (member and provider), quality of care, population trending and EHR information as required.
Medi-Cal Program Clinical Data Analysis	*CHHS Internal*	Shared clinical data and analysis with CHHS and CHHS Departments for the Medi-Cal Program.
Intra CHHS Member EHR information exchange	*CHHS Internal*	Cross Department Member (Patient) related ePHI information that is pertinent to improved quality of care and program management.
Federal Governance Reporting and eEHI	*CMS*	Medi-Cal Program Performance, Quality, Financial Forecasts, APDs, MITA SSA, and any other required reporting.
Federal Governance and Reporting	*DHS HIPAA*	HIPAA Compliance reporting. Use of analytics and CCD records for identifying and contributing to Medi-Cal compliance.
Federal Governance Reporting and eEHI	*CDC*	CDC reporting of specific member incidents that fall within CDC requirements. Coordination with CDPH. Examples may include an encounter record or CCD for outside Member's county of residence or State.
Member Case Management and Care Coordination	*Counties and other CA Agencies*	County Program Providers and County Social Services Providers to have access to pertinent information regarding Case Management for Medi-Cal Member. Access through ProviderMyMedi-Cal portal. Includes Medication Reconciliation access as part of initiation roll-out.
Member updates	*Vital Records, DMV, CDPH*	Updates cross Agency on Member deaths and births for audit and cross-reference as well as Public Health episode tracking.

Potential Initiatives	Info Recipient	Potential Initiative Description
Member Transfer to another State (SMA)	*SMA outside CA (State Medicaid Administrator)*	Notification by other SMA of new member enrollment or member transfer (CA in and out identified) to CA Medi-Cal Administration of eligibility transition. DHCS to provide info to current providers through provider portal or EHR system.
Provider Care Transition	*SMA outside CA*	Provider to Provider communication of Member care is primary process. Medi-Cal to provide temporary access to new SMA Provider ProviderMyMedi-Cal for Member as compliant with HIPAA.
Out of State Treatment Encounter	*SMA outside CA*	Temporary access for out of State Provider to ProviderMyMedi-Cal for specific encounter treatment. Requires appropriate authorization, authentication and HIPAA compliance.

APPENDIX 8:   CLINICAL QUALITY MEASURE (CQM) DATA 2012-2016

For CQM definitions and details, please visit the eCQI Resource Center.

Responses where the Denominator equals zero, and/or where Performance Rate is greater than 100% were omitted from these counts. For 2012 and 2013, Performance Rates were manually calculated.

Population performance rate: performance rate for the measure weighted by the number of patients reported by each provider.

Average provider performance rate: average performance rate reported by providers not weighted for the number of patients reported for the measure.

2012 CLINICAL QUALITY MEASURES

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0001	342	27.7	41%	15%
CMS (NA) / NQF 0012	21	135.7	87%	60%
CMS (NA) / NQF 0013	1,215	116.6	88%	89%
CMS (NA) / NQF 0014	4	16.5	100%	100%
CMS (NA) / NQF 0027 - Numerator 1	182	644.3	15%	19%
CMS (NA) / NQF 0027 - Numerator 2	-	-	-	-
CMS (NA) / NQF 0047	423	23.1	78%	79%
CMS (NA) / NQF 0061	600	131.6	42%	46%
CMS (NA) / NQF 0067	12	61.1	69%	63%
CMS (NA) / NQF 0073	17	118.0	63%	74%
CMS (NA) / NQF 0074	9	34.8	85%	84%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0084	2	3.0	33%	33%
CMS (NA) / NQF 0575	239	151.9	23%	27%
CMS 2 / NQF 0418	-	-	-	-
CMS 22 / NQF (NA)	-	-	-	-
CMS 50 / NQF (NA)	-	-	-	-
CMS 52 / NQF 0405 - Population 1	-	-	-	-
CMS 52 / NQF 0405 - Population 2	-	-	-	-
CMS 52 / NQF 0405 - Population 3	-	-	-	-
CMS 56 / NQF (NA)	-	-	-	-
CMS 61 / NQF (NA) - Population 1	-	-	-	-
CMS 61 / NQF (NA) - Population 2	-	-	-	-
CMS 61 / NQF (NA) - Population 3	-	-	-	-
CMS 62 / NQF 0403	-	-	-	-
CMS 64 / NQF (NA) - Population 1	-	-	-	-
CMS 64 / NQF (NA) - Population 2	-	-	-	-
CMS 64 / NQF (NA) - Population 3	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 65 / NQF (NA)	-	-	-	-
CMS 66 / NQF (NA)	-	-	-	-
CMS 68 / NQF 0419	-	-	-	-
CMS 69 / NQF 0421 - Numerator 1	1,247	158.7	44%	47%
CMS 69 / NQF 0421 - Numerator 2	1,530	187.9	40%	40%
CMS 74 / NQF (NA) - Stratum 1	-	-	-	-
CMS 74 / NQF (NA) - Stratum 2	-	-	-	-
CMS 74 / NQF (NA) - Stratum 3	-	-	-	-
CMS 75 / NQF (NA)	-	-	-	-
CMS 77 / NQF (NA)	-	-	-	-
CMS 82 / NQF 1401	-	-	-	-
CMS 90 / NQF (NA)	-	-	-	-
CMS 117 / NQF 0038	-	-	-	-
CMS 117 / NQF 0038 - Immunization 1	417	59.2	58%	51%
CMS 117 / NQF 0038 - Immunization 2	421	55.0	46%	46%
CMS 117 / NQF 0038 - Immunization 3	421	55.1	38%	40%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 117 / NQF 0038 - Immunization 4	420	55.0	43%	36%
CMS 117 / NQF 0038 - Immunization 5	420	55.0	70%	56%
CMS 117 / NQF 0038 - Immunization 6	420	55.0	59%	59%
CMS 117 / NQF 0038 - Immunization 7	420	54.5	64%	58%
CMS 117 / NQF 0038 - Immunization 8	418	54.7	28%	33%
CMS 117 / NQF 0038 - Immunization 9	418	54.7	69%	57%
CMS 117 / NQF 0038 - Immunization 10	416	54.6	59%	46%
CMS 117 / NQF 0038 - Immunization 11	415	54.8	48%	34%
CMS 117 / NQF 0038 - Immunization 12	414	65.2	53%	49%
CMS 122 / NQF 0059	497	146.9	8%	11%
CMS 123 / NQF 0056	88	90.7	33%	26%
CMS 124 / NQF 0032	425	486.4	54%	45%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 125 / NQF 0031	313	275.2	36%	29%
CMS 126 / NQF 0036 - Population 1	411	48.8	47%	59%
CMS 126 / NQF 0036 - Population 2	400	33.8	45%	56%
CMS 126 / NQF 0036 - Population 3	419	74.5	46%	59%
CMS 126 / NQF 0036 - Stratum 1	-	-	-	-
CMS 126 / NQF 0036 - Stratum 2	-	-	-	-
CMS 126 / NQF 0036 - Stratum 3	-	-	-	-
CMS 126 / NQF 0036 - Stratum 4	-	-	-	-
CMS 126 / NQF 0036 - Stratum 5	-	-	-	-
CMS 127 / NQF 0043	132	76.8	44%	49%
CMS 128 / NQF 0105 - Numerator 1	8	16.8	62%	71%
CMS 128 / NQF 0105 - Numerator 2	9	31.4	64%	49%
CMS 129 / NQF 0389	1	38.0	97%	97%
CMS 130 / NQF 0034	131	253.8	24%	25%
CMS 131 / NQF 0055	46	68.6	27%	28%
CMS 132 / NQF 0564	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 133 / NQF 0565	-	-	-	-
CMS 134 / NQF 0062	101	150.3	54%	75%
CMS 135 / NQF 0081	-	-	-	-
CMS 136 / NQF 0108 - Population 1	-	-	-	-
CMS 136 / NQF 0108 - Population 2	-	-	-	-
CMS 137 / NQF 0004 - Population 1 - N	13	95.5	9%	49%
CMS 137 / NQF 0004 - Population 1 - N	12	99.6	5%	23%
CMS 137 / NQF 0004 - Population 2 - N	12	122.8	25%	62%
CMS 137 / NQF 0004 - Population 2 - N	12	122.8	14%	31%
CMS 137 / NQF 0004 - Population 3 - N	12	125.1	26%	62%
CMS 137 / NQF 0004 - Population 3 - N	12	125.1	14%	31%
CMS 138 / NQF 0028 - Numerator 1	1,717	141.0	78%	81%
CMS 138 / NQF 0028 - Numerator 2	1,285	64.8	34%	37%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 139 / NQF 0101	-	-	-	-
CMS 140 / NQF 0387	-	-	-	-
CMS 141 / NQF 0385	-	-	-	-
CMS 142 / NQF 0089	6	43.2	95%	62%
CMS 143 / NQF 0086	6	77.2	95%	80%
CMS 144 / NQF 0083	1	2.0	100%	100%
CMS 145 / NQF 0070 - Population 1	5	32.0	53%	59%
CMS 145 / NQF 0070 - Population 2	-	-	-	-
CMS 146 / NQF 0002	310	26.0	49%	64%
CMS 147 / NQF 0041	95	80.1	25%	22%
CMS 148 / NQF 0060	-	-	-	-
CMS 149 / NQF (NA)	-	-	-	-
CMS 153 / NQF 0033 - Population 1	193	58.3	62%	51%
CMS 153 / NQF 0033 - Population 2	173	31.8	67%	52%
CMS 153 / NQF 0033 - Population 3	174	43.6	64%	53%
CMS 154 / NQF 0069	-	-	-	-
CMS 155 / NQF 0024 - Population 1 - N	648	300.8	82%	80%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 155 / NQF 0024 - Population 1 - N	634	298.7	25%	21%
CMS 155 / NQF 0024 - Population 1 - N	633	295.4	23%	18%
CMS 155 / NQF 0024 - Population 2 - N	591	230.5	77%	78%
CMS 155 / NQF 0024 - Population 2 - N	577	229.0	24%	18%
CMS 155 / NQF 0024 - Population 2 - N	587	225.8	21%	15%
CMS 155 / NQF 0024 - Population 3 - N	630	132.5	69%	77%
CMS 155 / NQF 0024 - Population 3 - N	621	129.9	20%	18%
CMS 155 / NQF 0024 - Population 3 - N	621	129.3	18%	16%
CMS 156 / NQF 0022 - Numerator 1	-	-	-	-
CMS 156 / NQF 0022 - Numerator 2	-	-	-	-
CMS 157 / NQF 0384	-	-	-	-
CMS 158 / NQF 0608	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 159 / NQF 0710	-	-	-	-
CMS 160 / NQF 0712 - Population 1	-	-	-	-
CMS 160 / NQF 0712 - Population 2	-	-	-	-
CMS 160 / NQF 0712 - Population 3	-	-	-	-
CMS 161 / NQF 0104	-	-	-	-
CMS 163 / NQF 0064 - Numerator 1	499	158.1	16%	19%
CMS 163 / NQF 0064 - Numerator 2	494	156.0	8%	12%
CMS 164 / NQF 0068	7	91.1	45%	59%
CMS 165 / NQF 0018	309	139.7	62%	64%
CMS 166 / NQF 0052	47	16.6	95%	96%
CMS 167 / NQF 0088	6	48.0	93%	64%
CMS 169 / NQF 0110	-	-	-	-
CMS 177 / NQF 1365	-	-	-	-
CMS 179 / NQF (NA)	-	-	-	-
CMS 182 / NQF 0075 - Numerator 1	2	69.0	25%	18%
CMS 182 / NQF 0075 - Numerator 2	2	69.0	25%	18%

2013 CLINICAL QUALITY MEASURES

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0001	652	54.7	23%	20%
CMS (NA) / NQF 0012	42	227.7	67%	65%
CMS (NA) / NQF 0013	2555	172.5	84%	92%
CMS (NA) / NQF 0014	8	31.9	65%	61%
CMS (NA) / NQF 0027 - Numerator 1	500	502.0	17%	19%
CMS (NA) / NQF 0027 - Numerator 2	-	-	-	-
CMS (NA) / NQF 0047	617	45.9	68%	77%
CMS (NA) / NQF 0061	1071	135.4	49%	51%
CMS (NA) / NQF 0067	38	27.1	47%	63%
CMS (NA) / NQF 0073	28	52.1	73%	77%
CMS (NA) / NQF 0074	39	18.6	71%	73%
CMS (NA) / NQF 0084	4	5.0	55%	65%
CMS (NA) / NQF 0575	451	139.7	39%	39%
CMS 2 / NQF 0418	-	-	-	-
CMS 22 / NQF (NA)	1	1,961.0	11%	27%
CMS 50 / NQF (NA)	-	-	-	-
CMS 52 / NQF 0405 - Population 1	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 52 / NQF 0405 - Population 2	-	-	-	-
CMS 52 / NQF 0405 - Population 3	-	-	-	-
CMS 56 / NQF (NA)	-	-	-	-
CMS 61 / NQF (NA) - Population 1	-	-	-	-
CMS 61 / NQF (NA) - Population 2	-	-	-	-
CMS 61 / NQF (NA) - Population 3	-	-	-	-
CMS 62 / NQF 0403	-	-	-	-
CMS 64 / NQF (NA) - Population 1	-	-	-	-
CMS 64 / NQF (NA) - Population 2	-	-	-	-
CMS 64 / NQF (NA) - Population 3	-	-	-	-
CMS 65 / NQF (NA)	1	421.0	44%	44%
CMS 66 / NQF (NA)	-	-	-	-
CMS 68 / NQF 0419	2	89,202.0	6%	33%
CMS 69 / NQF 0421 - Numerator 1	2,736	191.0	43%	46%
CMS 69 / NQF 0421 - Numerator 2	3,420	305.9	38%	38%
CMS 74 / NQF (NA) - Stratum 1	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 74 / NQF (NA) - Stratum 2	-	-	-	-
CMS 74 / NQF (NA) - Stratum 3	-	-	-	-
CMS 75 / NQF (NA)	-	-	-	-
CMS 77 / NQF (NA)	-	-	-	-
CMS 82 / NQF 1401	-	-	-	-
CMS 90 / NQF (NA)	-	-	-	-
CMS 117 / NQF 0038	-	-	-	-
CMS 117 / NQF 0038 - Immunization 1	503	87.7	49%	48%
CMS 117 / NQF 0038 - Immunization 2	498	80.9	45%	48%
CMS 117 / NQF 0038 - Immunization 3	498	80.9	53%	54%
CMS 117 / NQF 0038 - Immunization 4	498	80.9	57%	51%
CMS 117 / NQF 0038 - Immunization 5	498	80.9	59%	51%
CMS 117 / NQF 0038 - Immunization 6	499	80.7	59%	63%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 117 / NQF 0038 - Immunization 7	497	80.9	51%	51%
CMS 117 / NQF 0038 - Immunization 8	500	80.3	29%	37%
CMS 117 / NQF 0038 - Immunization 9	498	80.9	60%	54%
CMS 117 / NQF 0038 - Immunization 10	502	80.3	47%	45%
CMS 117 / NQF 0038 - Immunization 11	499	80.0	46%	36%
CMS 117 / NQF 0038 - Immunization 12	498	82.1	45%	39%
CMS 122 / NQF 0059	932	151.3	32%	28%
CMS 123 / NQF 0056	193	94.0	39%	31%
CMS 124 / NQF 0032	831	584.4	56%	48%
CMS 125 / NQF 0031	854	238.8	38%	34%
CMS 126 / NQF 0036 - Population 1	691	81.8	53%	60%
CMS 126 / NQF 0036 - Population 2	696	59.3	51%	58%
CMS 126 / NQF 0036 - Population 3	721	131.9	52%	59%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 126 / NQF 0036 - Stratum 1	-	-	-	-
CMS 126 / NQF 0036 - Stratum 2	-	-	-	-
CMS 126 / NQF 0036 - Stratum 3	-	-	-	-
CMS 126 / NQF 0036 - Stratum 4	-	-	-	-
CMS 126 / NQF 0036 - Stratum 5	-	-	-	-
CMS 127 / NQF 0043	297	112.9	39%	40%
CMS 128 / NQF 0105 - Numerator 1	22	85.7	29%	75%
CMS 128 / NQF 0105 - Numerator 2	22	92.6	21%	69%
CMS 129 / NQF 0389	-	-	-	-
CMS 130 / NQF 0034	394	285.4	29%	23%
CMS 131 / NQF 0055	123	75.2	46%	28%
CMS 132 / NQF 0564	-	-	-	-
CMS 133 / NQF 0565	1	1.0	0%	0%
CMS 134 / NQF 0062	225	129.5	82%	74%
CMS 135 / NQF 0081	1	1.0	100%	100%
CMS 136 / NQF 0108 - Population 1	-	-	-	-
CMS 136 / NQF 0108 - Population 2	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 137 / NQF 0004 - Population 1 - N	15	117.1	24%	37%
CMS 137 / NQF 0004 - Population 1 - N	14	124.2	24%	32%
CMS 137 / NQF 0004 - Population 2 - N	14	124.4	6%	24%
CMS 137 / NQF 0004 - Population 2 - N	14	124.4	5%	16%
CMS 137 / NQF 0004 - Population 3 - N	15	116.2	2%	22%
CMS 137 / NQF 0004 - Population 3 - N	15	116.2	1%	13%
CMS 138 / NQF 0028 - Numerator 1	3,493	234.6	80%	84%
CMS 138 / NQF 0028 - Numerator 2	2,636	81.8	34%	42%
CMS 139 / NQF 0101	-	-	-	-
CMS 140 / NQF 0387	-	-	-	-
CMS 141 / NQF 0385	-	-	-	-
CMS 142 / NQF 0089	2	25.0	2%	50%
CMS 143 / NQF 0086	13	148.6	76%	83%
CMS 144 / NQF 0083	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 145 / NQF 0070 - Population 1	7	10.4	66%	57%
CMS 145 / NQF 0070 - Population 2	-	-	-	-
CMS 146 / NQF 0002	584	39.9	49%	57%
CMS 147 / NQF 0041	108	85.8	11%	16%
CMS 148 / NQF 0060	-	-	-	-
CMS 149 / NQF (NA)	-	-	-	-
CMS 153 / NQF 0033 - Population 1	524	104.7	73%	53%
CMS 153 / NQF 0033 - Population 2	424	61.2	73%	55%
CMS 153 / NQF 0033 - Population 3	397	85.9	78%	60%
CMS 154 / NQF 0069	-	-	-	-
CMS 155 / NQF 0024 - Population 1 - N	1,093	469.6	84%	76%
CMS 155 / NQF 0024 - Population 1 - N	1,076	468.4	41%	30%
CMS 155 / NQF 0024 - Population 1 - N	1,078	560.8	29%	31%
CMS 155 / NQF 0024 - Population 2 - N	931	407.9	79%	73%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 155 / NQF 0024 - Population 2 - N	923	405.6	39%	29%
CMS 155 / NQF 0024 - Population 2 - N	923	390.4	36%	29%
CMS 155 / NQF 0024 - Population 3 - N	1,075	215.9	75%	75%
CMS 155 / NQF 0024 - Population 3 - N	1,061	212.5	35%	29%
CMS 155 / NQF 0024 - Population 3 - N	1,012	213.5	34%	27%
CMS 156 / NQF 0022 - Numerator 1	1	1,391.0	45%	45%
CMS 156 / NQF 0022 - Numerator 2	1	1,391.0	15%	15%
CMS 157 / NQF 0384	-	-	-	-
CMS 158 / NQF 0608	-	-	-	-
CMS 159 / NQF 0710	-	-	-	-
CMS 160 / NQF 0712 - Population 1	-	-	-	-
CMS 160 / NQF 0712 - Population 2	-	-	-	-
CMS 160 / NQF 0712 - Population 3	-	-	-	-
CMS 161 / NQF 0104	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 163 / NQF 0064 - Numerator 1	760	161.3	34%	34%
CMS 163 / NQF 0064 - Numerator 2	752	162.4	20%	21%
CMS 164 / NQF 0068	52	40.8	55%	66%
CMS 165 / NQF 0018	970	127.7	61%	62%
CMS 166 / NQF 0052	54	31.5	99%	94%
CMS 167 / NQF 0088	14	109.2	73%	58%
CMS 169 / NQF 0110	-	-	-	-
CMS 177 / NQF 1365	-	-	-	-
CMS 179 / NQF (NA)	-	-	-	-
CMS 182 / NQF 0075 - Numerator 1	18	29.7	53%	68%
CMS 182 / NQF 0075 - Numerator 2	17	31.4	34%	47%

2014 CLINICAL QUALITY MEASURES

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0001	181	25.3	9%	14%
CMS (NA) / NQF 0012	2	21.5	86%	50%
CMS (NA) / NQF 0013	1,131	86.4	89%	95%
CMS (NA) / NQF 0014	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0027 - Numerator 1	124	663.4	19%	18%
CMS (NA) / NQF 0027 - Numerator 2	124	647.8	10%	12%
CMS (NA) / NQF 0047	131	20.0	80%	87%
CMS (NA) / NQF 0061	620	119.3	40%	48%
CMS (NA) / NQF 0067	71	3.1	86%	95%
CMS (NA) / NQF 0073	89	17.7	61%	82%
CMS (NA) / NQF 0074	3	2.0	67%	83%
CMS (NA) / NQF 0084	2	3.0	83%	90%
CMS (NA) / NQF 0575	255	139.7	25%	29%
CMS 2 / NQF 0418	855	221.4	21%	15%
CMS 22 / NQF (NA)	393	202.5	29%	36%
CMS 50 / NQF (NA)	382	88.1	18%	19%
CMS 52 / NQF 0405 - Population 1	2	75.5	100%	100%
CMS 52 / NQF 0405 - Population 2	-	-	-	-
CMS 52 / NQF 0405 - Population 3	-	-	-	-
CMS 56 / NQF (NA)	1	10.0	100%	100%
CMS 61 / NQF (NA) - Population 1	101	162.8	23%	34%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 61 / NQF (NA) - Population 2	73	48.4	28%	30%
CMS 61 / NQF (NA) - Population 3	141	64.4	35%	24%
CMS 62 / NQF 0403	7	44.4	98%	36%
CMS 64 / NQF (NA) - Population 1	19	62.6	30%	64%
CMS 64 / NQF (NA) - Population 2	21	52.8	40%	68%
CMS 64 / NQF (NA) - Population 3	25	67.7	62%	76%
CMS 65 / NQF (NA)	52	89.9	48%	18%
CMS 66 / NQF (NA)	2	7.0	71%	50%
CMS 68 / NQF 0419	1340	374.0	66%	70%
CMS 69 / NQF 0421 - Numerator 1	2,272	127.0	46%	49%
CMS 69 / NQF 0421 - Numerator 2	2,962	189.3	37%	40%
CMS 74 / NQF (NA) - Stratum 1	335	161.7	7%	11%
CMS 74 / NQF (NA) - Stratum 2	337	112.1	5%	7%
CMS 74 / NQF (NA) - Stratum 3	343	62.3	4%	6%
CMS 75 / NQF (NA)	614	371.3	3%	5%
CMS 77 / NQF (NA)	2	25.5	100%	100%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 82 / NQF 1401	36	32.5	29%	41%
CMS 90 / NQF (NA)	73	31.2	64%	12%
CMS 117 / NQF 0038	700	37.8	27%	22%
CMS 117 / NQF 0038 - Immunization 1	165	67.4	43%	55%
CMS 117 / NQF 0038 - Immunization 2	153	57.9	61%	62%
CMS 117 / NQF 0038 - Immunization 3	153	58.1	63%	64%
CMS 117 / NQF 0038 - Immunization 4	153	57.7	69%	68%
CMS 117 / NQF 0038 - Immunization 5	153	57.7	61%	60%
CMS 117 / NQF 0038 - Immunization 6	153	57.7	70%	72%
CMS 117 / NQF 0038 - Immunization 7	153	57.7	49%	57%
CMS 117 / NQF 0038 - Immunization 8	153	57.7	38%	50%
CMS 117 / NQF 0038 - Immunization 9	153	67.3	55%	69%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 117 / NQF 0038 - Immunization 10	153	67.3	41%	58%
CMS 117 / NQF 0038 - Immunization 11	153	57.7	46%	50%
CMS 117 / NQF 0038 - Immunization 12	153	57.7	41%	46%
CMS 122 / NQF 0059	1,468	97.0	42%	41%
CMS 123 / NQF 0056	376	88.2	29%	22%
CMS 124 / NQF 0032	990	344.6	57%	40%
CMS 125 / NQF 0031	999	169.7	45%	43%
CMS 126 / NQF 0036 - Population 1	144	26.3	47%	54%
CMS 126 / NQF 0036 - Population 2	150	24.7	35%	47%
CMS 126 / NQF 0036 - Population 3	158	50.2	40%	47%
CMS 126 / NQF 0036 - Stratum 1	136	19.1	45%	56%
CMS 126 / NQF 0036 - Stratum 2	118	7.2	58%	55%
CMS 126 / NQF 0036 - Stratum 3	52	12.1	35%	49%
CMS 126 / NQF 0036 - Stratum 4	38	11.3	32%	47%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 126 / NQF 0036 - Stratum 5	187	23.4	60%	51%
CMS 127 / NQF 0043	650	83.2	39%	45%
CMS 128 / NQF 0105 - Numerator 1	38	99.8	13%	59%
CMS 128 / NQF 0105 - Numerator 2	38	101.0	11%	45%
CMS 129 / NQF 0389	1	480.0	0%	0%
CMS 130 / NQF 0034	653	205.3	27%	28%
CMS 131 / NQF 0055	120	104.6	29%	22%
CMS 132 / NQF 0564	9	61.6	0%	11%
CMS 133 / NQF 0565	5	43.6	51%	60%
CMS 134 / NQF 0062	651	69.9	70%	71%
CMS 135 / NQF 0081	9	27.8	74%	89%
CMS 136 / NQF 0108 - Population 1	67	5.6	64%	54%
CMS 136 / NQF 0108 - Population 2	29	7.0	83%	44%
CMS 137 / NQF 0004 - Population 1 - N	2	3.0	33%	20%
CMS 137 / NQF 0004 - Population 1 - N	4	84.8	67%	22%
CMS 137 / NQF 0004 - Population 2 - N	9	80.0	60%	28%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 137 / NQF 0004 - Population 2 - N	9	43.1	49%	27%
CMS 137 / NQF 0004 - Population 3 - N	10	72.7	57%	27%
CMS 137 / NQF 0004 - Population 3 - N	10	74.5	58%	18%
CMS 138 / NQF 0028 - Numerator 1	3,251	139.7	71%	74%
CMS 138 / NQF 0028 - Numerator 2	1,211	44.6	43%	46%
CMS 139 / NQF 0101	50	92.7	32%	24%
CMS 140 / NQF 0387	-	-	-	-
CMS 141 / NQF 0385	-	-	-	-
CMS 142 / NQF 0089	5	361.6	62%	37%
CMS 143 / NQF 0086	13	116.9	42%	61%
CMS 144 / NQF 0083	5	23.2	89%	86%
CMS 145 / NQF 0070 - Population 1	32	5.9	91%	95%
CMS 145 / NQF 0070 - Population 2	6	7.2	88%	81%
CMS 146 / NQF 0002	581	16.7	42%	47%
CMS 147 / NQF 0041	1,505	139.0	37%	31%
CMS 148 / NQF 0060	173	10.3	81%	76%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 149 / NQF (NA)	14	19.0	69%	17%
CMS 153 / NQF 0033 - Population 1	742	33.3	55%	37%
CMS 153 / NQF 0033 - Population 2	517	36.1	58%	38%
CMS 153 / NQF 0033 - Population 3	706	36.2	60%	41%
CMS 154 / NQF 0069	729	58.0	75%	90%
CMS 155 / NQF 0024 - Population 1 - N	1,122	185.4	87%	87%
CMS 155 / NQF 0024 - Population 1 - N	1,091	184.6	30%	27%
CMS 155 / NQF 0024 - Population 1 - N	1,091	179.8	23%	23%
CMS 155 / NQF 0024 - Population 2 - N	1,138	109.6	74%	82%
CMS 155 / NQF 0024 - Population 2 - N	1,109	101.2	27%	23%
CMS 155 / NQF 0024 - Population 2 - N	1,111	104.1	20%	19%
CMS 155 / NQF 0024 - Population 3 - N	1,194	188.4	83%	83%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 155 / NQF 0024 - Population 3 - N	1,161	187.1	28%	25%
CMS 155 / NQF 0024 - Population 3 - N	1,167	187.7	25%	22%
CMS 156 / NQF 0022 - Numerator 1	666	84.3	25%	26%
CMS 156 / NQF 0022 - Numerator 2	648	88.8	14%	13%
CMS 157 / NQF 0384	6	31.7	25%	56%
CMS 158 / NQF 0608	51	58.7	88%	87%
CMS 159 / NQF 0710	2	241.0	42%	21%
CMS 160 / NQF 0712 - Population 1	10	148.7	52%	47%
CMS 160 / NQF 0712 - Population 2	10	136.2	56%	46%
CMS 160 / NQF 0712 - Population 3	4	89.5	11%	15%
CMS 161 / NQF 0104	8	187.9	27%	29%
CMS 163 / NQF 0064 - Numerator 1	891	103.2	22%	26%
CMS 163 / NQF 0064 - Numerator 2	446	155.4	10%	11%
CMS 164 / NQF 0068	548	25.0	72%	74%
CMS 165 / NQF 0018	1,587	131.3	61%	58%
CMS 166 / NQF 0052	335	18.1	44%	76%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 167 / NQF 0088	12	108.6	41%	62%
CMS 169 / NQF 0110	2	108.0	100%	100%
CMS 177 / NQF 1365	17	3.5	7%	6%
CMS 179 / NQF (NA)	1	4.0	75%	75%
CMS 182 / NQF 0075 - Numerator 1	71	40.4	17%	25%
CMS 182 / NQF 0075 - Numerator 2	70	37.0	12%	16%

2015 CLINICAL QUALITY MEASURES

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0001	-	-	-	-
CMS (NA) / NQF 0012	-	-	-	-
CMS (NA) / NQF 0013	-	-	-	-
CMS (NA) / NQF 0014	-	-	-	-
CMS (NA) / NQF 0027 - Numerator 1	-	-	-	-
CMS (NA) / NQF 0027 - Numerator 2	-	-	-	-
CMS (NA) / NQF 0047	-	-	-	-
CMS (NA) / NQF 0061	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0067	-	-	-	-
CMS (NA) / NQF 0073	-	-	-	-
CMS (NA) / NQF 0074	-	-	-	-
CMS (NA) / NQF 0084	-	-	-	-
CMS (NA) / NQF 0575	-	-	-	-
CMS 2 / NQF 0418	1156	231.7	20%	17%
CMS 22 / NQF (NA)	865	213.2	33%	40%
CMS 50 / NQF (NA)	772	72.0	31%	18%
CMS 52 / NQF 0405 - Population 1	-	-	-	-
CMS 52 / NQF 0405 - Population 2	-	-	-	-
CMS 52 / NQF 0405 - Population 3	-	-	-	-
CMS 56 / NQF (NA)	5	1.8	56%	53%
CMS 61 / NQF (NA) - Population 1	219	87.1	46%	37%
CMS 61 / NQF (NA) - Population 2	195	68.8	30%	23%
CMS 61 / NQF (NA) - Population 3	238	145.0	35%	38%
CMS 62 / NQF 0403	17	76.4	34%	29%
CMS 64 / NQF (NA) - Population 1	146	31.5	68%	58%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 64 / NQF (NA) - Population 2	159	22.6	76%	70%
CMS 64 / NQF (NA) - Population 3	180	74.0	89%	91%
CMS 65 / NQF (NA)	100	56.4	27%	20%
CMS 66 / NQF (NA)	3	50.0	2%	67%
CMS 68 / NQF 0419	2,575	466.9	72%	72%
CMS 69 / NQF 0421 - Numerator 1	1,450	112.5	42%	47%
CMS 69 / NQF 0421 - Numerator 2	1,935	189.8	39%	42%
CMS 74 / NQF (NA) - Stratum 1	229	173.3	18%	30%
CMS 74 / NQF (NA) - Stratum 2	227	105.9	23%	31%
CMS 74 / NQF (NA) - Stratum 3	238	69.5	16%	20%
CMS 75 / NQF (NA)	814	314.9	6%	9%
CMS 77 / NQF (NA)	4	103.5	75%	76%
CMS 82 / NQF 1401	44	35.4	25%	32%
CMS 90 / NQF (NA)	99	8.5	24%	8%
CMS 117 / NQF 0038	848	32.8	23%	21%
CMS 117 / NQF 0038 - Immunization 1	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 117 / NQF 0038 - Immunization 2	-	-	-	-
CMS 117 / NQF 0038 - Immunization 3	-	-	-	-
CMS 117 / NQF 0038 - Immunization 4	-	-	-	-
CMS 117 / NQF 0038 - Immunization 5	-	-	-	-
CMS 117 / NQF 0038 - Immunization 6	-	-	-	-
CMS 117 / NQF 0038 - Immunization 7	-	-	-	-
CMS 117 / NQF 0038 - Immunization 8	-	-	-	-
CMS 117 / NQF 0038 - Immunization 9	-	-	-	-
CMS 117 / NQF 0038 - Immunization 10	-	-	-	-
CMS 117 / NQF 0038 - Immunization 11	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 117 / NQF 0038 - Immunization 12	-	-	-	-
CMS 122 / NQF 0059	1,458	66.3	65%	73%
CMS 123 / NQF 0056	248	69.6	26%	23%
CMS 124 / NQF 0032	1,314	216.9	30%	33%
CMS 125 / NQF 0031	1,296	115.3	44%	39%
CMS 126 / NQF 0036 - Population 1	-	-	-	-
CMS 126 / NQF 0036 - Population 2	-	-	-	-
CMS 126 / NQF 0036 - Population 3	-	-	-	-
CMS 126 / NQF 0036 - Stratum 1	211	19.4	51%	59%
CMS 126 / NQF 0036 - Stratum 2	182	10.4	50%	60%
CMS 126 / NQF 0036 - Stratum 3	78	13.6	49%	53%
CMS 126 / NQF 0036 - Stratum 4	60	14.8	50%	61%
CMS 126 / NQF 0036 - Stratum 5	315	24.8	54%	61%
CMS 127 / NQF 0043	843	75.8	50%	52%
CMS 128 / NQF 0105 - Numerator 1	17	16.1	27%	66%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 128 / NQF 0105 - Numerator 2	17	16.1	26%	69%
CMS 129 / NQF 0389	1	100.0	100%	100%
CMS 130 / NQF 0034	859	161.7	25%	24%
CMS 131 / NQF 0055	125	74.2	25%	23%
CMS 132 / NQF 0564	10	46.5	7%	30%
CMS 133 / NQF 0565	4	86.5	92%	92%
CMS 134 / NQF 0062	817	64.4	76%	72%
CMS 135 / NQF 0081	34	6.5	79%	79%
CMS 136 / NQF 0108 - Population 1	87	12.2	28%	51%
CMS 136 / NQF 0108 - Population 2	34	19.2	17%	50%
CMS 137 / NQF 0004 - Population 1 - N	4	2.5	40%	50%
CMS 137 / NQF 0004 - Population 1 - N	4	2.5	10%	25%
CMS 137 / NQF 0004 - Population 2 - N	6	4.3	31%	36%
CMS 137 / NQF 0004 - Population 2 - N	6	4.3	4%	17%
CMS 137 / NQF 0004 - Population 3 - N	7	4.6	34%	40%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 137 / NQF 0004 - Population 3 - N	8	5.0	3%	13%
CMS 138 / NQF 0028 - Numerator 1	2,901	155.0	72%	73%
CMS 138 / NQF 0028 - Numerator 2	-	-	-	-
CMS 139 / NQF 0101	420	58.6	47%	45%
CMS 140 / NQF 0387	1	1.0	100%	0%
CMS 141 / NQF 0385	-	-	-	-
CMS 142 / NQF 0089	11	128.6	90%	60%
CMS 143 / NQF 0086	16	70.5	64%	57%
CMS 144 / NQF 0083	5	28.8	28%	41%
CMS 145 / NQF 0070 - Population 1	10	15.7	52%	57%
CMS 145 / NQF 0070 - Population 2	11	13.5	60%	70%
CMS 146 / NQF 0002	579	13.3	37%	53%
CMS 147 / NQF 0041	2,052	150.3	36%	37%
CMS 148 / NQF 0060	126	13.4	73%	67%
CMS 149 / NQF (NA)	10	10.4	36%	35%
CMS 153 / NQF 0033 - Population 1	677	16.6	53%	39%
CMS 153 / NQF 0033 - Population 2	416	27.0	49%	44%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 153 / NQF 0033 - Population 3	702	58.9	44%	40%
CMS 154 / NQF 0069	926	57.1	70%	92%
CMS 155 / NQF 0024 - Population 1 - N	901	173.1	86%	84%
CMS 155 / NQF 0024 - Population 1 - N	896	170.9	19%	19%
CMS 155 / NQF 0024 - Population 1 - N	891	172.6	18%	18%
CMS 155 / NQF 0024 - Population 2 - N	980	76.1	80%	82%
CMS 155 / NQF 0024 - Population 2 - N	974	74.0	20%	18%
CMS 155 / NQF 0024 - Population 2 - N	968	72.8	22%	17%
CMS 155 / NQF 0024 - Population 3 - N	1,089	207.3	86%	80%
CMS 155 / NQF 0024 - Population 3 - N	1,083	207.3	20%	19%
CMS 155 / NQF 0024 - Population 3 - N	1,079	203.6	19%	17%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 156 / NQF 0022 - Numerator 1	1,225	74.2	19%	22%
CMS 156 / NQF 0022 - Numerator 2	1,219	74.1	7%	7%
CMS 157 / NQF 0384	8	303.1	76%	69%
CMS 158 / NQF 0608	38	62.1	89%	84%
CMS 159 / NQF 0710	-	-	-	-
CMS 160 / NQF 0712 - Population 1	38	36.2	23%	31%
CMS 160 / NQF 0712 - Population 2	26	34.0	21%	30%
CMS 160 / NQF 0712 - Population 3	38	34.5	25%	27%
CMS 161 / NQF 0104	3	28.7	90%	31%
CMS 163 / NQF 0064 - Numerator 1	376	59.3	26%	24%
CMS 163 / NQF 0064 - Numerator 2	-	-	-	-
CMS 164 / NQF 0068	531	24.4	67%	70%
CMS 165 / NQF 0018	2,058	104.1	59%	55%
CMS 166 / NQF 0052	555	16.1	52%	64%
CMS 167 / NQF 0088	13	68.8	85%	68%
CMS 169 / NQF 0110	1	87.0	20%	20%
CMS 177 / NQF 1365	23	8.6	34%	20%
CMS 179 / NQF (NA)	1	5.0	1,800%	5%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 182 / NQF 0075 - Numerator 1	120	73.4	41%	38%
CMS 182 / NQF 0075 - Numerator 2	118	71.8	18%	25%

2016 CLINICAL QUALITY MEASURES (DATA THROUGH 4/27/17)

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0001	-	-	-	-
CMS (NA) / NQF 0012	-	-	-	-
CMS (NA) / NQF 0013	-	-	-	-
CMS (NA) / NQF 0014	-	-	-	-
CMS (NA) / NQF 0027 - Numerator 1	-	-	-	-
CMS (NA) / NQF 0027 - Numerator 2	-	-	-	-
CMS (NA) / NQF 0047	-	-	-	-
CMS (NA) / NQF 0061	-	-	-	-
CMS (NA) / NQF 0067	-	-	-	-
CMS (NA) / NQF 0073	-	-	-	-
CMS (NA) / NQF 0074	-	-	-	-
CMS (NA) / NQF 0084	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS (NA) / NQF 0575	-	-	-	-
CMS 2 / NQF 0418	897	282.7	17%	19%
CMS 22 / NQF (NA)	591	289.8	37%	42%
CMS 50 / NQF (NA)	526	73.6	24%	18%
CMS 52 / NQF 0405 - Population 1	-	-	-	-
CMS 52 / NQF 0405 - Population 2	-	-	-	-
CMS 52 / NQF 0405 - Population 3	-	-	-	-
CMS 56 / NQF (NA)	2	2.0	25%	17%
CMS 61 / NQF (NA) - Population 1	228	92.3	27%	28%
CMS 61 / NQF (NA) - Population 2	227	62.1	16%	18%
CMS 61 / NQF (NA) - Population 3	263	176.0	36%	40%
CMS 62 / NQF 0403	18	3.3	27%	34%
CMS 64 / NQF (NA) - Population 1	171	29.2	44%	49%
CMS 64 / NQF (NA) - Population 2	167	18.3	50%	65%
CMS 64 / NQF (NA) - Population 3	189	91.5	71%	84%
CMS 65 / NQF (NA)	46	46.7	21%	18%
CMS 66 / NQF (NA)	1	8.0	0%	0%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 68 / NQF 0419	2,194	517.9	75%	78%
CMS 69 / NQF 0421 - Numerator 1	956	166.9	45%	50%
CMS 69 / NQF 0421 - Numerator 2	1,558	164.5	44%	47%
CMS 74 / NQF (NA) - Stratum 1	148	186.4	26%	33%
CMS 74 / NQF (NA) - Stratum 2	158	118.1	22%	28%
CMS 74 / NQF (NA) - Stratum 3	149	86.4	20%	24%
CMS 75 / NQF (NA)	615	324.3	7%	10%
CMS 77 / NQF (NA)	1	1.0	0%	0%
CMS 82 / NQF 1401	9	74.4	1%	2%
CMS 90 / NQF (NA)	63	3.3	8%	10%
CMS 117 / NQF 0038	874	28.7	22%	18%
CMS 117 / NQF 0038 - Immunization 1	-	-	-	-
CMS 117 / NQF 0038 - Immunization 2	-	-	-	-
CMS 117 / NQF 0038 - Immunization 3	-	-	-	-
CMS 117 / NQF 0038 - Immunization 4	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 117 / NQF 0038 - Immunization 5	-	-	-	-
CMS 117 / NQF 0038 - Immunization 6	-	-	-	-
CMS 117 / NQF 0038 - Immunization 7	-	-	-	-
CMS 117 / NQF 0038 - Immunization 8	-	-	-	-
CMS 117 / NQF 0038 - Immunization 9	-	-	-	-
CMS 117 / NQF 0038 - Immunization 10	-	-	-	-
CMS 117 / NQF 0038 - Immunization 11	-	-	-	-
CMS 117 / NQF 0038 - Immunization 12	-	-	-	-
CMS 122 / NQF 0059	1,173	64.6	61%	64%
CMS 123 / NQF 0056	415	67.4	22%	24%
CMS 124 / NQF 0032	1,111	184.2	37%	34%
CMS 125 / NQF 0031	1,083	98.6	52%	48%
CMS 126 / NQF 0036 - Population 1	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 126 / NQF 0036 - Population 2	-	-	-	-
CMS 126 / NQF 0036 - Population 3	-	-	-	-
CMS 126 / NQF 0036 - Stratum 1	194	17.3	42%	52%
CMS 126 / NQF 0036 - Stratum 2	160	11.0	39%	54%
CMS 126 / NQF 0036 - Stratum 3	87	13.1	26%	52%
CMS 126 / NQF 0036 - Stratum 4	70	15.6	16%	37%
CMS 126 / NQF 0036 - Stratum 5	222	20.7	54%	61%
CMS 127 / NQF 0043	709	84.6	53%	54%
CMS 128 / NQF 0105 - Numerator 1	55	17.2	46%	73%
CMS 128 / NQF 0105 - Numerator 2	54	21.1	49%	67%
CMS 129 / NQF 0389	1	95.0	0%	0%
CMS 130 / NQF 0034	490	180.7	29%	26%
CMS 131 / NQF 0055	101	111.5	45%	37%
CMS 132 / NQF 0564	11	59.8	5%	2%
CMS 133 / NQF 0565	12	89.3	77%	69%
CMS 134 / NQF 0062	737	66.9	77%	74%
CMS 135 / NQF 0081	16	11.3	86%	80%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 136 / NQF 0108 - Population 1	78	8.7	30%	54%
CMS 136 / NQF 0108 - Population 2	64	6.1	20%	31%
CMS 137 / NQF 0004 - Population 1 - N	6	12.3	16%	17%
CMS 137 / NQF 0004 - Population 1 - N	6	12.3	15%	13%
CMS 137 / NQF 0004 - Population 2 - N	10	10.8	17%	13%
CMS 137 / NQF 0004 - Population 2 - N	10	10.0	11%	9%
CMS 137 / NQF 0004 - Population 3 - N	9	10.4	18%	13%
CMS 137 / NQF 0004 - Population 3 - N	9	10.4	11%	7%
CMS 138 / NQF 0028 - Numerator 1	2,225	168.5	77%	80%
CMS 138 / NQF 0028 - Numerator 2	-	-	-	-
CMS 139 / NQF 0101	416	90.6	47%	52%
CMS 140 / NQF 0387	-	-	-	-
CMS 141 / NQF 0385	-	-	-	-

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 142 / NQF 0089	13	124.1	67%	76%
CMS 143 / NQF 0086	22	126.8	64%	66%
CMS 144 / NQF 0083	7	9.3	83%	95%
CMS 145 / NQF 0070 - Population 1	6	56.5	87%	60%
CMS 145 / NQF 0070 - Population 2	4	109.5	86%	46%
CMS 146 / NQF 0002	369	12.1	41%	55%
CMS 147 / NQF 0041	1,620	158.4	39%	37%
CMS 148 / NQF 0060	123	20.8	53%	63%
CMS 149 / NQF (NA)	9	23.6	17%	45%
CMS 153 / NQF 0033 - Population 1	530	18.6	44%	32%
CMS 153 / NQF 0033 - Population 2	320	30.8	49%	40%
CMS 153 / NQF 0033 - Population 3	572	38.5	55%	36%
CMS 154 / NQF 0069	742	69.8	76%	90%
CMS 155 / NQF 0024 - Population 1 - N	669	170.6	87%	87%
CMS 155 / NQF 0024 - Population 1 - N	666	164.7	22%	20%
CMS 155 / NQF 0024 - Population 1 - N	667	173.8	22%	18%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 155 / NQF 0024 - Population 2 - N	706	92.3	81%	83%
CMS 155 / NQF 0024 - Population 2 - N	699	87.4	27%	22%
CMS 155 / NQF 0024 - Population 2 - N	696	94.2	26%	21%
CMS 155 / NQF 0024 - Population 3 - N	777	217.1	86%	84%
CMS 155 / NQF 0024 - Population 3 - N	771	213.8	23%	20%
CMS 155 / NQF 0024 - Population 3 - N	770	219.7	22%	19%
CMS 156 / NQF 0022 - Numerator 1	757	108.8	12%	15%
CMS 156 / NQF 0022 - Numerator 2	733	107.3	5%	6%
CMS 157 / NQF 0384	1	986.0	65%	64%
CMS 158 / NQF 0608	26	18.7	76%	83%
CMS 159 / NQF 0710	4	68.3	9%	5%
CMS 160 / NQF 0712 - Population 1	50	40.2	33%	30%
CMS 160 / NQF 0712 - Population 2	26	62.1	35%	41%

Clinical Quality Measures	# Providers Reporting	Avg. # Patients Reported	Population Performance Rate	Average Provider Performance Rate
CMS 160 / NQF 0712 - Population 3	48	41.1	34%	30%
CMS 161 / NQF 0104	26	20.2	21%	28%
CMS 163 / NQF 0064 - Numerator 1	319	75.1	31%	31%
CMS 163 / NQF 0064 - Numerator 2	-	-	-	-
CMS 164 / NQF 0068	384	36.7	73%	74%
CMS 165 / NQF 0018	1,469	171.8	46%	58%
CMS 166 / NQF 0052	494	17.1	49%	84%
CMS 167 / NQF 0088	41	45.1	56%	20%
CMS 169 / NQF 0110	16	13.4	29%	19%
CMS 177 / NQF 1365	16	13.3	31%	5%
CMS 179 / NQF (NA)	3	336.7	15%	57%
CMS 182 / NQF 0075 - Numerator 1	75	83.4	12%	26%
CMS 182 / NQF 0075 - Numerator 2	75	83.6	11%	21%

APPENDIX 9:   VISION FOR EHR ADOPTION BY MEDI-CAL PROVIDERS

December 2009

Overview of the HITECH EHR Incentive Program

Congress has appropriated $46.8 billion in Health Information Technology for Economic and Clinical Health Act (HITECH), a component of the American Reinvestment and Recovery Act (ARRA), to encourage Medicaid and Medicare providers, hospitals, and clinics to adopt and become meaningful users of electronic health records (EHRs.) The infusion of new funding towards EHRs represents a tremendous opportunity to improve the quality, safety, and efficacy of health care.

The bulk of this funding will support incentive payments for Medicare and Medicaid providers who meet certain criteria for patient volume and who demonstrate "meaningful use" of the new technology. Criteria for meaningful use and provider eligibility are currently being defined by The Centers for Medicare & Medicaid Services (CMS), and further guidance will be provided. Program components outlined to date include:

- Providers may only participate in either the Medicare or Medicaid incentive program.
- A single provider can receive up to $63,750 in Medi-Cal incentives over five years.
- Providers must become "meaningful users" of EHRs based on criteria currently under development by CMS (Medicare) and the states (Medicaid). Goals of meaningful use will likely include improving the quality, safety, efficiency, and reduce health disparities; engaging patients and families; improving care coordination; improving population and public health data; and ensuring adequate privacy and security protections for personal health information. Specific requirements include the capability to exchange electronic health information, electronic prescribing for office-based physicians, and the submission of information on clinical quality and other measure.[1001]
- The first EHR incentive payments may be issued in 2011.

As the state agency charged with administering Medicaid payments, the California Department of Health Care Services (DHCS) is poised to play a significant role in the new

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[100] "American Recovery and Reinvestment Act of 2009." *Wikipedia: The Free Encyclopedia* Wikimedia Foundation, Inc. Last modified: November 18, 2010. Date accessed: November 22, 2010.

EHR initiative. The DHCS is currently in the process of planning for this EHR Incentive program, and as of December 2009, has created a vision for the use of ARRA funds to increase adoption and meaningful use of EHRs among Medi-Cal providers.

Introduction to the Vision

This document contains the overall vision for the use of ARRA funds to increase adoption and meaningful use of EHRs among Medi-Cal providers in California.

The vision is ambitious. It is intended to inspire action by the DHCS, which will provide leadership for this effort, and by a broad set of stakeholders – health care providers, payers, government entities, legislators, and the people of California – who will share in the benefits of EHR adoption and meaningful use and who have a shared responsibility to ensure its success.

The DHCS will provide leadership and rely upon stakeholders to realize this vision. This effort will also be closely coordinated with other Health IT-related projects and programs in the State of California.

The structure we have adopted for this vision is the meaningful use framework proposed by the HIT Policy Committee, thus ensuring all the planning efforts will be aligned with national requirements. This vision will be used to guide detailed strategic and implementation planning by the DHCS, and as well as provide guidance for other stakeholder planning efforts.

Process to Date: Crafting the Vision

This vision was created by the DHCS in partnership with the California HealthCare Foundation and with assistance from FSG Social Impact Advisors. In developing the vision, FSG spoke with over 100 stakeholders including DHCS senior leadership, staff from 16 DHCS divisions, staff from six other departments of the California Health and Human Services Agency, and over 65 external stakeholders from provider, payer, and consumer communities.

A draft vision was vetted at an in-person Visioning Session that was attended by 38 individuals from multiple stakeholder groups and the DHCS and then revised during a comment period for vision session participants and all external stakeholders interviewed during the visioning process.

Next Steps: Creating the DHCS Strategic and Implementation Plan

The DHCS has engaged The Lewin Group and McKinsey & Company to lead Phase II of the EHR Incentive Payment Program planning process. The work of Phase II begins with a landscape assessment of California providers and EHR vendors. The landscape assessment will be followed by the development an incentive payment program plan with three components:

- Strategic plan: define program components and performance targets
- Campaign plan: approach to increasing awareness of the EHR incentive payment program
- Implementation plan: detailed guidance on implementing the incentive payment program

The strategic and implementation plan will use the vision as a guide but will focus specifically on the next five years for the EHR incentive program and DHCS activities. The Lewin Group and McKinsey & Company will continue to engage stakeholders throughout the secondary planning process and project implementation phase. The DHCS will establish a Health Enterprise Steering Committee and will ensure stakeholders continue to be engaged through current or newly established workgroups, webinars, and monthly updates.

The Vision

The Promise of the Electronic Health Records

Electronic Health Records are a key enabling technology for improving the quality, safety, and efficiency of the health care system. In creating the vision for the Medicaid incentive program, the DHCS is cognizant of the ultimate goals for promoting the adoption of this technology, as defined by the HIT Policy Committee:

- Improve quality, safety, and efficiency and reduce health disparities
- Engage patients and families
- Improve care coordination
- Improve population and public health
- Ensure adequate privacy and security protections for personal health information

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Vision for the EHR Incentive Program

The health and wellbeing of all Californians will be dramatically improved by the widespread adoption and use of Electronic Health Records.

Vision Element 1: Provider EHR Adoption

Goals for Provider EHR Adoption

1.1 By March 2011 the Medi-Cal EHR Incentive Program Provider Portal will be operational and accepting information from the National Level Registry and from practitioners and hospitals.

1.2 By March 2011, all Medi-Cal practitioners and hospitals will have received information about eligibility requirements for the EHR Incentive Program and how to apply for participation.

1.3 By May 2011, the Medi-Cal EHR Incentive Program will have begun issuing incentive payments to practitioners and hospitals.

1.4 By December 31, 2011, 100% of practitioners and hospitals receiving Medi-Cal EHR Incentive Program funding will have received information and training in using their EHRs to achieve meaningful use.

1.5 By December 31, 2011, at least 50% of Medi-Cal practitioners and hospitals eligible for Medi-Cal EHR Incentive Program funds will have applied for and been awarded funding for adopting, implementing, or upgrading an EHR.

1.6 By December 31, 2013, 60% of Medi-Cal practitioners and 70% of hospitals receiving funding in 2011 will have achieved meaningful use and received funding for that accomplishment.

1.7 By 2015, 90% of Medi-Cal providers eligible for incentive payments will have adopted EHRs for meaningful use in their practices. The EHRs adopted are secure, interoperable, and certified.

Vision Element 2: Improve Quality, Safety, and Efficiency and Reduce Health Disparities

2.1 By 2015, 90% of Medi-Cal providers will have implemented clinical decision support tools within their EHRs. These tools are intelligent and initially target 3-4 conditions that are prevalent, costly, and drivers of high morbidity and mortality.

2.2 By 2013, statewide provider performance standards are used to improve health outcomes. These standards will increase quality and safety, reduce health disparities,

and incentivize medical homes for Medi-Cal patients.

2.3 The use of EHRs results in cost efficiencies for payers by 2015 and 90% of Medi-Cal providers by 2018. These savings will be generated through administrative and clinical process improvements enabled by EHRs.

Vision Element 3: Engage Patients and Families

3.1 All patients of Medi-Cal providers with EHRs will have electronic access to their Personal Health Record (PHR) and self-management tools by 2015. Patient tools are affordable, actionable, culturally and linguistically appropriate, and accessible through widely available technologies. The PHR and self-management tools enable patients to communicate with their providers.

Vision Element 4: Improve Care Coordination

4.1 By 2013, upon EHR adoption, Medi-Cal providers and patients are able to use available electronic information from patients' other clinical providers to make informed health care decisions at the point of care. Data will be standardized and integrated across providers.

4.2 By 2013, key partners will share information with eligible providers upon adoption of EHRs to ensure full access to health data. These partners include labs, pharmacies, and radiology facilities.

Vision Element 5: Improve Population and Public Health

Goals for Improving Population and Public Health

5.1 By 2013, patient and population health data from EHRs will be shared bi-directionally between providers the DHCS, the Department of Public Health, the Office of Statewide Health Planning and Development, and other approved institutions to support the essential functions of public health, and to inform the effectiveness, quality, access, and cost of care.

5.2 By December 31, 2014, a portable, EHR-based health record will have been developed and tested for California's foster children.

5.3 By December 31, 2014, an interoperable EHR for medical and behavioral health will have been developed and tested for California's mental health population.

5.4 By December 31, 2014, a continuity of care document that includes behavioral health will have been developed and tested for California's mental health population.

5.5 By December 31, 2014 pilot the inclusion of behavior health information in a regional HIE.

5.6 De-identified data collected from EHRs is used to publicly report on trends in the quality of care provided to Medi-Cal beneficiaries by 2015. Consumers should be educated about the findings from such reports. References to Medi-Cal providers throughout the Vision refer to Medi-Cal providers eligible for ARRA incentive payments

5.7 By December 31, 2015, 90% of independent pharmacies in California will be connected to an e-Prescribing network.

5.8 By December 31, 2015, 80% of community clinics will have fully implemented certified EHRs.

5.9 By December 31, 2015, 50% of providers in California will be able to electronically transmit immunization information to an immunization registry.

5.10 By December 31, 2015, 90% of hospital, regional, and public health laboratories will be able to electronically transmit laboratory results to providers.

5.11 By December 31, 2015, 80% of providers and hospitals will be able to transmit reportable disease and syndromic surveillance information to the local and State public health departments

Vision Element 6: Ensure Adequate Privacy and Security Protections for Personal Health Information

6.1 By 2011, the state will ensure that Medi-Cal beneficiaries, on request, have electronic access to their Health Information Exchange disclosures.

6.2 By 2011, California will establish policies that balance protection of patient privacy with the appropriate sharing of health information. Such policies will be consistent with national requirements and will protect health information accessed by providers, payers, other California public agencies, and other states. Policies apply to data in EHRs, PHRs, and health information exchange.

APPENDIX 10: CALIFORNIA'S PREVIOUS 5-YEAR PLAN (2011-2016)

In January 2010, the DHCS convened a statewide group of experts to design the vision for the Medi-Cal EHR Incentive Program (Appendix 9). The vision elements defined by this group were written before the Final Rule was adopted and were ambitious and set an aggressive agenda for successful achievement of MU criteria by Medi-Cal providers. The original vision elements are listed below, followed by an update on the progress made towards meeting those goals:

- By 2011, the state will ensure that Medi-Cal beneficiaries, on request, have access to their HIE disclosures.

    - *The DHCS responds to member requests for an accounting of disclosures by the DHCS of a member's protected health information. DHCS uses Business Associate Agreements (BAAs) to help manage the accounting of disclosures required under federal law; the BAAs obligate health plans under contract with DHCS to account for disclosures. Since the DHCS does not directly exchange health information with any of the state Health Information Organizations (HIOs), disclosures by an HIO are not managed by DHCS. The California Data Use and Reciprocal Support Agreement (CalDURSA) obligates all participating California HIOs to abide by HIPAA's Accounting of Disclosure requirements. DHCS' CTAP program provides milestone payments to contractors who provide technical assistance to providers who enroll with an HIO that is a CalDURSA signatory (see Section 1.8). Please note, however, that the HIPAA accounting of disclosure provisions do not apply to payment, treatment, or operations, the main purpose of HIE.*

- By 2011, California will establish policies that balance protection of patient privacy with the appropriate sharing of health information

    - *The CalDURSA, created in 2014, was modeled after the Federal DURSA and serves as a multi-party trust agreement for HIE that allows all signatories to interoperate using recognized standards. As of March 2017, 13 HIOs are signatories of the CalDURSA. In addition to the federal laws relating to patient privacy, and the CalDURSA, existing state laws further protect patients[101].*

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[101] California Health & Human Services Agency, Federal and State Health Laws. Accessed on April 25, 2018

- By 2013, statewide provider performance standards are used to improve health outcomes.

  - *The DHCS Quality Strategy (2012-2017)[102] was developed using the National Strategy for Quality Improvement in Health Care (NQS) as a foundation for improving population health and health care in all departmental programs.*

  - *California monitors the performance of Medi-Cal contracted health plans using HEDIS and Consumer Assessment of Healthcare Providers and Systems (CAHPS). DHCS' Managed Care Quality and Monitoring Division (MCQMD) produces the Managed Care Performance Dashboard that contains comprehensive data on a variety of measures including enrollment, health care utilization, appeals and grievances, network adequacy, and quality of care. Information contained in the Dashboard assists DHCS and its stakeholders in observing and understanding managed care plan (MCP) performance statewide, by plan model, and by MCP. These Managed Care Performance Dashboards are produced quarterly[103].*

- By 2013, patient and population health data from EHRs will be shared bi-directionally between providers, California's Departments of Health Care Services and Public Health, OSHPD and other approved institutions to support the essential functions of public health for effective quality, access and cost of care.

  - *Many of California's HIOs have the ability to share information bi-directionally between providers who are HIO participants (see Section 1.12). Currently, public health registries are only able to accept data, however as of late 2017, CAIR 2.0 is capable of bi-directional data sharing in compliance with MU requirements.*

- By 2015, 90% of Medi-Cal providers eligible for Incentive Payments will have adopted certified EHRs for meaningful use in their practices in a secure and interoperable manner.

  - *Based on Lewin & McKinsey's original estimate of 10,000 eligible providers, California surpassed this goal with 17,679 providers receiving Year 1 payments by December 2015 (176%). However, due to the 2014 expansion of Medicaid under the Patient Protection and ACA and the transition of the Healthy Families Program (HFP) to Medi-*

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[102] Department of Health Care Services, Strategy for Quality Improvement in Health Care.

[103] Department of Health Care Services, Medi-Cal Managed Care Performance Dashboard.

Cal, the estimated number of eligible providers increased. A 2013 survey conducted by UCSF and the Medical Board estimates that approximately 22,200 providers are eligible for incentive payments, approximately 80% of these received year 1 payments by December 2015. We are anticipating that at the end of the 2016 program year at least 23,000 eligible providers will have attested.

- By 2015, 90% of eligible Medi-Cal providers will have implemented clinical decision support tools with their EHRs.

  - *All providers who meet MU have implemented clinical decision support tools in their EHRs. As of December 2015, 6,157 providers had achieved MU, or 61% based on Lewin & McKinsey's original estimate of 10,000 eligible providers. This percentage drops to 28% when based on the 2013 UCSF survey, which increased the estimated number of eligible providers to 22,000 due to the expansion of Medicaid under the ACA and the transition of the Healthy Families Program (HFP) to Medi-Cal.*

- By 2015, all Medi-Cal beneficiaries of providers with EHRs will have access to their Personal Health Record and self-management tools.

  - *As of March 2015, 85% of Medi-Cal beneficiaries of providers who achieved Stage 1 MU had access to their Personal Health Record, as reported under the Patient Electronic Access (view, download, transmit) core objective.*

- Upon EHR adoption, Medi-Cal providers and beneficiaries will be able to use available electronic health information from the beneficiaries' other providers employing EHRs to make information health care decisions at the point of care.

  - *Providers are required to adopt certified electronic health record technology (CEHRT) which meets the requirements defined at 45 CFR 170.102. Among these requirements is the ability for the certified EHR to exchange electronic health information with, and integrate such information from other sources. In order to successfully meet Stage 2 and 3 MU, providers are required to meet the HIE/summary of care MU objective by transmitting the summary of care electronically using CEHRT.*

In addition to these vision elements, DHCS defined a number of operational goals for the Medi-Cal EHR Incentive Program:

- In October 2011, the SLR will be operational and accepting information from the National Level Registry and from hospitals.

  - *The SLR began accepting hospital attestations in October 2011.*

- By November 2011, the SLR will be accepting Group registration and attestation.

  - *The SLR began accepting group attestations in November 2011.*

- By November 2011, the Medi-Cal EHR Incentive Program will have begun issuing incentive payments to hospitals.

  - *Incentive payments to hospitals were issued beginning in December 2011.*

- By December 2011, the SLR will be accepting eligible professional registration and attestation.

  - *The SLR began accepting eligible professional attestations in January 2012.*

- By December 2011, all Medi-Cal practitioners and hospitals will have received information about eligibility requirements for the EHR Incentive Program and how to apply for participation.

  - *DHCS utilized RECs, program stakeholders, provider associations, and the Medical Board to disseminate information about the Medi-Cal EHR Incentive Program to providers prior to and after launching the program in October 2011.*

- By February 2012, the Medi-Cal EHR incentive Program will have begun issuing incentive payments to eligible professionals.

  - *Incentive payments to eligible professionals were issued beginning in May 2012.*

- By March 31, 2012, at least 35% of Medi-Cal providers and hospitals eligible for Medi-Cal EHR Incentive Program funds will have registered and received an incentive payment for adopting, implementing, or upgrading certified EHR technology.

  - *6,713 providers had attested for AIU by March 2012, this constitutes 67% of those eligible (based on Lewin & McKinsey's original estimate of 10,000 eligible providers) registering and receiving a payment by March 2012. Subsequent to 2012, the program saw an increase in eligible providers due to the Medicaid expansion under ACA and transition of the Healthy Families Program (HFP) to Medi-Cal. A survey*

conducted by UCSF in 2013 increased the estimated number of eligible providers to 22,000.

- *For hospitals, of the 242 estimated to be eligible, 178 had attested for AIU by March 2012, or 73%.*

- By July 31, 2012, 100% of practitioners and hospitals receiving Medi-Cal EHR Incentive Program funding will have received information on using their EHRs to achieve MU.

  - *Beginning with the start of the program, DHCS has regularly updated Medi-Cal EHR Incentive Program providers and other stakeholders (RECs, hospital associations, etc.) with important information about MU through email notifications and website announcements.*

- By December 31, 2012, at least 70% of Medi-Cal providers and hospitals eligible for Medi-Cal EHR Incentive Program funds will have registered and received an incentive payment for adopting, implementing, or upgrading certified EHR technology.

  - *Based on Lewin & McKinsey's original estimate of 10,000 eligible providers, 82% (8,279) had attested by December 2012, and 62% (6,263) had received payment by that date. According to the updated estimate of 22,000 eligible providers derived from the 2013 UCSF survey, these figures change to 38% and 28% respectively.*

  - *For hospitals, the registration goal was exceeded at 116% (282) applications received for AIU, and 86% (209) had also received a payment by December 2012.*

- By December 31, 2012, 50% of providers and hospitals that received Medi-Cal EHR Incentive Program funding in 2011 will have achieved MU and received funding for this accomplishment.

  - *31 hospitals received AIU incentive payments in 2011. By December 2012, 16 (50%) hospitals had received payment for MU. Due to program delays, no EPs were paid in calendar year 2011.*

- By December 31, 2013, 80% of Medi-Cal practitioners and hospitals eligible for the Medi-Cal EHR Incentive Program will have registered and received an incentive payment for adopting, implementing, or upgrading certified EHR technology.

  - *By December 2013, of Lewin & McKinsey's original estimate of 10,000 providers eligible, 10,891 had attested, or about 109%. As a result of*

the Medicaid expansion under ACA and the transition of the Healthy Families Program (HFP) to Medi-Cal, an updated estimate of 22,000 providers eligible (from the 2013 UCSF Survey) changes this figure to 50%.

- *Of the estimated 242 hospitals eligible, 255 had attested, or 105%.*

- By December 31, 2013, 70% of Medi-Cal providers and hospitals receiving funding in 2011 will have achieved MU and received funding for that accomplishment.

  - *31 hospitals received funding in 2011. By December 2013, all 31 hospitals (100%) had received payment for achieving their first year of MU. Due to program delays, no EPs were paid in calendar year 2011, however 2,472 providers received payments for MU by December 2013.*

In addition to these operational goals, DHCS defined a number of special goals based upon the landscape assessment presented in <u>Section 1</u> and input from stakeholders:

- By December 31, 2014, a portable, EHR-based health record will have been developed and tested for California's foster children.

  - *In 2012 DHCS sought approval from CMS for funding the Ventura County FHL, a project aimed to increase electronic information exchange and coordination of care among California's foster children. Although the funding was not approved, the project was launched in the summer of 2015. The Ventura County FHL provides a portable electronic personal record for over 1,000 foster children in Ventura County that is used by foster parents and social workers to coordinate care. The project addressed the issue of incomplete and disorganized records, a common problem for foster children who experience frequent changes in family placement, physicians, and schools. Such gaps in essential records can result in inappropriate or insufficient medical care. Future goals for the FHL include development of a version accessible for older foster youth and inclusion of information from Ventura County school systems.*

  - *In 2014, The Children's Partnership, Altruit, and FollowMe, Inc., and the University of California, Davis, implemented HealthShack as a personal health record system in Sacramento County to support foster youth in transitioning out of care. HealthShack, allows foster youth to*

create an electronic record containing key personal and medical records. In 2014, access to HealthShack was expanded to include young people between the ages of 18-20 or those who are aging out of foster care in Sacramento County.

- By December 31, 2015, an interoperable EHR for medical and behavioral health will have been developed and tested for California's mental health population.

  - *Counties received $453.4 million for CF/TN projects. Funds need to be expended though FY 2017-18. The funds may be used for the improvement or replacement of existing systems. Four technology vendors, using 9 products, have been implemented by the counties. All of the EHRs are MU certified.*

- By December 31, 2015, a continuity of care document (CCD) that includes behavioral health will have been developed and tested for California's mental health population.

  - *All of the EHRs have the ability to import and export CCDs. The CCD includes patient demographics, diagnoses, medications, allergies, treatment plans, encounter notes, and other data relevant to patient care. Consent documentation for the CCD can be stored in the HIE. This connects an electronic version of the consent documentation of the release containing the data recorded on the CCD.*

- By December 31, 2015, 90% of independent pharmacies in California will be connected to an e-prescribing network

  - *According to the 2014 Surescripts National Progress Report, nationally 88% of independent pharmacies (and 98% of chain pharmacies) are connected to an e-Prescribing network. California ranks within the top ten states e-Prescribing controlled substances.*

- By December 31, 2015, 80% of community clinics will have fully implemented certified EHRs.

  - *According to the 2013 UCSF survey, 80% of EPs in community clinics have access to an EHR. Additionally, according to an April 2014 survey completed by CPCA clinics, approximately 81% of respondents are using EHRs.*

- By December 31, 2015, 50% of providers in California will be able to electronically transmit immunization information to an immunization registry.

  - *According to the 2013 UCSF survey, 54% of the physicians surveyed indicated that they have an EHR with the ability to transmit data to*

immunization registries. All immunization registries in California are capable of receiving electronic transmissions.

- By December 31, 2015, 90% of hospital, regional, and public health laboratories will be able to electronically transmit laboratory results to providers.

  - *Consolidated data regarding transmission from laboratories to provider EHRs is not available as approximately half of laboratory tests in California are performed by over 17,000 hospital, regional, public health, and provider office laboratories. However, the two largest commercial laboratories in the state (Quest Diagnostics and Labcorp) perform between 50% and 60% of outpatient laboratory tests in California and are able to integrate with EHRs. Additionally, both provide access via e-portals for providers to access lab results.*

- By December 31, 2015, 80% of providers and hospitals will be able to transmit reportable disease information to the local and state public health departments.

  - *CDHP's CalREDIE is used by 58 of the 61 local health departments LHDs in California to report all diseases, the remaining 3 LHDs are using CalREDIE in some capacity. The CalREDIE Provider Portal enables providers and hospitals to electronically submit reportable disease information to their LHDs. Currently 37 of the 61 LHDs are using the Provider Portal. Hospitals and providers whose LHD does not utilize the Provider Portal are still able to submit reportable disease information via manual transmission.*

APPENDIX 11:   MEANINGFUL USE (MU) CERTIFICATE

California Department of Health Care Services

DHCS

is commended as

Electronic Health Record Meaningful User

2016

Raul Ramirez
Chief, Office of Health Information Technology

Jennifer Kent
DHCS Director

APPENDIX 12: DENTAL MEANINGFUL USE (MU) SURVEY

Meaningful Use Dental Survey

The Office of Health Information Technology (OHIT), of the California Department of Health Care Services administers the Medi-Cal Electronic Health Record program that has provided over $1.4 billion for hospitals and health professionals to adopt and use electronic health records (EHRs) over the last 5 years. As the program will continue until 2021, hospitals and providers can continue to receive funding by demonstrating meaningful use of EHRs during this time. Slightly less than 50% of program participants have demonstrated meaningful use, with dentists having the lowest rate at less than 10%. OHIT would like to better understand the unique barriers to demonstrating meaningful use of EHRs that dentists face. You, or your office, has been identified as a program participant that received an incentive payment to adopt an EHR, but who has not subsequently received incentive funding for demonstrating meaningful use. We would like to ask you to complete the following questions to help us understand the barriers to meaningful use in the dental community.

Completing this survey will have no effect on your ability to receive incentive or other payments from DHCS in the future.

Note on confidentiality: Your individual responses will remain confidential. Overall findings will be summarized and used for reporting purposes.

1. Are you the dentist or a contact person for the dentist(s)? (select one)

    _____ Dentist

    _____ Contact Person

2. If you are a dentist, indicate the number of dentists in your primary practice location (select one).

    _____ 1-5

    _____ 6-19

    _____ 20 or greater

    _____ Other. Please specify the number of dentists in the primary practice location.

3. If you are the contact person for the dentist(s), how many dentists do you represent?

    _____ 1-5

    _____ 6-19

    _____ 20 or greater

    _____ Other. Please specify the number of dentists that you represent.

4. Please indicate primary practice location for you or the dentist(s) you represent (select one).

    _____ Private practice (Owner/billing provider)

    _____ Federally Qualified Health Center/Rural Health Center/Indian Health Center

    _____ Community Health Center

    _____ Dental School/other educational setting.

    _____ Other (please specify).

5. Do you or the dentist(s) that you represent intend to apply for meaningful use incentive payments in the future? (select one)

    _____ Yes (Instead of drop down, use logic for a "yes" response.)

    _____ No

6. When do you intend to submit a meaningful use application? (Logic applied if answer to #5 is "yes'.)

    _____ 2017
    _____ 2018
    _____ 2019
    _____ 2020
    _____ 2021

The next series of questions are specific to the unique barriers experience by dentists when demonstrating meaningful use. Even if you do not intend to apply for meaningful use, your responses and feedback are appreciated.

7. I do not regularly use my certified Electronic Health Record (EHR)/Electronic Dental Record (EDR).
    _____ Yes
    _____ No

8. My certified EHR/EDR is not user friendly for dentists.
    _____ Strongly agree

    _____ Agree

    _____ Neutral/Neither agree nor disagree

    _____ Disagree

    _____ Strongly disagree

9. The conversion process from paper-based to electronic charts available in the EHR/EDR is too difficult.
    _____ Strongly agree

    _____ Agree

    _____ Neutral/Neither agree nor disagree

    _____ Disagree

    _____ Strongly disagree

10. My certified EHR/EDR does not offer dental appropriate modules and/or applications.
    _____ Strongly agree

    _____ Agree

    _____ Neutral/Neither agree nor disagree

    _____ Disagree

    _____ Strongly disagree

11. My EHR/EDR needs to be upgraded to comply with current meaningful use requirements.

_____ Yes

_____ No

12. It is difficult to qualify for MU because I practice in multiple locations equipped with different EHR/EDR technologies.

_____ Strongly agree

_____ Agree

_____ Neutral/Neither agree nor disagree

_____ Disagree

_____ Strongly disagree

13. The $8,500 meaningful use payments does not justify the effort needed to meet meaningful use.

_____ Strongly agree

_____ Agree

_____ Neutral/Neither agree nor disagree

_____ Disagree

_____ Strongly disagree

14. I am aware that many meaningful use measures do not apply to dentists and can be excluded.

_____ Strongly agree

_____ Agree

_____ Neutral/Neither agree nor disagree

_____ Disagree

_____ Strongly disagree

15. My patients do not have email addresses, making it difficult to meet the patient portal requirements.

_____ Yes

_____ No

16. I do not believe I can qualify for meaningful use because I am a dentist.

    _____ Strongly agree

    _____ Agree

    _____ Neutral/Neither agree nor disagree

    _____ Disagree

    _____ Strongly disagree

17. I need more information about meaningful use requirements.

    _____ Yes (Include option for EP to provide email address to receive tip sheet).

    _____ No

18. Please enter your email address if you would like to receive more information regarding meaningful use requirements for dentists. (This question only appears if respondent requests more information.)

19. Thank you for your responses. If you have any additional comments, please let us know.

APPENDIX 13:   DENTAL MEANINGFUL USE (MU) SURVEY RESULTS

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q1 Are you the dentist or the contact person/representative for the dentist(s)? Please select one.

Answered: 368   Skipped: 0
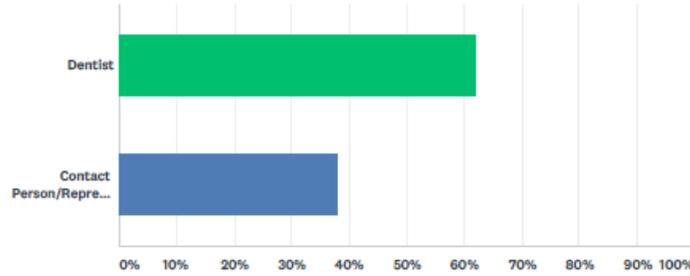
ANSWER CHOICES	RESPONSES	
Dentist	61.96%	228
Contact Person/Representative	38.04%	140
TOTAL		368

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q2 If you are the dentist, indicate the number of dentists in your primary practice location.

Answered: 226   Skipped: 142
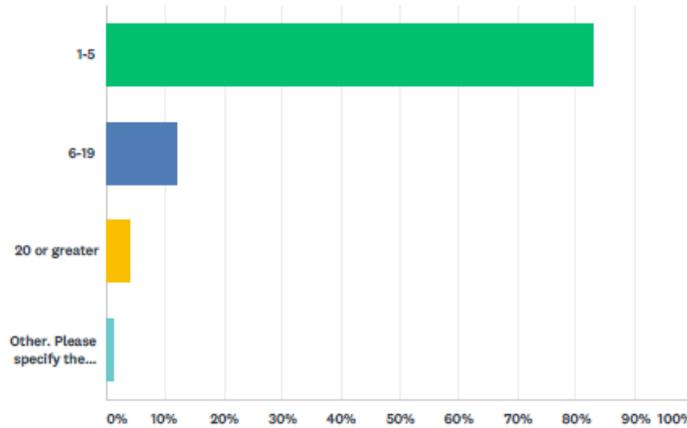
ANSWER CHOICES	RESPONSES	
1-5	82.74%	187
6-19	11.95%	27
20 or greater	3.98%	9
Other. Please specify the number of dentists in the primary practice location.	1.33%	3
TOTAL		226

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q3 If you are the contact person for the dentist(s), how many dentists do you represent?

Answered: 139   Skipped: 229
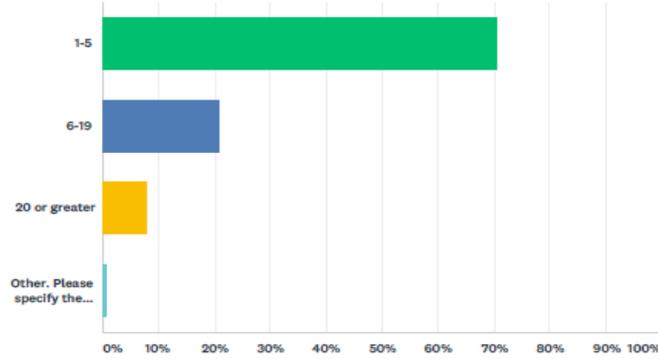
ANSWER CHOICES	RESPONSES	
1-5	70.50%	98
6-19	20.86%	29
20 or greater	7.91%	11
Other. Please specify the number of dentists that you represent.	0.72%	1
TOTAL		139

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q4 Please indicate the primary practice location for you or the dentist(s) you represent (select one).

Answered: 361   Skipped: 7
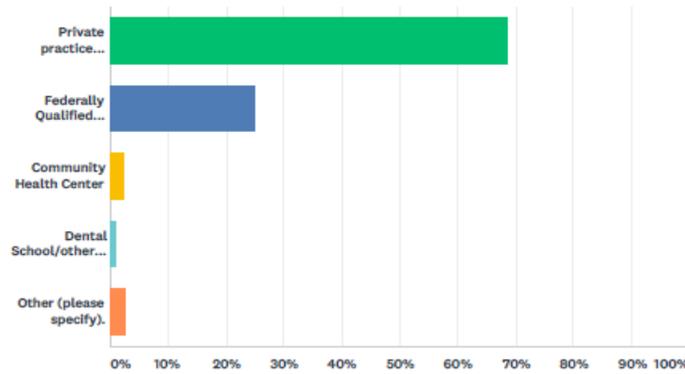
ANSWER CHOICES	RESPONSES	
Private practice (Owner/billing provider)	68.70%	248
Federally Qualified Health Center/Rural Health Center/Indian Health Center	25.21%	91
Community Health Center	2.22%	8
Dental School/other educational setting	1.11%	4
Other (please specify).	2.77%	10
TOTAL		361

285

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q5 How likely are you or the dentist(s) that you represent to apply for meaningful use incentive payments in the future? (select one)

Answered: 359   Skipped: 9
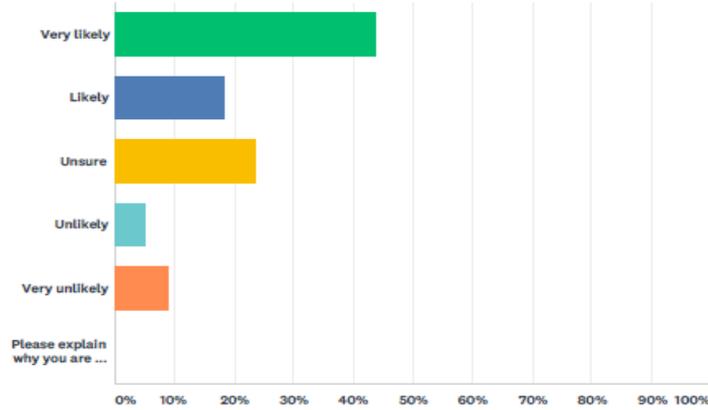
ANSWER CHOICES	RESPONSES	
Very likely	43.73%	157
Likely	18.38%	66
Unsure	23.68%	85
Unlikely	5.29%	19
Very unlikely	8.91%	32
Please explain why you are not sure if you will submit an application to receive meaningful use incentive funds.	0.00%	0
TOTAL		359

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q6 When do you intend to first submit a meaningful use application?

Answered: 219   Skipped: 149
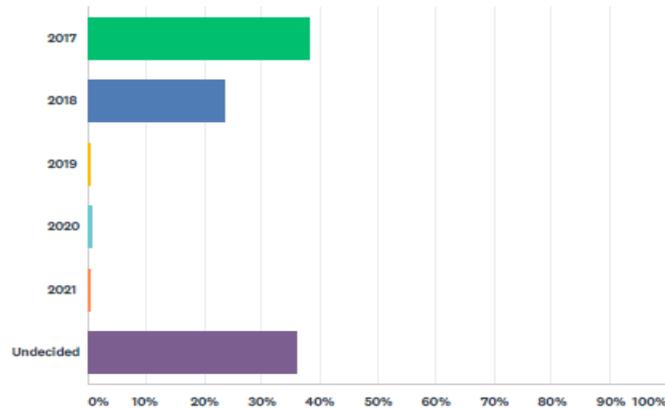
ANSWER CHOICES	RESPONSES	
2017	38.36%	84
2018	23.74%	52
2019	0.46%	1
2020	0.91%	2
2021	0.46%	1
Undecided	36.07%	79
TOTAL		219

286

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q7 I regularly use my certified Electronic Health Record (EHR)/Electronic Dental Record (EDR).

Answered: 341   Skipped: 27
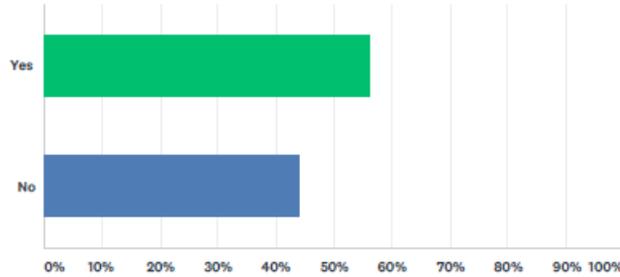
ANSWER CHOICES	RESPONSES	
Yes	56.01%	191
No	43.99%	150
TOTAL		341

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q8 My certified EHR/EDR is not user friendly for dentists.

Answered: 332   Skipped: 36
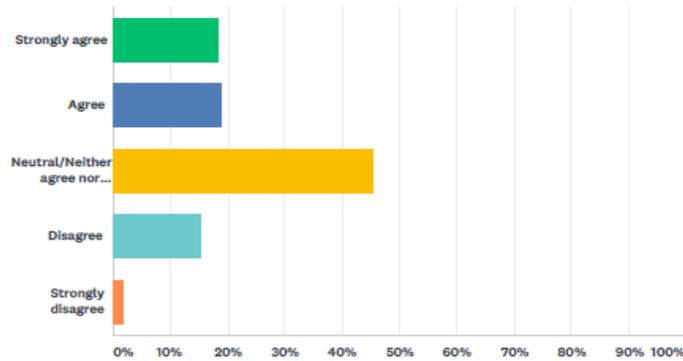
ANSWER CHOICES	RESPONSES	
Strongly agree	18.37%	61
Agree	18.98%	63
Neutral/Neither agree nor disagree	45.48%	151
Disagree	15.36%	51
Strongly disagree	1.81%	6
TOTAL		332

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q9 The conversion process from paper-based to electronic charts available in the EHR/EDR is too difficult.

Answered: 327   Skipped: 41
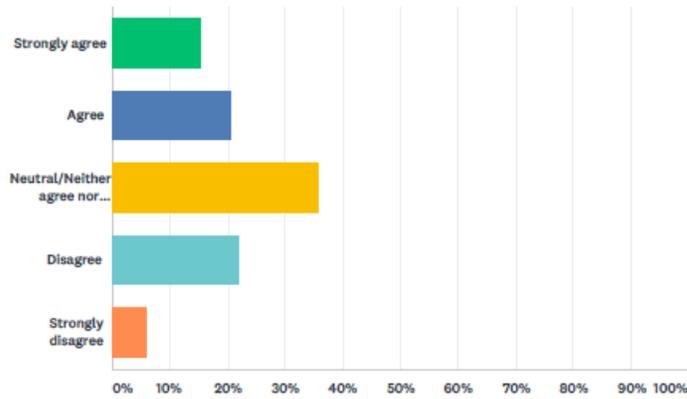
ANSWER CHOICES	RESPONSES	
Strongly agree	15.29%	50
Agree	20.80%	68
Neutral/Neither agree nor disagree	35.78%	117
Disagree	22.02%	72
Strongly disagree	6.12%	20
TOTAL		327

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q10 My certified EHR/EDR does not offer dental-appropriate modules and/or applications.

Answered: 320   Skipped: 48
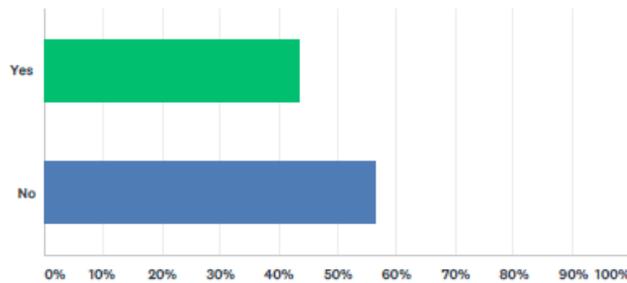
ANSWER CHOICES	RESPONSES	
Yes	43.44%	139
No	56.56%	181
TOTAL		320

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q11 My EHR/EDR needs to be upgraded to comply with current meaningful use requirements.

Answered: 318   Skipped: 50
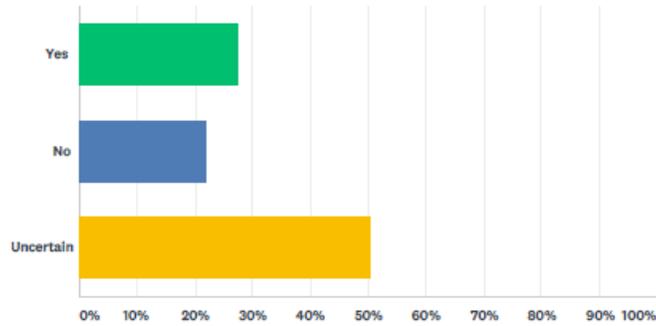
ANSWER CHOICES	RESPONSES	
Yes	27.67%	88
No	22.01%	70
Uncertain	50.31%	160
TOTAL		318

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q12 I do not believe I can qualify for meaningful use because I am a dentist.

Answered: 315   Skipped: 53
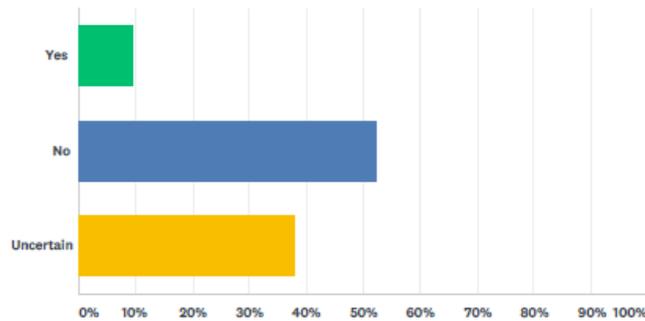
ANSWER CHOICES	RESPONSES	
Yes	9.52%	30
No	52.38%	165
Uncertain	38.10%	120
TOTAL		315

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q13 I am aware that many meaningful use measures do not apply to dentists and, therefore, can be excluded.

Answered: 313   Skipped: 55
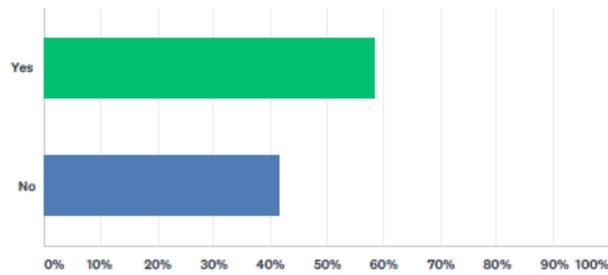
ANSWER CHOICES	RESPONSES	
Yes	58.47%	183
No	41.53%	130
TOTAL		313

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q14 It is difficult to qualify for MU because I practice in multiple locations with different EHR/EDR technologies.

Answered: 311   Skipped: 57
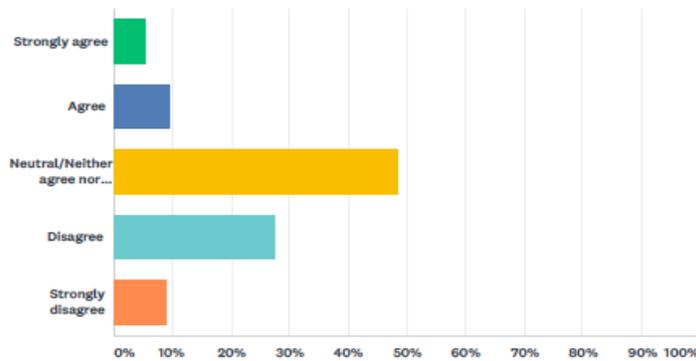
ANSWER CHOICES	RESPONSES	
Strongly agree	5.47%	17
Agree	9.32%	29
Neutral/Neither agree nor disagree	48.55%	151
Disagree	27.65%	86
Strongly disagree	9.00%	28
TOTAL		311

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q15 The annual $8,500 meaningful use payments do not justify the effort needed to meet meaningful use.

Answered: 310   Skipped: 58
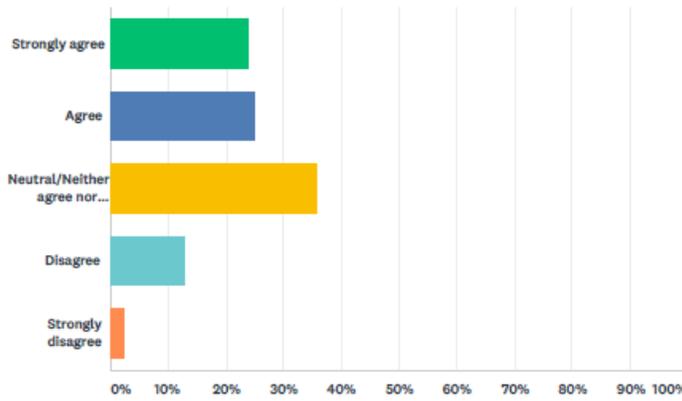
ANSWER CHOICES	RESPONSES	
Strongly agree	23.87%	74
Agree	25.16%	78
Neutral/Neither agree nor disagree	35.81%	111
Disagree	12.90%	40
Strongly disagree	2.26%	7
TOTAL		310

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q16 Many of my patients do not have email addresses or internet access, making it difficult to meet patient portal requirements.

Answered: 310   Skipped: 58
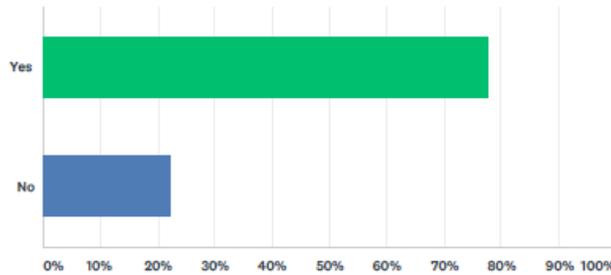
ANSWER CHOICES	RESPONSES	
Yes	77.74%	241
No	22.26%	69
TOTAL		310

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q17 I would like more information about meaningful use requirements.

Answered: 308   Skipped: 60
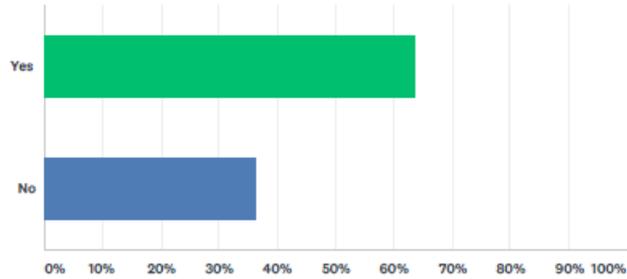
ANSWER CHOICES	RESPONSES	
Yes	63.64%	196
No	36.36%	112
TOTAL		308

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q18 Please enter your email address if you would like to receive more information regarding meaningful use requirements for dentists.

Answered: 193   Skipped: 175

Medi-Cal EHR Incentive Program Meaningful Use Survey for Dentists

Q19 Thank you for your responses. If you have any additional comments, please include those in the space provided below.

Answered: 57   Skipped: 311

APPENDIX 14: DENTAL MEANINGFUL USE (MU) TIP SHEET

Medi-Cal Electronic Health Record (EHR) Incentive Program

Tips for Dental Providers

General Program and Participation Requirements

Eligibility Requirements
- Be a licensed dentist in the State of California.
- Have 30% or more patient volume attributable to Medi-Cal patients in a 90-day period in the preceding calendar year.
- Participation in the Medi-Cal EHR Incentive Program prior to 2017.
- Program year participation does not need to be in consecutive years.

Meaningful Use
- A dentist can receive $8,500 per year by demonstrating meaningful use.
- To date, only 9% of dentists in the program have taken advantage of available meaningful use funds.
- It's not as hard as you think! Dentists can utilize many tips and work-arounds, including using exclusions, to attain meaningful use.

MU Objective (Stage 2)	Tips
Protect Patient Health Information	• Required for providers based on HIPAA requirements for the protection of electronic person health information (ePHI). • This can be done by internal staff or by a vendor.
Clinical Decision Support	• Exclusion available for drug-drug and drug-allergy interactions if an EP writes fewer than 100 medication orders.
Computerized Provider Order Entry (CPOE) for Medication, Lab, and Radiology Orders	• Individual exclusions available if EP writes fewer than 100 medication, lab, or radiology orders during the EHR reporting period.
Electronic Prescribing (eRX)	• Exclusion available for a dentist who writes fewer than 100 permissible prescriptions during the EHR reporting period.
Health Information Exchange	• Exclusion for less than 100 transitions of care during the EHR reporting period. • Applicable when patients are referred for additional dental services.
Patient-Specific Education	• Exclusion available for a dentist who has no office visits during the EHR reporting period.
Medication Reconciliation	• Exclusion available for a dentist who was not the recipient of any transitions of care during the EHR reporting period.

MU Objective (Stage 2)	Tips
Patient Electronic Access	• Encourages the use of a patient portal to view, download, or transmit health information. Only 5% or greater of patients need to access information. • Exclusion may apply for dentists in counties with low broadband access.
Secure Electronic Messaging	• Encourages use of secure messaging to improve communication between the patient and the office. Only 5% or greater of patients need to receive messaging. • Exclusion available for dentists in counties with low broadband access.
Public Health Reporting	• Exclusions available if a dentist does not give immunizations, practice in county with syndromic surveillance or participates in a specialized registry. This may include most dentists.

- **The link to the CMS Fact Sheet has been included for each MU Objective listed above.**
- **Program information is available on the State Level Registry at: http://ehr.medi-cal.ca.gov/**
- **Additional Stage 2 details are available at: https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/2015_EHR2015_2017.pdf**

APPENDIX 15: OPTOMETRISTS AS ELIGIBLE PROVIDERS

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
San Francisco Regional Office
90 Seventh Street, Suite 5-300 (5W)
San Francisco, CA 94103-6706

DIVISION OF MEDICAID & CHILDREN'S HEALTH OPERATIONS

Toby Douglas, Director
California Department of Health Care Services
P.O. Box 997413, MS 0000
Sacramento, CA 95899-7413

Dear Mr. Douglas:

Enclosed is an approved copy of California State Plan Amendment (SPA) 11-017. SPA 11-017 was submitted to my office on September 29, 2011 to add services that an optometrist is legally authorized to perform to the physician services section of the State Plan; the SPA also removes optometrist services from the other licensed practitioner services section of the State Plan. This SPA makes the necessary changes such that optometrists are eligible for the Electronic Health Record (EHR) incentive program.

The effective date of this SPA is October 1, 2011. Enclosed are the following approved SPA pages that should be incorporated into your approved State Plan:

- Attachment 3.1-A, page 3
- Limitations on Attachment 3.1-A, pages 10a.2 and 11
- Attachment 3.1-B, page 3
- Limitations on Attachment 3.1-B, pages 10a.2 and 11
- Section 3.1(f)(1), page 27

If you have any questions, please contact Kristin Dillon by phone at (415) 744-3579 or by email at Kristin.Dillon@cms.hhs.gov.

Sincerely,

/s/

Gloria Nagle, Ph.D., MPA
Associate Regional Administrator
Division of Medicaid & Children's Health Operations

Enclosure

cc: Kathyryn Waje, California Department of Health Care Services
       Pilar Williams, California Department of Health Care Services

APPENDIX 16:   PHYSICIAN ASSISTANT- LED (PA-LED) FORM

Attestation that a Federally Qualified Health Center or Rural Health Center is
Physician Assistant-Led (PA-Led)

*Please note: for the purposes of the Medi-Cal EHR Incentive Program this includes FQHC-look-alike
clinics, and Indian Health Clinics*

Clinic Name: _____

Clinic Address: _____

Clinic NPI: _____

_____FQHC _____ RHC (check one)

Name of PA who presently leads the clinic: _____

NPI of PA who presently leads the clinic: _____

Criteria for Physician Assistant-Led: (check at least one)

For the day on which this form is signed the:

_____ PA is clinical director

Or

_____ PA is dominant provider in the clinic

     Compared to other providers: (check at least one)

     _____ PA assigned the most patients

     _____ PA with the most patient encounters

     _____ PA with the most practice hours

Name of Eligible Physician Assistant: _____

Signature of Eligible Physician Assistant: _____

Date: _____

*Please Note: This form must be signed within the valid attestation period for the program year (i.e. the
calendar year and the grace period in the following calendar year). This form must be completed and
submitted every year that the PA participates in the Medi-Cal EHR Incentive Program.*

APPENDIX 17: STAYING HEALTH ASSESSMENT (SHA) FORM

State of California – Health and Human Services Agency   Department of Health Care Services

Staying Healthy
Assessment

0 – 6 Months

Child's Name (first & last)	Date of Birth	☐ Female ☐ Male	Today's Date	In Child/Day Care? ☐ Yes ☐ No
Person Completing Form	☐ Parent ☐ Relative ☐ Friend ☐ Guardian ☐ Other (Specify)			Need Help with Form? ☐ Yes ☐ No

Please answer all the questions on this form as best you can. Circle "Skip" if you do not know an answer or do not wish to answer. Be sure to talk to the doctor if you have questions about anything on this form. Your answers will be protected as part of your medical record.

Need Interpreter? ☐ Yes ☐ No

Clinic Use Only:

#	Question				
					Nutrition
1	Do you breastfeed your baby?	Yes	No	Skip	
					Physical Activity
2	Are you concerned about your baby's weight?	No	Yes	Skip	
3	Does your baby watch any TV?	No	Yes	Skip	
					Safety
4	Does your home have a working smoke detector?	Yes	No	Skip	
5	Have you turned your water temperature down to low-warm (less than 120 degrees)?	Yes	No	Skip	
6	If your home has more than one floor, do you have safety guards on the windows and gates for the stairs?	Yes	No	Skip	
7	Does your home have cleaning supplies, medicines, and matches locked away?	Yes	No	Skip	
8	Does your home have the phone number of the Poison Control Center (800-222-1222) posted by your phone?	Yes	No	Skip	
9	Do you always put your baby to sleep on her/his back?	Yes	No	Skip	
10	Do you always stay with your baby when she/he is in the bathtub?	Yes	No	Skip	

DHCS 7098 A (Rev 12/14)   SHA (0 – 6 Months)   Page 1 of 2

11	Do you always place your baby in a rear facing car seat in the back seat?	Yes	No	Skip	
12	Is the car seat you use the right one for the age and size of your baby?	Yes	No	Skip	
13	Does your baby spend time in a home where a gun is kept?	No	Yes	Skip	
14	Do you give your baby a bottle with anything except formula, breast milk, or water?	No	Yes	Skip	**Dental Health**
15	Does your baby spend time with anyone who smokes?	No	Yes	Skip	**Tobacco Exposure**
16	Do you have any other questions or concerns about your baby's health, development, or behavior?	No	Yes	Skip	**Other Questions**

If yes, please describe:

Clinic Use Only	Counseled	Referred	Anticipatory Guidance	Follow-up Ordered	Comments:
☐ Nutrition	☐	☐	☐	☐	
☐ Physical Activity	☐	☐	☐	☐	
☐ Safety	☐	☐	☐	☐	
☐ Dental Health	☐	☐	☐	☐	
☐ Tobacco Exposure	☐	☐	☐	☐	☐ **Patient Declined the SHA**
PCP's Signature:		Print Name:			Date:

298

APPENDIX 18:   REDWOOD MEDNET

www.redwoodmednet.org

Redwood MedNet launches iOS app for Medi-Cal Staying Healthy Assessment
28 June 2017

The Staying Healthy Assessment (SHA) is an individual health education survey developed by California Department of Health Care Services (DHCS). The SHA consists of seven age-specific pediatric questionnaires and two adult questionnaires. It is available in English and in all Medi-Cal threshold languages. Providers are required to administer the SHA to Medi-Cal beneficiaries as part of the Initial Health Assessment, and to periodically re-administer the assessment per contract requirements. Blank SHA forms are available to download as a PDF from DHCS. The survey is typically filled out by hand as a two page paper form.

During 2016 the Lake County Health Leadership Network, a rural community health collaborative, investigated electronic solutions to automate SHA data collection and to build a repository of SHA data for use as a local population health quality measure. The Health Leadership Network SHA Data Automation Project is funded by a planning grant from HRSA and an implementation grant from Partnership HealthPlan of California. In February 2017 Redwood MedNet demonstrated a software solution for automating SHA data collection to the Health Leadership Network, Partnership HealthPlan, and DHCS Office of Health IT. In March 2017 the Health Leadership Network requested a proposal from Redwood MedNet to build the SHA data service. In June 2017 Redwood MedNet and the Health Leadership Network signed a Letter of Agreement to build a pilot of software to automate SHA data collection.

The Redwood MedNet SHA data collection service is built as an iPad application using SMART on FHIR as the software stack, with Argonaut profiles to access patient demographics from the EHR. The SMART app exports assessment results as JSON data objects, provides the

rwmn.sha.data.20170628.v10   1 / 2

outpatient practice with an electronic file for each assessment, and populates a SHA repository for access with data visualization tools. The illustration below shows a high level diagram of the generic SMART on FHIR data service. Redwood MedNet is grateful for substantial guidance during development of the SHA data automation use case from Drajer LLC, CAHIE, DHCS Office of Health IT, Joshua Mandel, MD, from Boston Children's Hospital, and Michael Hogarth, MD, from UC Davis School of Medicine.

For more information about the Health Leadership Network SHA Data Automation Project contact smartonfhir@redwoodmednet.org.

Links:

http://www.dhcs.ca.gov/formsandpubs/forms/Pages/StayingHealthy.aspx

http://smarthealthit.org/

http://hl7.org/fhir/versions.html

http://www.partnershiphp.org

rwmn.smartapp.sha.20170628.v10
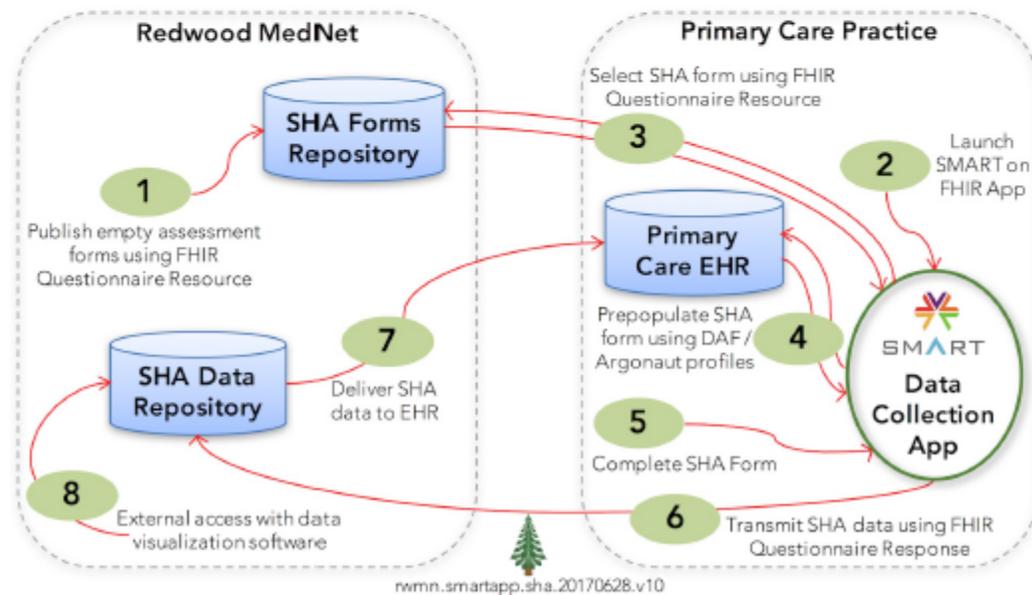
APPENDIX 19:   HIE FUNDING OPPORTUNITY NOTICE
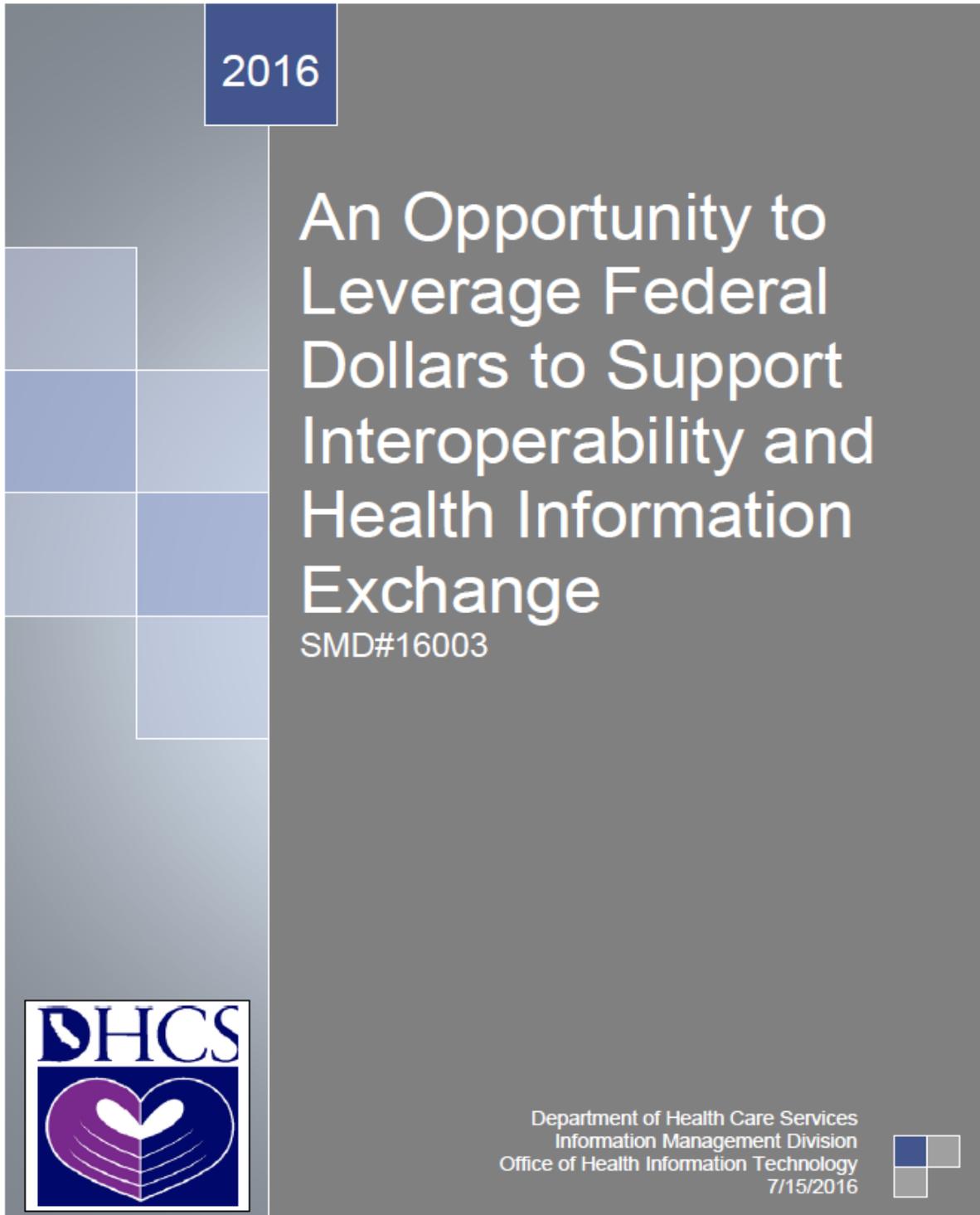
2016

An Opportunity to Leverage Federal Dollars to Support Interoperability and Health Information Exchange
SMD#16003

Department of Health Care Services
Information Management Division
Office of Health Information Technology
7/15/2016

INTRODUCTION

The Centers for Medicare and Medicaid Services (CMS) Medicaid Data and Systems Group and Office of the National Coordinator (ONC) Office of Policy, partnered to update the guidance on how states may support health information exchange and interoperable systems to best support Medicaid providers in attesting to Meaningful Use Stages 2 and 3. This updated guidance allows State Medicaid Agencies to leverage Medicaid HITECH funds to support all Medicaid providers with whom Eligible Providers (EPs) wish to coordinate care with.

The mission of the California Department of Health Care Services (DHCS) is to provide Californians with access to affordable, integrated, high-quality health care, including medical, dental, mental health, substance use treatment services and long-term care. Our vision is to preserve and improve the overall health and well-being of all Californians.

DHCS's programs and quality strategy emphasize prevention-oriented health care that promotes health and well-being. This is done to: a) serve those with the greatest health care needs through the appropriate and effective expenditure of public resources, with a focus on improving the health of all Californians; b) enhancing quality, including the patient care experience, in all DHCS programs; and c) reduce the Department's per capita health care program costs. DHCS has embarked on a path of transformation and innovation supporting the Medi-Cal 2020[1] Waiver, to achieve its commitments to the public and the people it serves.

Updated guidance provided in SMD #16003 places DHCS is in a unique position to leverage Medicaid HITECH funds to support activities which align with the department's mission and vision, including HIE onboarding and systems for behavioral health providers, long term care providers, substance abuse treatment providers, home health providers, correctional health providers, social workers, emergency medical services providers and so on. It may also support the HIE on-boarding of laboratory, pharmacy or public health providers.

Given the breadth of potential activities eligible for HITECH funding at the local and state level, and recognizing the limited State staff resources available to support evaluation and funding of these activities, it is critical that efforts be coordinated and support DHCS's mission, including Medi-Cal 2020 waiver activities.

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[1] http://www.dhcs.ca.gov/provgovpart/Pages/medi-cal-2020-waiver.aspx

Potential Uses

The underlying principle behind SMD#16003 and HITECH statute supporting the Medi-Cal EHR Incentive Program, supports the pursuit of initiatives to encourage the adoption of certified EHR technology which promote health care quality and the exchange of health care information under this title, subject to applicable laws and regulations governing such exchange. Activities include but are not limited to those which follow below.

HIE On-boarding

State Medicaid Agencies may use this enhanced funding to on-board Medicaid providers who are not incentive-eligible, including public health providers, pharmacies and laboratories. So, for example:

- Long term care providers may be on-boarded to a statewide provider directory
- Rehabilitation providers may be on-boarded to encounter alerting systems
- Pharmacies may be on-boarded to drug reconciliation systems
- Public health providers may be on-boarded to query exchanges
- EMS providers may be on-boarded to encounter alerting systems
- Medicaid social workers may be connected to care plan

Such on-boarding must connect the new Medicaid provider to an EP, and help that EP in achieving MU stage 2 and 3.

HIE Architecture

Several HIE modules and use cases are specifically called out for support:

- **Provider Directories**: with an emphasis on dynamic provider directories that allow for bidirectional connections to public health and that might be web-based, allowing for easy use by other Medicaid providers with low EHR adoption rates
- **Secure Messaging**: with an emphasis on partnering with DirectTrust
- **Encounter Alerting**
- **Care Plan Exchange**
- **Health Information Services Providers** (HISP) Services
- **Query Exchange**
- **Public Health Systems**

Any requested system must support Meaningful Use for a Medicaid EP in some manner. So, for example, the content in the Alerting feed or Care Plan must potentially help an EP meet an MU measure.

Public Health Systems

The major distinction from previous permitted funding options, is that Medicaid HITECH funds can be used for more than interfaces for EPs- now it can be used for the Public Health infrastructure more broadly to allow EPs to meet MU.

Provider Directories

- Enable HIE
- MMIS funding has always been available for Medicaid provider directories but the directory only supports Medicaid in most instances
- This new option would allow for the inclusion of non-eligible providers in a statewide HIE's provider directory, funded in part by Medicaid with HITECH funds

Care Plan Exchange

- Sending an electronic care plan between providers (physical and behavioral health, for example)
- MU alignment:
- Summary of Care
- Health Information Exchange
- View, download, transmit

Care Plan Scenarios

Scenario 1: Unidirectional Exchange of a Care Plan during a complete handoff of care form the sending Care Team (e.g. Hospital setting) to a receiving Care Team (e.g. Home Health Agency and PCP)

Scenario 2: Exchanging a Care Plan between Care Team Members and a Patient

- Setting 1: Hospital or ED where Patient is discharged from sends Care Plan to Care Team in non-acute care setting
- Setting 2: Care Team including Patient in Acute Care Setting creates harmonized Care Plan for exchange with a second Care Team in a non-acute care setting
- Setting 3: Patient receives Care Plan in their personal health record application or patient system.

Interoperability Standards

Medicaid systems must adhere to Medicaid Information Technology Architecture (MITA)*, which requires adherence to seven conditions and standards:

- Modularity Standards
- MITA Condition
- Industry Standard Condition
- Leverage Condition
- Business Result Condition
- Reporting Condition
- Interoperability Condition

Process

Funding for activities outlined in SMD#16003 go directly to the state Medicaid agency in the same way existing Medicaid HITECH administrative funds are distributed. Steps necessary to secure Federal funding include:

- Updating the State Medicaid Health Information Technology Plan (SMHP)[2] to include a high level description of the proposed initiatives or activities
- State submission of an IAPD (Implementation Advanced Planning Document), requesting approval of enhanced federal funding for the initiative. The IAPD must include a detailed description of the initiative, required staffing, comprehensive budget information, cost allocations, and details regarding the source of matching funds. IAPD's are submitted to CMS for review and approval.
- States must complete Appendix D (HIE information) for the IAPD as appropriate
- Federal funding for HIE and Interoperability activities described in SMD#16003 is in place until 2021 and is a 90/10 Federal State match. The state is responsible for securing the 10% match. As such, DHCS will need to work with potential recipients of this enhanced funding to identify a source for the 10% match. Please note, matching funds are subject to federal funding rules and cannot be provided directly from providers/entities benefiting from the enhanced funding.
- The funding is for HIE and interoperability **only**, not to purchase/provide EHRs.
- The funding supports one time implementation costs **only**, it is not available for maintenance and operational costs.
- The funding must be cost allocated if entities other than the state Medicaid agency benefit
- **All providers or systems supported by this funding must connect to Medicaid EPs.**

Submission Information

If you are interested in submitting an idea, provide the following detailed information in a document (limited to 10 pages) and send to Raul Ramirez, Chief, Office of Health Information Technology, via email at raul.ramirez@dhcs.ca.gov with the subject line "HIT Funding Opportunity"

Please include a Statement of Needs and Objectives including:

- A summary of project goals, objectives, and needs, and the anticipated benefits of the proposed project
- How does the project tie into Meaningful Use?
- How does it benefit Medicaid Meaningful Use EHR incentive providers?
- Potential costs
- Source of 10% Matching Funds
- Contributions

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[2] http://www.dhcs.ca.gov/provgovpart/Documents/OHIT/CA_St_Medicaid_HIT_Plan_v2.4.pdf

The submissions will be reviewed and will be points for further discussion as DHCS updates the SMHP "To-Be HIT Landscape" and "HIT Roadmap." The current CMS approved SMHP is posted on the DHCS website. There is no submission due date, as the SMHP is updated on an annual basis and funding runs to 2021.

DHCS expects to work with stakeholders to develop a series of projects represented by a series of IAPDs. Considerations for distinct projects may be funding sources and recipient characteristics, such as specific technical needs based on the current environment. These will be developed on a flow basis.

Examples of current projects that have received funding through this process prior to the SMD 16003 include:
- California Technical Assistance Program (http://www.dhcs.ca.gov/provgovpart/Pages/California_Technical_Assistance_Program_(CTAP).aspx)
- California Immunization Registry project (CAIR 2.0)
- California's Reportable Disease Information Exchange (CalREDIE)

To read the full SMD#16003 letter, please see https://www.medicaid.gov/federal-policy-guidance/downloads/SMD16003.pdf .

APPENDIX 20:   2014 FLEXIBILITY RULE – SMHP ADDENDUM

The SMHP addendum below was submitted to CMS and approved on 2/27/2014.

Background.   On September 4, 2014 CMS issued The 2014 Edition EHR Certification Criteria Final Rule which is also known as the "Flexibility Rule." This rule enables hospitals and providers who have been unable to fully implement 2014 CEHRT because of delays in the availability of 2014 CEHRT to attest for meaningful use in 2014 using two alternative pathways--2013 Stage 1 objectives and measures or 2014 Stage 1 objectives and measures--depending on the meaningful use stage for which they are scheduled to report. California finished deploying the 2014 Stage 1 and Stage 2 objectives and measures into the State Level Registry (SLR) in May, 2014 and the Flexibility Rule now requires further changes to the SLR that are unexpected and substantial.

State Level Registry.   DHCS, in partnership with its SLR vendor, Xerox, looked at different approaches to implementing the Flexibility Rule. The first approach considered was to allow hospitals and providers to use the alternative attestation pathways by completing and uploading an Excel form containing the data for the alternative objectives and measures. Although this "workaround" approach would have the advantage of not requiring extensive changes to the SLR, it was judged to have too many drawbacks in terms of staff work requirements and data integrity. DHCS decided that the Flexibility Rule requirements would have to be fully integrated into the electronic workflow of the SLR. Xerox subsequently submitted a work plan to DHCS that projects deployment of the required changes in the SLR for both hospitals and providers in mid-March, 2015.

DHCS in past years has used March 31st as the end date for the attestation grace period for providers. A deployment date of mid-March will allow providers only two weeks to apply to the SLR using the Flexibility Rule for 2014. For this reason, DHCS is requesting an extension of the 2014 grace period for providers to May 31, 2015*. In order to prevent providers from getting out of stage sequence by applying for meaningful use for 2015 before the end of this grace period, DHCS is also requesting to delay acceptance of 2015 meaningful use attestations from providers until June 1, 2015. DHCS has identified only three Medicaid-only hospital in California that may desire to use the Flexibility Rule for 2014. Of these hospitals, only one will be eligible to use a 90-day reporting period in 2015. Given these facts, DHCS requests to extend the 2014 grace period for these 3 hospitals until May 31, 2015*. DHCS will advise the one hospital with a 90-day reporting period in 2015 to not apply for 2015 until the 2014 attestation has been submitted and approved. For this reason DHCS is not requesting to block 2015 meaningful use attestations from hospitals during the extended grace period for these 3 hospitals.

DHCS intends to deploy all of the provisions of the Flexibility Rule in the SLR as delineated in the Federal Register. DHCS is not requesting accommodation from CMS except with regarding to the timing of deployment and 2014 grace period issues described above.

Auditing. DHCS does not yet have an approved auditing plan for meaningful use. DHCS will audit compliance with the Flexibility Rule in the same manner that is approved by CMS for auditing meaningful use in the future. However, one aspect of the Flexibility Rule will require special attention—the reason(s) and documentation that hospitals and providers provide to demonstrate their eligibility to use the Flexibility Rule. Hospitals and providers will be required to designate at least one of the following reasons in the SLR to establish their eligibility to use the Flexibility Rule:

- Software development delays
- Certification delays
- Implementation delays by the vendor
- Delays in release of the product or update by the vendor
- Unable to train staff, test the updates system, or put new workflows in place due to delay with installation of 2014 CEHRT by the vendor
- Other vendor related delays
- Inability to meet Summary of Care objective due to inability of receiving hospital(s)/provider(s) to receive transmission (applies to using 2014 Stage 1 instead of 2014 Stage 2 only)

Hospitals and providers will be given the ability to upload documentation into the SLR supporting the reason they designate. Hospitals and providers utilizing the Flexibility Rule will be subject to auditing at a slightly increased rate due to the special circumstances and the need to verify that the reasons and documentation are in compliance with the Flexibility Rule.

*Note: This addendum was submitted on 10/31/2014, and approved by CMS on 2/27/2015. On 5/28/14 California requested that CMS allow a further deadline extension for Program Year 2014 through 6/14/2015. This request was approved by CMS on 6/1/2015.

APPENDIX 21:   2015-17 MODIFICATION RULE – SMHP ADDENDUM

The updated SMHP addendum below was submitted to CMS and approved on 3/27/2017.

The new Final Rule requires a radical redesign of California's State Level Registry (SLR). The most challenging redesign issue is enabling providers in 2015 who are in Stage 1, to choose to attest measure by measure to either the new Stage 2 measure or the old Stage 1 measure. This level of flexibility is incompatible with the current SLR code base and, according to our SLR contractor (Conduent), would require well over $1 million and 18 months of time to deploy. We have previously informed CMS staff of this issue and, through conference calls and e-mail correspondence, believe we have come to agreement on an approach that will satisfy the requirements of the new Final Rule while enabling California to deploy a revised SLR in a relatively timely fashion.

California's basic approach will be to modify the SLR so that providers who would have been in Stage 1 in 2015 and 2016 can choose to attest to either a "Stage 1" or "Stage 2" version of the objectives and measures. For the "Stage 1" version, when alternate measures are available, only those measures will be displayed for attestation. When alternate exclusions are available for measures in either the "Stage 1" or "Stage 2" versions, neither the measures nor the related alternate exclusion will be displayed. The underlying assumption for this is that providers should not be asked to enter data for a measure if they cannot be held subject to proof or penalty upon audit for having attested to an alternate exclusion for that measure. The charts below display the objectives, measures, and alternative exclusions for eligible providers and hospital in 2015 and 2016. Screen shots of the SLR pages will be subsequently submitted for CMS review and approval before deployment, but these charts should provide a basic summary of which objectives and measures will be displayed in the SLR for each version in each year. Objectives, measures, and alternate exclusions that will not be displayed are shaded in grey in the charts.

California will deploy the 90-day reporting period in 2015 for all providers and change the reporting period for hospitals to end December 31, beginning in 2015. These changes are exactly as designated in the 2015-2017 Modification Final Rule.

Beginning with Program Year 2016, California will take advantage of the flexibility provided in the Stage 2 Final Rule in 2012 (Section 495.306) to allow EPs and EHs to use a 90-day representative period either in the 12 months before attestation or in the preceding calendar year (for EPs) or preceding federal fiscal year (for EHs). Previously, California had decided not to allow 90-day representative periods in the 12 months prior to attestation. This change will not affect California's current prequalification methodologies for EPs and clinics that utilize the preceding calendar year as the representative period. California is adding this flexibility now to allow as many providers as possible to qualify for participation in 2016, since new providers cannot start the program after 2016.

California will deploy the 2016 and 2017 changes for objectives and measures for Stage 2 and Stage 3 exactly as designated in the Final Rule without change. California has submitted a separate SMHP Addendum for 2017 program year.

3/8/17 Addition

California will allow hospitals in Program Year 2016 to submit a new application to the program if they are able to provide 12 continuous months of auditable discharge data that ends before September 30, 2016. In previous years California has required the submission of 12 continuous months of discharge data that ends before October 1 of the prior calendar year. Since 2016 is the last year for providers to start the EHR Incentive Program, California has decided to allow the 12 continuous months of discharge data to end before September 30, 2016 so that newly opened hospitals that do not have 12 continuous months of discharge data ending before October 1, 2015 are able to qualify for the program. California believes that this flexibility is provided for in section 495.310(g)(1)(I)(B) of the Final Rule.

"The discharge-related amount for the most recent continuous 12-month period selected by the State, but ending before the federal fiscal year that serves as the first payment year."

For Program Year 2016 California chooses to allow the submission of discharge data for the most recent 12-month continuous period that ends before the end, rather than the start, of the federal fiscal year that serves as the first payment year. In order to determine the growth rate, in the subsequent 3 program years these hospitals will be required to submit discharge data using the same time frame -- the most recent 12-month period that ends before the end of the federal fiscal year that serves as the payment year.

ELIGIBLE PROVIDERS

2015 Stage 1	2015 Stage 2	2016 Stage 1	2016 Stage 2
OBJ 1 Measure 1 Alt Objective 2 Alt Measure 1 Measure 1***	**OBJ 1** Measure 1	**OBJ 1** Measure 1	**OBJ 1** Measure 1

2015 Stage 1	2015 Stage 2	2016 Stage 1	2016 Stage 2
OBJ 2 Measure 2	**OBJ 2** Measure 1 Measure 2	**OBJ 2** Measure 1	**OBJ 2** Measure 1 Measure 2
OBJ 3 Measure 1*** Alt Measure 1 Measure 2*** Alt Exclusion 2*** Measure 3*** Alt Exclusion 3***	**OBJ 3** Measure 1 Measure 2 Measure 3	**OBJ 3** Measure 1 Measure 2*** Alt Exclusion 2*** Measure 3*** Alt Exclusion 3	**OBJ 3** Measure 1 Measure 2 Measure 3
OBJ 4 Alt Measure 1 Measure 1***	**OBJ 4** Measure 1	**OBJ 4** Measure 1	**OBJ 4** Measure 1
OBJ 5 Measure 1*** Alt Exclusion 1***	**OBJ 5** Measure 1	**OBJ 5** Measure 1	**OBJ 5** Measure 1
OBJ 6 Measure 1*** Alt Exclusion 1***	**OBJ 6** Measure 1	**OBJ 6** Measure 1	**OBJ 6** Measure 1
OBJ 7 Measure 1*** Alt Exclusion 1***	**OBJ 7** Measure 1	**OBJ 7** Measure 1	**OBJ 7** Measure 1
OBJ 8 Measure 1 Measure 2*** Alt Exclusion 2***	**OBJ 8** Measure 1 Measure 2	**OBJ 8** Measure 1	**OBJ 8** Measure 1 Measure 2
OBJ 9(*)* Measures 1(*)*** Alt Exclusion 1***	**OBJ 9** Measure 1*	**OBJ 9** Measure 1*	**OBJ 9** Measure 1*

2015 Stage 1	2015 Stage 2	2016 Stage 1	2016 Stage 2
OBJ 10 Measure 1 Measure 2 Alt Exclusion 2** Measure 3 #1 Alt Exclusion** Measure 3, #2	**OBJ 10** Measure 1 Measure 2 Alt Exclusion 2** Measure 3, #1 Alt Exclusion 3** Measure 3, #2 (?)	**OBJ 10** Measure 1 Measure 2 Alt Exclusion 2** Measure 3, #1 Alt Exclusion 3**	**OBJ 10** Measure 1 Measure 2 Alt Exclusion 2** Measure 3, #1 Alt Exclusion 3**

*This measure's requirements differs between 2015 and 2016, so the measure language in 2015 will be different form the measure language in 2016.

** The alternate exclusions for public health measures must be displayed along with the original measures, since the EP will need to select the specific measures to be excluded. In Stage 1 the alternate exclusions apply to all public health measures, while in Stage 2 the alternate exclusions can only apply to measures 2 and 3. Regardless of how many alternate exclusions claimed, the EP must still attest to at least 1 measure in Stage 1 and 2 measures in Stage 2.

*** These will not display in the State Level Registry.

ELIGIBLE HOSPITALS

2015 Stage 1	2015 Stage 2	2016 Stage 1	2016 Stage 2
Objective 1 Measure 1	**Objective 1** Measure 1	**Objective 1** Measure 1	**Objective 1** Measure 1
Objective 2 Measure 2 ***Alt Objective 2*** Alt Measure 1 Measure 1**	**Objective 2** Measure 1 Measure 2	**Objective 2** Measure 1 Measure 2	**Objective 2** Measure 1 Measure 2
Objective 3 Measure 1 Alt Measure 1 Measure 2** Alt Exclusion 2** Measure 3** Alt Exclusion 3**	**Objective 3** Measure 1 Measure 2 Measure 3	**Objective 3** Measure 1 Measure 2** Alt Exclusion 2** Measure 3 Alt Exclusion 3**	**Objective 3** Measure 1 Measure 2 Measure 3

2015 Stage 1	2015 Stage 2	2016 Stage 1	2016 Stage 2
Objective 4** Measure 1** Alt Exclusion 1**	**Objective 4**** Measure 1** Alt Exclusion 1**	**Objective 4**** Measure 1** Alt Exclusion 1**	**Objective 4**** Measure 1** Alt Exclusion 1**
Objective 5** Measure 1** Alt Exclusion 1	**Objective 5** Measure 1	**Objective 5** Measure 1	**Objective 5** Measure 1
Objective 6** Measure 1** Alt Exclusion 1**	**Objective 6** Measure 1	**Objective 6** Measure 1	**Objective 6** Measure 1
Objective 7** Measure 1** Alt Exclusion 1**	**Objective 7** Measure 1	**Objective 7** Measure 1	**Objective 7** Measure 1
Objective 8 Measure 1 Measure 2 Alt Exclusion 2	**Objective 8** Measure 1 Measure 2	**Objective 8** Measure 1 Measure 2	**Objective 8** Measure 1 Measure 2
Objective 9 No changes made to the SLR.	**Objective 9** No changes made to the SLR.	**Objective 9** No changes made to the SLR.	**Objective 9** No changes made to the SLR.
Objective 10 Measure 1 Measure 2 Alt Exclusion* Measure 3 #1 Alt Exclusion* Measure 3 #2 Alt Exclusion Measure 3 #3 Measure 4	**Objective 10** Measure 1 Measure 2 Measure 3 #1 Alt Exclusion 3* Measure 3 #2 Measure 3 #3 Measure 4	**Objective 10** Measure 1 Measure 2 Measure 3#1 Alt Exclusion* Measure 3 #2 Measure 3 #3 Measure 4	**Objective 10** Measure 1 Measure 2 Measure 3 #1 Alt Exclusion 3* Measure 3 #2 Measure 3 #3 Measure 4

*The alternate exclusions for the public health measures must be displayed along with the original measures, since the EH will need to select the measures to be excluded. For Stage 1, the alternate exclusions apply to all measures, while in Stage 2 only measure 3 (specialized registries) can have an alternate exclusions. Regardless of the number of alternate exclusions claimed, EHs must attest to at least 2 measures in Stage 1 and 3 measures in Stage 2.
** These will not display in the State Level Registry.

Timeline

- Closure of 2015 MU attestation under the old rule (EPs and EHs).
    - December 15, 2015
- Deployment of 2015 MU attestations under the new rule (EPs and EHs).
    - August 30, 2016
- Closure of tail period for 2015 MU attestations under the new rule (EPs and EHs).
    - December 13, 2016
- Deployment of 2016 MU attestations (EPs and EHs).
    - December 13, 2016
- Closure of tail period for 2016 MU attestations (EPs and EHs).
    - May 2, 2017
- Closure of AIU attestations.
    - AIU attestations will close for 2015 and 2016 when the MU attestations close for each year under the modification rule.

Outreach

DHCS will use multiple communication channels to inform hospitals and professionals about the attestation timelines for 2015-2017 including, but not limited to:

- The State Level Registry Homepage—DHCS will update this periodically as information on timelines become available from Conduent and as plans are approved by CMS.

- California Technical Assistance Program (CTAP)—DHCS meets on a regular basis with the four contractors that have taken over the job of the regional extension centers in providing technical assistance to eligible professions for the Medi-Cal EHR Incentive Program in California. DHCS will work with the CTAP contractors to disseminate information about the timeline for attestations under the 2015-2017 Modification Rule.

- California Hospital Association (CHA)—DHCS is working with CHA to publish a newsletter to all hospitals in California about the Medi-Cal EHR Incentive Program and new deadlines under the 2015-2017 Modification Rule.

- E-mail Announcements—DHCS periodically issues e-mail announcements about incentive program changes to key stakeholders. These announcements are in turn are routinely forwarded and published on the Internet and other media. DHCS anticipates sending out several e-mail announcements regarding the implementation of the 2015-2017 Modification Rule.

- Bi-Monthly Stakeholder Communication Update – Provides update of important events and actions at DHCS to stakeholders. This communication medium will be used to communicate program status to EHs and EPs.

Prepayment Validation

DHCS will continue to carry out prepayment validation of provider eligibility using the same methodology as in previous years. This is principally focused on reviewing supporting documentation as well as documentation of encounter numbers (for professionals) and hospital cost reports (for hospitals). Other validation is conducted through business rules build into the SLR. DHCS, like the Medicare EHR Incentive Program, does not conduct prepayment validation of meaningful use (MU) attestations, although providers are able to upload documents supporting MU attestations into the SLR.

Post-Payment Auditing

The 2015 changes to MU mainly involve the elimination of several measures and the introduction of alternate exclusions that allow providers to skip several measures. Both in the preamble to the rule and in national telephone conferences, CMS staff have stated that use of these alternative exclusions cannot and should not be audited. For this reason, DHCS has decided not to make any changes in post-payment auditing strategy at this point, but will inform CMS if such changes are planned in the future

IAPD Changes

DHCS is not requesting an update to the IAPD for the 2015 modifications because all SLR changes are financed through DHCS's fiscal intermediary contract with Xerox, as part of maintenance of operation for the SLR.

APPENDIX 22:   EXCLUDED AID CODES FOR MEDI-CAL EHR INCENTIVE PROGRAM

Aid Code	Program Description
2V	Trafficking and Crime Victims Assistance Program (TCVAP). Refugee Medical Assistance (RMA). Covers non-citizen victims of human trafficking, domestic violence and other serious crimes.
4V	TCVAP-RMA. Covers non-citizen victims of human trafficking, domestic violence and other serious crimes.
65	Katrina-Covers eligible evacuees of Hurricane Katrina.
7M	Minor Consent Program. Covers eligible minors at least 12 years of age and under the age of 21. Limited to services related to Sexually Transmitted Diseases, sexual assault, drug and alcohol abuse, and family planning. Paper Medi-Cal ID Card issued.
7N	Minor Consent Program. Covers eligible pregnant minors under the age of 21. Limited to services related to pregnancy and family planning. Paper Medi-Cal ID card issued.
7P	Minor Consent Program. Covers eligible minors at least 12 years of age and under the age of 21. Limited to services related to Sexually Transmitted Diseases, sexual assault, drug and alcohol abuse, family planning, and outpatient mental health treatment. Paper Medi-Cal ID card issued.
7R	Minor Consent Program. Covers eligible minors under age 12. Limited to services related to family planning and sexual assault. Paper Medi-Cal ID card issued.
71	Medi-Cal Dialysis Only Program/Medi-Cal Dialysis Supplement Program (DP/DSP). Covers eligible persons of any age who are eligible only for dialysis and related services.
73	Total Parenteral Nutrition (TPN). Covers eligible person of any age who are eligible for parenteral hyper alimentation and related services and persons of any age who are eligible under the Medically Needy or Medically Indigent Programs.
81	MI-Adults Aid Paid Pending

APPENDIX 23: CALIFORNIA HEALTH AND SAFETY CODE 1204(A)

California Health and Safety Code Section 1204(a)

1204. Clinics eligible for licensure pursuant to this chapter are primary care clinics and specialty clinics.

(a) (1) Only the following defined classes of primary care clinics shall be eligible for licensure:

(A) A "community clinic" means a clinic operated by a tax-exempt nonprofit corporation that is supported and maintained in whole or in part by donations, bequests, gifts, grants, government funds or contributions that may be in the form of money, goods, or services. In a community clinic, any charges to the patient shall be based on the patient's ability to pay, utilizing a sliding fee scale. No corporation other than a nonprofit corporation, exempt from federal income taxation under paragraph (3) of subsection (c) of Section 501 of the Internal Revenue Code of 1954 as amended, or a statutory successor thereof, shall operate a community clinic; provided, that the licensee of any community clinic so licensed on the effective date of this section shall not be required to obtain tax-exempt status under either federal or state law in order to be eligible for, or as a condition of, renewal of its license. No natural person or persons shall operate a community clinic.

(B) A "free clinic" means a clinic operated by a tax-exempt, nonprofit corporation supported in whole or in part by voluntary donations, bequests, gifts, grants, government funds or contributions that may be in the form of money, goods, or services. In a free clinic there shall be no charges directly to the patient for services rendered or for drugs, medicines, appliances, or apparatuses furnished. No corporation other than a nonprofit corporation exempt from federal income taxation under paragraph (3) of subsection (c) of Section 501 of the Internal Revenue Code of 1954 as amended, or a statutory successor thereof, shall operate a free clinic; provided, that the licensee of any free clinic so licensed on the effective date of this section shall not be required to obtain tax-exempt status under either federal or state law in order to be eligible for, or as a condition of, renewal of its license. No natural person or persons shall operate a free clinic.

(2) Nothing in this subdivision shall prohibit a community clinic or a free clinic from providing services to patients whose services are reimbursed by third-party payers, or from entering into managed care contracts for services provided to private or public health plan subscribers, as long as the clinic meets the requirements identified in subparagraphs (A) and (B). For purposes of this subdivision, any payments made to a community clinic by a third-party payer, including, but not limited to, a health care service plan, shall not constitute a charge to the patient. This paragraph is a clarification of existing law.

APPENDIX 24: LA COUNTY GROUP PROPOSAL

Los Angeles County Proposal for Approval of County-Specific Groups for Medi-Cal Electronic Health Record Incentive Payment Purposes
8/28/2012

BACKGROUND ON LOS ANGELES COUNTY'S PUBLIC HOSPITAL AND HEALTH CARE SYSTEM

The Los Angeles County (the "County") Department of Health Services ("DHS") operates the second largest public health system in the nation. DHS' health care system consists of four Designated Public Hospitals ("DPH") and numerous clinics, which provide inpatient hospital, outpatient hospital, and clinic services, train physicians and other health care clinicians, and conduct patient-care related research. These DPHs and clinics constitute the public "safety net" providers (providers of last resort) in their communities, treating a large number of uninsured and Medi-Cal patients every year. DHS' patient population, which consists primarily of the more than two million County residents without health insurance, uses these providers as their source of primary, urgent, and specialty care. Many of the services to the uninsured are paid in whole or in part by Medicaid under the State's Section 1115 Medicaid demonstration projects.

Because of the size and complexity of the County, DHS' health care services are operationally, clinically, and financially integrated at a regional level. DHS operates four DPHs: Harbor-UCLA Medical Center; LAC+USC Medical Center; Olive View-UCLA Medical Center; and Rancho Los Amigos National Rehabilitation Center. Each of these DPHs has a hospital outpatient department ("HOPD"), which includes many individual clinics. The County also operates two Multi-Service Ambulatory Care Centers ("MACC"); six Comprehensive Health Centers ("CHC"); and 14 primary care Health Centers ("HC"). The CHCs, HCs, and the High Desert MACC are organized into five different geographic "clusters." Four additional HCs are located at juvenile hall facility sites. Approximately 1,500 non-hospital based Eligible Professionals ("EP"), of which more than 600 are employed by the County, provide services in these HOPDs and clinic sites.

The HOPDs and DHS clinics (*i.e.,* MACCs, CHCs and HCs) are reimbursed under special payment rules under the California State Medicaid Plan, Attachment 4.19-B, Supplement 5. Medi-Cal reimburses these providers on the basis of an all-inclusive, per-visit rate. The costs that form the basis for these per-visit Medi-Cal rates, which include the costs of covered professional

services,[104] are determined based on the costs reported on the DHCS ("CBRC") Cost Reports submitted to the California Department of Health Care Services ("DHCS").

In total, 11 Medi-Cal CBRC Cost Reports are submitted to DHCS by the County. For cost-reporting purposes, the HOPDs and free-standing clinics are categorized as follows:

(1) each HOPD reports its aggregate costs and visits on a separate Medi-Cal CBRC Cost Report (totaling four Cost Reports);

(2) the clinics[105] in each of the five geographic clusters report their aggregate costs and visits on a separate Medi-Cal CBRC Cost Report for each geographic cluster (totaling five Cost Reports) (although each clinic site has a unique National Provider Identifier ("NPI") that it uses for billing purposes);

(3) the Martin Luther King Jr. MACC reports its aggregate costs and visits on a separate Medi-Cal CBRC Cost Report; and

(4) the four free-standing clinics in the juvenile hall facilities report their aggregate costs and visits on a single Medi-Cal CBRC Cost Report (although each clinic site has a unique NPI that it uses for billing purposes).

STATE'S DEFINITION OF A "GROUP" FOR PURPOSES OF EHR INCENTIVE PAYMENTS FOR ELIGIBLE PROFESSIONALS

Under the State Medicaid Health Information Technology Plan, there are three types of groups that are currently recognized for Medi-Cal EHR incentive payment purposes: (1) a clinic that is licensed by the California Department of Public Health ("1204a clinics"); (2) a group of providers that operates as a unified financial entity and has overarching oversight of clinical quality with a single Federal Employer Identification Number ("FEIN"), but subgroups of providers can have separate NPIs; and (3) a DPH System, defined by a single Tax Identification Number ("TIN"). The State has noted that it will consider exceptions to Category 3, on a case-by-case basis, to allow DPHs to create multiple groups even though they use a single TIN, provided that the proposed groups follow operational and clinical oversight lines of authority and the encounters of all providers under the designated group are used to establish the appropriate group's volume.

REQUEST FOR EXCEPTION TO THE DEFINITION OF THE "GROUP" FOR A DESIGNATED PUBLIC HOSPITAL SYSTEM

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[104] State Medicaid Plan, Cost-Based Reimbursement, Attachment 4.19-B, Supplement 5, pp. 1-2.

[105] The clinics include HCs and CHCs, and, in the case of the Antelope Valley Cluster, the High Desert MACC.

DHS is requesting an exception from the definition of a group as established for DPH systems for two reasons.

First, it would not be appropriate to require DHS to register all County EPs in a single group based on the County's TIN, because such a group would include EPs who will not have access to DHS' certified EHR technology. The County has a single TIN, which is used by DHS, as well other County entities, such as the Department of Mental Health and the Sheriff's Department, which also provide health care services. Thus, the County's TIN is not associated solely with the DHS health care providers. DHS plans to implement an EHR system for DHS providers; however, the EHR system will not extend to the Department of Mental Health's clinics or the Sheriff's Department jail health care services. Therefore, DHS should be permitted to form groups that use the County's TIN but include only the CBRCs operated by DHS.

Second, because the CBRC cost reporting structure reflects the existing financial, clinical, and operational structure of DHS, it would be administratively burdensome to require DHS to track and report data at a system-wide level for purposes of qualification for the EHR incentive payments. Such an approach would hamper DHS' ability to use a readily available data source as documentation of visits for purposes of calculating Medicaid patient volume. Further, as described above, the visit, payer, and cost data for the CBRC sites are reported on 11 different Medi-Cal CBRC Cost Reports, which are filed annually and are audited by DHCS. Therefore, DHS should be approved to form groups for purposes of EP qualification for the EHR incentive payment program that are consistent with its CBRC cost reporting structure to facilitate its reporting of accurate, auditable visit data for the calculation of Medicaid patient volume.

PROPOSAL FOR DEFINITION OF GROUP BASED ON MEDI-CAL CBRC COST REPORTING STRUCTURE

DHS requests an exception to define its "groups" (hereinafter referred to as "CBRC Groups") consistent with the Medi-Cal CBRC Cost Reports for purposes of registering through the State Level Registry for EHR incentive payments. This group reporting structure for EHR incentive payments would directly reflect the CBRC cost reporting structure. The groups are defined to include all DHS owned and operated clinics and hospital outpatient departments, including the listed CRBC sites and any satellite clinics billed under the listed NPIs. Each proposed CBRC Group would include either one or multiple NPIs, and all CBRC Groups would share a single TIN. See Attachment A for the names of the CBRC Groups, and the names, addresses, and NPIs of the proposed CBRC Groups and their component clinic sites. We believe these proposed groups best reflect the County's financial, organizational, and operational structure for the following reasons.

First, each of the 11 CBRC Groups files a separate Medi-Cal CBRC Report. Accordingly, this proposed definition of a CBRC Group would enable the County to provide appropriate documentation for the calculation of Medicaid patient volume that could be sustained upon audit.

Second, the CBRC Groups are consistent with the County's organizational structure. The use of multiple groups for DHS is necessary, in part, because of the size of the patient population served by the County and the size of the County's health care service area. The clinics that comprise each CBRC Group are geographically proximate to each other, and EPs often practice at multiple clinics in the same region. Therefore, many of the clinical and administrative services relevant to the EPs, such as credentialing, creating work schedules, and providing clinical oversight for the quality of healthcare services, take place at the level of CBRC cost reporting, *i.e.*, both at the level of the HOPDs and the clinic groups – all of which are represented in the Medi-Cal CBRC Cost Reports.

Third, this proposal also reflects the planned implementation of EHR in the County. DHS' preliminary plan is to phase in the implementation of EHR systems for EPs by CBRC Group. This means that the implementation will take place sequentially for each of the proposed CBRC Groups.

Fourth, this proposal results in qualifying only those clinic sites that would qualify independently. Although we propose to report the Medicaid patient volume data at the CBRC Cost Report level, we have confirmed that each of the CBRC sites in 10 of the 11 proposed CBRC Groups would independently satisfy the 30 percent Medicaid patient volume threshold. (The potential exception is proposed CBRC Group 11, the juvenile hall CBRC Group, which may not satisfy the Medicaid patient volume threshold.) Nevertheless, based on the availability of auditable data to support the patient volume calculations, the clinical and financial organization of the County's clinics, and DHS' EHR implementation plans, we believe that use of the proposed CBRC Groups is the most logical way of defining a "group" for DHS.

Finally, DHS' proposed definition of a "group" satisfies conditions set forth under federal regulations that allow group practices to calculate patient volume at the group practice/clinic level,[106] provided they meet the State's criteria for operational and clinical oversight lines of authority and use of the encounters of providers under the designated group to establish the group's volume.

CALCULATION OF MEDICAID PATIENT VOLUME BASED ON CBRC GROUPS

Under the DHS proposal, the Medicaid patient volume will be calculated based on the total Medicaid encounters for the most recent year for which both the annual Medi-Cal CBRC Cost Reports and the Workbooks submitted under Paragraph 14 of the Section 1115 demonstration project that was approved in 2005 (often referred to as the "Paragraph 14 Workbooks" or the "P-14

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[106] 42 C.F.R. § 495.306(h).

Workbooks") have been filed.[107] As required by the State Medicaid Health Information Technology Plan, the Medicaid patient volume calculation will be based on the Medicaid visits of all providers of professional services in the CBRC Groups that are captured through the CBRC payment mechanism, including physicians, physician assistants, nurse practitioners, dentists, certified nurse midwives, and optometrists. For purposes of this proposal, a visit is equivalent to an encounter.

The Medicaid patient volume percentage for each CBRC Group will be calculated as follows. The numerator will be the total of the Medi-Cal CBRC visits, Medi-Cal managed care visits, Safety Net Care Pool ("SNCP") visits, Coverage Initiative and Low Income Health Program ("LIHP") visits[108], and Medi-Cal Fee-for-Service ("FFS") visits.[109] The denominator will be the total visits. The numerator will be divided by the denominator, and the result will be the Medicaid patient volume percentage.[110] The sources of data will be described below.

<u>Medi-Cal and Total Visit Counts</u>

The Medi-Cal and total visit counts that will be used for this calculation are reported on the following lines of the Medi-Cal CBRC Cost Reports for each of the 11 proposed groups.

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[107] The references in this Section to forms, schedules, columns and line numbers correspond to the Medi-Cal CBRC Cost Reports and P-14 Workbooks for the July 1, 2010 to June 30, 2011 cost reporting year. In the event that the CBRC Cost Reports or P-14 Workbooks are revised in subsequent years of the demonstration project, and/or there are changes in the forms, schedules, columns and lines, data comparable to that identified herein shall be used.

[108] The Coverage Initiative enrollees were transitioned into the Low Income Health Program as of November 1, 2010.

[109] The SNCP, Coverage Initiative, and LIHP visits are funded in part by Medicaid funds through California's Section 1115 demonstration projects, and therefore are considered Medicaid encounters for purposes of the Medi-Cal EHR incentive program.

[110] This method for calculating the Medicaid patient volume excludes certain visits that may permissibly be counted as Medicaid encounters for this EHR incentive program (i.e., Child Health and Disability Prevention Program, Family PACT, PACE Program, and, for CBRC groups that are not HOPDs, dual eligibles) from the numerator; however, these visits are included in the denominator. It is unnecessary to include these visits in the numerator because DHS' Medicaid patient volume percentage will far exceed the minimum threshold. Therefore, DHS proposes to use the total Medicaid visits as reported in the existing, audited Medi-Cal CBRC Cost Reports and P-14 Workbooks as its Medicaid encounters, even though such an approach results in an underrepresentation of its Medicaid patient volume, in order to ensure accurate and consistent reporting of encounters across Medicaid programs.

There are currently two different CBRC Cost Report forms: one for hospital CBRCs, and one for other CBRCs.

Table 1: Medi-Cal CBRC Cost Report: Source of Medi-Cal and Total Visit Data

No.	Name	CBRC Form	Medi-Cal Visits	Total Visits
1	LAC+USC Medical Center	1	Column 6, Lines 90 and 90.02 [8]	Column 2, Lines 90, 90.01, and 90.02
2	Northeast Cluster	2	Line 6	Line 4
3	Harbor-UCLA Medical Center	1	Column 6, Lines 90 and 90.02	Column 2, Lines 90 and 90.02
4	Coastal Network	2	Line 6	Line 4
5	Southwest Network	2	Line 6	Line 4
6	Martin Luther King Jr.- MACC	2	Line 6	Line 4
7	Rancho Los Amigos National Rehabilitation Center	1	Column 6, Lines 90 and 90.02	Column 2, Lines 90 and 90.02
8	Olive View - UCLA Medical Center	1	Column 6, Lines 90 and 90.02	Column 2, Lines 90 and 90.02
9	San Fernando Cluster[9]	2	Line 6	Line 4
10	Antelope Valley Cluster	2	Line 6	Line 4
11	Juvenile Court Health Services	2	Line 6	Line 4

[8] The number of Medi-Cal visits reported on the CBRC Cost Report under-represents the total number of Medi-Cal visits because it does not include the specialty mental health visits at the outpatient psychiatric clinic, which are not paid under the CBRC reimbursement system. However, the Medi-Cal visits at the outpatient psychiatric clinic are reported on the P-14 Workbook (Schedule 1.2, Column 4c 4g, Line 09001) and will be added to Lines 90 and 90.2 to arrive at a total Medi-Cal visit count.

[9] Glendale Health Center is jointly operated by DHS and the County Department of Public Health. Because it provides predominantly public health services, it is not treated as a CBRC, and its Medi-Cal DHS visits and total DHS visits are not reflected in any of the CBRC Cost Reports. As a result, the County will provide a supplemental worksheet identifying the total visits, Medi-Cal DHS visits, and Medi-Cal Managed Care DHS visits at Glendale Health Center, and these visits will be added to the applicable visits for the San Fernando Cluster. The DHS SNCP visits, DHS Coverage Initiative visits, and DHS LIHP visits for Glendale Health Center will be reported on a separate line from the San Fernando Valley Cluster visits on Schedule 4 of the P-14 Workbook.

Please see Attachment B for examples of the hospital and non-hospital CBRC forms described above that were used for FY 2010-2011 cost reporting.

<u>Medi-Cal Managed Care, SNCP, Coverage Initiative and LIHP, and Medi-Cal FFS Visits</u>

The number of Medi-Cal managed care, SNCP, Coverage Initiative and LIHP, and Medi-Cal FFS visits will be taken from the P-14 Workbooks filed by the County. Although the County submits only four P-14 Workbooks, the visits are separately identified for each CBRC Group. Attachment A also identifies the P-14 Workbook on which these additional visits are reported. The visits from the columns and lines in the table on the following pages will be added to the numerator.

Table 2: P-14 Workbook: Source of Medi-Cal Managed Care, SNCP, Coverage Initiative and LIHP, and Medi-Cal FFS Visit Data

No.	Name	P-14 Workbook Schedule	Medi-Cal Managed Care Visits	SNCP Visits[10]	Coverage Initiative Visits[11]	LIHP Visits[12]	Medi-Cal FFS Psych. Visits
1	LAC+USC Medical Center	Schedule 1.2	Column 3c/3g, Line 09000; Column 4/c/4g, Line 09001 for psych. visits	Column 7c/7g, Line 09000	Column 8c-1/8g-1, Line 09000	Column 8c, 9c, 9g, 9k, Line 09000	Column 11a Line 09001
2	Northeast Cluster	LAC+USC Medical Center, Schedule 4	N/A	Non-Hospital and Contracted Hospital Costs Related to the Uninsured, Columns for applicable period, Line for County OP Clinics (non-FQHC)	Non-Hospital and Contracted Hospital Costs Related to the 2005 Waiver Coverage Initiative (CI), Columns for applicable period, Line for County OP Clinics (non-FQHC)	Non-Hospital and Contracted Hospital Costs Related to the 2010 Health Care Coverage Initiative (HCCI), Columns for applicable period, Line for County OP Clinics (non-FQHC)	N/A
3	Harbor-UCLA Medical Center	Schedule 1.2	Column 3c/3g, Line 09000	Column 7c/7g, Line 09000	Column 8c-1/8g-1, Line 09000	Column 8c, 9c, 9g, 9k, Line 09000	N/A

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No.	Name	P-14 Workbook Schedule	Medi-Cal Managed Care Visits	SNCP Visits[10]	Coverage Initiative Visits[11]	LIHP Visits[12]	Medi-Cal FFS Psych. Visits
4	Coastal Network	Harbor-UCLA Medical Center, Schedule 4	N/A	Non-Hospital and Contracted Hospital Costs Related to the Uninsured, Columns for applicable period, Line for County OP Clinics (non-FQHC) – Coastal CHC/HC	Non-Hospital and Contracted Hospital Costs Related to the 2005 Waiver Coverage Initiative (CI), Columns for applicable period, Line for County OP Clinics (non-FQHC) – Coastal CHC/HC	Non-Hospital and Contracted Hospital Costs Related to the 2010 Health Care Coverage Initiative (HCCI), Columns for applicable period, Line for County OP Clinics (non-FQHC) – Coastal CHC/HC	N/A
5	Southwest Network	Harbor-UCLA Medical Center, Schedule 4	N/A	Non-Hospital and Contracted Hospital Costs Related to the Uninsured, Columns for applicable period, Line for County OP Clinics (non-FQHC) – Southwest (SW) CHC/HC	Non-Hospital and Contracted Hospital Costs Related to the 2005 Waiver Coverage Initiative (CI), Columns for applicable period, Line for County OP Clinics (non-FQHC) –Southwest (SW) CHC/HC	Non-Hospital and Contracted Hospital Costs Related to the 2010 Health Care Coverage Initiative (HCCI), Columns for applicable period, Line for County OP Clinics (non-FQHC) – Southwest (SW) CHC/HC	N/A
6	Martin Luther King Jr.- MACC	Harbor-UCLA Medical Center, Schedule 4	N/A	Non-Hospital and Contracted Hospital Costs Related to the Uninsured, Columns for applicable period, Line for County OP Clinics (non-FQHC) – MLK MACC	Non-Hospital and Contracted Hospital Costs Related to the 2005 Waiver Coverage Initiative (CI), Columns for applicable period, Line for County OP Clinics (non-FQHC) – MLK MACC	Non-Hospital and Contracted Hospital Costs Related to the 2010 Health Care Coverage Initiative (HCCI), Columns , for applicable period, Line for County OP Clinics (non-FQHC) – MLK MACC	N/A
7	Rancho Los Amigos National Rehabilitation Center	Schedule 1.2	Column 3c/3g, Line 09000	Column 7c/7g, Line 09000	Columns 8c-1/8g-1, Line 09000	Column 8c, 9c, 9g, 9k, Line 09000	N/A
8	Olive View - UCLA Medical Center	Schedule 1.2	Column 3c/3g, Line 09000	Column 7c/7g, Line 09000	Column 8c-1/8g-1, Line 09000	Column 8c, 9c, 9g, 9k, Line 09000	N/A

No.	Name	P-14 Workbook Schedule	Medi-Cal Managed Care Visits	SNCP Visits[10]	Coverage Initiative Visits[11]	LIHP Visits[12]	Medi-Cal FFS Psych. Visits
9	San Fernando Cluster[13]	Olive View - UCLA Medical Center, Schedule 4	N/A	Non-Hospital and Contracted Hospital Costs Related to the Uninsured, Columns for applicable period, Line for County OP Clinics (non-FQHC) – San Fernando Valley (SFV) CHC/HC, Glendale (GL) - HC	Non-Hospital and Contracted Hospital Costs Related to the 2005 Waiver Coverage Initiative (CI), Columns for applicable period, Line for County OP Clinics (non-FQHC) – San Fernando Valley (SFV) CHC/HC, Glendale (GL) - HC	Non-Hospital and Contracted Hospital Costs Related to the 2010 Health Care Coverage Initiative (HCCI), Columns for applicable period,, Line for County OP Clinics (non-FQHC) – San Fernando Valley (SFV) CHC/HC, Glendale (GL) - HC	N/A
10	Antelope Valley Cluster	Olive View - UCLA Medical Center, Schedule 4	N/A	Non-Hospital and Contracted Hospital Costs Related to the Uninsured, Columns for applicable period, Line for County OP Clinics (non-FQHC) – Antelope Valley (AV) Health System	Non-Hospital and Contracted Hospital Costs Related to the 2005 Waiver Coverage Initiative (CI), Columns , for applicable period, Line for County OP Clinics (non-FQHC) – Antelope Valley (AV) Health System	Non-Hospital and Contracted Hospital Costs Related to the 2010 Health Care Coverage Initiative (HCCI), Columns for applicable period, Line for County OP Clinics (non-FQHC) – Antelope Valley (AV) Health System	N/A
11	Juvenile Court Health Services[14]	None	None	None	None	None	None

[10] The number of SNCP visits will be reduced by 13.95%, which represents the percentage of total provider expenditures attributable to non-emergency care provided to non-qualified aliens, as established in Para. 40(a) of the Special Terms and Conditions of the California Bridge to Reform Demonstration.

[11] The Coverage Initiative was in effective from July 1, 2010 through October 31, 2010. Thus, the data in this column reflects visits for four months.

[12] Effective November 1, 2010, the Coverage Initiative was replaced by two separate LIHP programs – the HCCI and the MCE program. Thus, the data in the columns for the HCCI and MCE program reflects visits for eight months (11/1/2010 – 7/31/2011) for Fiscal Year ("FY") 2011. In future FYs, the data for the HCCI and MCE programs will each be reported for the full 12-month period.

[13] See note 8 above regarding visit information for Glendale Health Center.

[14] None of the costs or visits for the Juvenile Hall CBRC Group are reported on any of the P-14 Workbooks filed by the County.

CONCLUSION

        In summary, we request that DHCS approve this proposal to define groups for DHS consistent with the 11 Medi-Cal CBRC Cost Reports and to calculate Medicaid patient volume based on these 11 CBRC Groups. Given the size, number of patients served, and unique reimbursement structure of DHS, we believe that this definition of a "group" is most appropriate for DHS and best reflects its financial, organizational, and operational structure, as well as being consistent with the criteria established by DHCS for an exception to the definition of a group.

APPENDIX 25: AMERICAN ACADEMY OF FAMILY PHYSICIANS PRACTICE PROFILE STUDY

Average number of family physician visits per week and average number of patients in various settings, June 2008

	Office Visits	Hospital Visits	Nursing Home Visits	House Calls	Patients Supervised Under Home Health Care	Nursing Home Patients Supervised	Hospice Patients Supervised	Patients with Free or Discounted Care
Total	84.9	8.1	2.3	0.6	7.5	9.6	2.1	9.5
Census Division								
New England	77.3	3.7	1.4	. 1.0	9.7	5.4	1.0	10.4
Middle Atlantic	90.4	9.1	3.0	0.5	1.0	15.1	1.3	6.9
East North Central	84.8	8.2	2.7	0.9	6.4	10.3	1.4	7.2
West North Central	82.3	10.7	2.8	0.2	7.9	13.7	2.5	7.0
South Atlantic	90.3	7.8	3.3	0.8	7.3	11.1	3.1	11.0
East South Central	116.5	14.2	3.5	0.6	13.7	10.4	5.1	9.4
West South Central	92.9	9.3	2.6	0.8	10.9	11.7	2.9	12.8
Mountain	63.9	6.4	1.1	.0.3	6.1	5.0	1.4	9.7
Pacific	74.9	3.9	1.9	0.4	3.2	7.1	1.1	10.4
Location								
Urban	82.4	6.4	1.9	0.6	6.8	8.2	1.9	9.0
Rural	92.9	13.4	3.7	0.6	9.8	13.9	2.7	11.0
Completion of FP Residency								
FP Residency Graduate	83.9	8.1	2.3	0.6	7.5	9.7	2.1	9.6
Not FP Residency Graduate	101.5	8.9	2.2	0.3	7.7	7.6	2.4	7.9

Based on survey responses of 1,054 active members of the American Academy of Family Physicians, including those with no visits in any setting.

Source: American Academy of Family Physicians, Practice Profile I Survey, June 2008

APPENDIX 26: METHODOLOGY FOR IDENTIFYING PANEL MEMBERS

INGENIX Department of **Health Care Services**

Scope Document/Data Request Form

Date: May 4, 2011
From: Daria Rostovtseva
To: Dr. Larry Dickey
Copies: Steve Yegge, Raul Ramirez, Steve Grimshaw, Karen Duong

IR #: 6396
Subject: Individual Managed Care providers with a panel of 300+ patients in 2010

Background
The Office of Health Information Technology (OHIT) would like to estimate the proportion of individual Managed Care providers who may be prequalified for the EHR incentive payment program.

Scope
Ingenix will prepare a report on the distribution of the estimated panel size per provider in 2010, by provider type. The proportion of providers with panels of 300 or more patients will be calculated.

Proposed Selection Criteria
Program codes 02 and 04 will be included (02 – Managed Care plans, 04 - COHS).

Claims and encounters with the following aid codes will be excluded: 0R, 0T, 2V, 4V, 53, 65, 7M, 7N, 7P, 7R, 71, 73, and 81.

Claim types identifying pharmacy and institutional charges, such as room & board, will be excluded (fi_claim_type_cd= '01','02','03' and claim_type_cd='2','3').

Patient panel will be estimated as the number of unique patients seen by the provider in 2010. Unique providers are identified by NPI and Service Location Number. Unique patients are identified by patient CIN. Year of service is determined by the Service-From date on the claim header.

We will use the matched provider number to capture all Managed Care records associated with the provider. All providers with valid NPIs will be included, regardless of whether the provider is found in the PMF.

Patients will be attributed to providers according to the following logic. If the rendering provider field is populated and the number can be linked to a valid NPI, the patient will be attributed to this NPI. Otherwise, the encounter will be attributed to the billing provider NPI.

Provider types 005 (nurse midwife), 007 (nurse practitioner), 020 (optometrists) 026 (physicians), 099 (dentists) will be included. Note that provider type is unknown for

providers not present in the PMF. However, taxonomy codes are available for all providers with valid NPIs from the CMS NPI file. To capture all providers of these types, we will utilize the Provider Type-Taxonomy crosswalk available in the MIS/DSS data warehouse to identify the universe of NPIs that match these criteria. The diagram below shows, in a simplified way, the steps involved in this process:

Provider Type- Taxonomy Crosswalk		CMS NPI file		Managed Care Encounter Data
Identify Taxonomy Codes associated with given provider types	→	Identify the universe of NPIs with given Taxonomy Codes	→	Search encounters that match selected NPIs
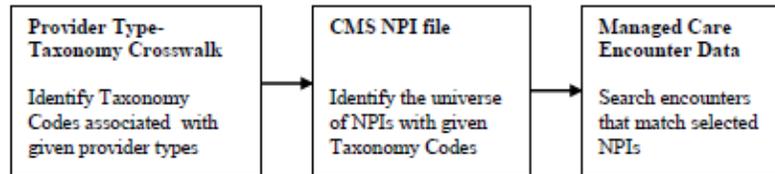
Report Format

Report will be delivered in the form of a PDF document. There will be no PHI in the report.

Proposed Report Generation and Delivery Schedule

The work proposal below assumes that the report is generated using the criteria established in this document.

Date Due	Task	Responsibility
5/6/2011	Scope approved	Ingenix/OHIT
5/16/2011	Report delivered	Ingenix
TBD	Changes requested by OHIT, report revised as necessary	Ingenix/OHIT

Data Issues

There are two significant data issue in this analysis:

- Quality of Managed Care provider information. Prior research found that provider information populated on Managed Care encounter data lacks quality, particularly on program code 02 records. Rendering provider field is frequently not populated or mapped. Both billing and rendering provider fields are often populated with numbers that cannot be matched to the available provider information.

- Data lag. Managed Care data has substantial time lags and is sometimes inconsistently submitted by health plans.

APPENDIX 27: MU REQUIREMENTS

PROGRAM YEAR 2011-2012

In Program Year 2011 and 2012, all providers attesting to MU will attest to Stage 1.

2011/12 STAGE 1 MU FOR EPS

MU Section	Requirement
Core Measures (Complete all 15)	1. CPOE 2. Drug-Drug Drug-Allergy 3. Problem List 4. E-Prescribing 5. Medication Lists 6. Medication Allergy Lists 7. Record Demographics 8. Vital Signs 9. Smoking Status 10. Report Ambulatory CQMs 11. Clinical Decision Support 12. Patient Electronic Copy 13. Patient Clinical Summaries 14. Exchange Clinical Information 15. Protect Health Information

Menu Measures	Requirement

Complete 5 out of 10. One must be a Public Health Measure.	Public Health Measures:
	   1. Syndromic Surveillance
	   2. Immunization Registry
	Additional Menu Measures:
	   3. Electronic Patient Access
	   4. Drug Formulary Checks
	   5. Clinical Lab Results
	   6. Condition List
	   7. Patient Reminders
	   8. Patient Education Resources
	   9. Medication Reconciliation
	   10. Summary of Care Record

CQM Core Measures	Requirement
Complete all 3. For any measure where the denominator is zero, a CQM Alternative Measure must be completed.	1. NQF 0013 2. NQF 0028/PQRI 114 3. NQF 0421/PQRI 128

CQM Alternate Core Measures	Requirement
Complete one for each CQM Core Measure with a denominator of zero.	1. NQF 0024 2. NQF 0041/PQRI 110 3. NQF 0038

CQM Additional Measures	Requirement
Complete 3 of 38	1. NQF 0001/PQRI 64 2. NQF 0002/PQRI 66 3. NQF 0004 4. NQF 0012 5. NQF 0014 6. NQF 0018 7. NQF 0027/PQRI 115 8. NQF 0031/PQRI 112 9. NQF 0032 10. NQF 0033 11. NQF 0034/PQRI 113 12. NQF 0036 13. NQF 0043/PQRI 111 14. NQF 0047/PQRI 53 15. NQF 0052 16. NQF 0055/PQRI 117 17. NQF 0056/PQRI 163 18. NQF 0059/PQRI 1 19. NQF 0061/PQRI 3 20. NQF 0062/PQRI 119 21. NQF 0064/PQRI 2 22. NQF 0067/PQRI 6 23. NQF 0068/PQRI 204 24. NQF 0070/PQRI 7 25. NQF 0073/PQRI 201 26. NQF 0074/PQRI 197 27. NQF 0075 28. NQF 0081/PQRI 5 29. NQF 0083/PQRI 8 30. NQF 0084/PQRI 200 31. NQF 0084/PQRI 200 32. NQF 0088/PQRI 18 33. NQF 0089/PQRI 19 34. NQF 0105/PQRI 9 35. NQF 0385/PQRI 72 36. NQF 0387/PQRI 71 37. NQF 0389/PQRI 102 38. NQF 0575/PQRI 66

2011/12 STAGE 1 FOR EH

MU Section	Requirement
Complete all 14 core measures.	1. CPOE 2. Drug-Drug/Drug Allergy 3. Problem List 4. Medication List 5. Medication Allergy List 6. Record Demographics 7. Vital Signs 8. Smoking Status 9. Report Hospital CQMs 10. Clinical Decision Support 11. Patient Health Information 12. Patient Discharge Instructions 13. Exchange Clinical Information 14. Protect Health Information

Menu Measures	Requirement
Complete 5 out of 10. One must be a Public Health Measure.	Public Health Measures: 1. Immunization Registry 2. Reportable Lab Results to Public Health Agencies 3. Syndromic Surveillance Data Submission Additional Menu Measures: 4. Drug Formulary Checks 5. Advance Directives 6. Clinical Lab Test Results 7. Patient Lists 8. Patient-Specific Education Resources 9. Medication Reconciliation 10. Transition of Care Summary

CQM Additional Measures	Requirement
Complete all 15.	1. NQF 0495 – Emergency Department (ED)-1 2. NQF 0497 – Emergency Department (ED)-2 3. NQF 0435 – Stroke-2 4. NQF 0436 – Stroke-3 5. NQF 0437 – Stroke-4 6. NQF 0438 – Stroke-5 7. NQF 0439 – Stroke-6 8. NQF 0440 – Stroke-8 9. NQF 0441 – Stroke-10 10. NQF 0371 – VTE-1 11. QF 0372 – VTE-2 12. NQF 0373 – VTE-3 13. NQF 0374 – VTE-4 14. NQF 0375 – VTE-5 15. NQF 0376 – VTE-6

PROGRAM YEAR 2013

Although the Final Rule indicates that providers will progress to Stage 2 after completing two years of Stage 1, in 2013 Stage 2 requirements were not yet defined. As such, all providers attesting to MU in Program Year 2013 will attest to the Stage 1 requirements specified below.

2013 STAGE 1 MU FOR EPS

MU Section	Requirement
Complete all 13 core measures.	1. CPOE 2. Drug-Drug Drug-Allergy 3. Problem List 4. E-Prescribing 5. Medication Lists 6. Medication Allergy Lists 7. Record Demographics 8. Vital Signs 9. Smoking Status 10. Clinical Decision Support 11. Patient Electronic Copy 12. Patient Clinical Summaries 13. Protect Health Information

Menu Measures	Requirement
Complete 5 out of 10. One must be a Public Health Measure.	Public Health Measures: 1. Syndromic Surveillance 2. Immunization Registry Additional Menu Measures: 3. Electronic Patient Access 4. Drug Formulary Checks 5. Clinical Lab Results 6. Condition List 7. Patient Reminders 8. Patient Education Resources 9. Medication Reconciliation 10. Summary of Care Record

CQM Core Measures	Requirement
Complete all 3. For any measure where the denominator is zero, a CQM Alternate Measure must be completed.	1. NQF 0013 2. NQF 0028/PQRI 114 3. NQF 0421/PQRI 128

CQM Alternate Core Measures	Requirement
Complete one for each CQM Core Measure with a denominator of zero.	1. NQF 0024 2. NQF 0041/PQRI 110 3. NQF 0038

CQM Additional Measures	Requirement
Complete 3 of 38.	1. NQF 0001/PQRI 64 2. QF 0002/PQRI 66 3. NQF 0004 4. NQF 0012 5. NQF 0014 6. NQF 0018 7. NQF 0027/PQRI 115 8. NQF 0031/PQRI 112 9. NQF 0032 10. NQF 0033 11. NQF 0034/PQRI 113 12. NQF 0036 13. NQF 0043/PQRI 111 14. NQF 0047/PQRI 53 15. NQF 0052 16. NQF 0055/PQRI 117 17. NQF 0056/PQRI 163 18. NQF 0059/PQRI 1 19. NQF 0061/PQRI 3 20. NQF 0062/PQRI 119 21. NQF 0064/PQRI 2 22. NQF 0067/PQRI 6 23. NQF 0068/PQRI 204 24. NQF 0070/PQRI 7 25. NQF 0073/PQRI 201 26. NQF 0074/PQRI 197 27. NQF 0075 28. NQF 0081/PQRI 5 29. NQF 0083/PQRI 8 30. NQF 0084/PQRI 200 31. NQF 0086/PQRI 12 32. NQF 0089/PQRI 19 33. NQF 0089/PQRI 19 34. NQF 0105/PQRI 9 35. NQF 0385/PQRI 72 36. NQF 0387/PQRI 71 37. NQF 0389/PQRI 102 38. NQF 0575/PQRI 66

2013 STAGE 1 MU FOR EHS

MU Section	Requirement
Core Measures. Complete all 12.	1. CPOE 2. Drug-Drug/Drug-Allergy 3. Problem List 4. Medication List 5. Medication Allergy List 6. Record Demographics 7. Vital Signs 8. Smoking Status 9. Clinical Decision Support 10. Patient Health Information 11. Patient Discharge Instructions 12. Protect Health Information

Menu Measures	Requirement
Complete 5 out of 10. One must be a Public Health Measure.	Public Health Measures: 1. Immunization Registry 2. Reportable Lab Results to Public Health Agencies 3. Syndromic Surveillance Data Submission Additional Menu Measures: 4. Drug Formulary Checks 5. Advance Directives 6. Clinical Lab Test Results 7. Patient Lists 8. Patient-Specific Education Resources 9. Medication Reconciliation 10. Transition of Care Summary

CQM Additional Measures	Requirement
Complete all 15.	1. NQF 0495 – Emergency Department (ED)-1 2. NQF 0497 – Emergency Department (ED)-2 3. NQF 0435 – Stroke-2 4. NQF 0436 – Stroke-3 5. NQF 0437 – Stroke-4 6. NQF 0438 – Stroke-5 7. NQF 0439 – Stroke-6 8. NQF 0440 – Stroke-8 9. NQF 0441 – Stroke-10 10. NQF 0371 – VTE-1 11. NQF 0372 – VTE-2 12. NQF 0373 – VTE-3 13. NQF 0374 – VTE-4 14. NQF 0375 – VTE-5 15. NQF 0376 – VTE-6

PROGRAM YEAR 2014

Stage 2 MU became available for the first time in Program Year 2014. Although the Final Rule specifies that those who have completed two years of Stage 1 will progress to Stage 2, in 2014 CMS issued a Flexibility Rule that allowed providers who were scheduled to begin Stage 2 in 2014 to satisfy the objectives of the earlier Stage 1 criteria instead, depending on the CEHRT edition used. To be eligible to use the Flex Rule, providers must have been unable to fully implement 2014 Edition Certified Electronic Health Record Technology (CEHRT) for Program Year 2014 due to delays in 2014 CEHRT availability The table below specifies the attestation options available based on the CEHRT used.

Attestation Stage	Requirement
Providers attesting to AIU	You must use 2014 CEHRT
Providers scheduled to report to Stage 1 Meaningful Use	**If you used:** 2011 CEHRT **These are your reporting options:** 2013 Stage 1 Objectives and CQMs **If you used:** Combo 2011 & 2014 CEHRT **These are your reporting options:** 2013 Stage 1 Objectives and CQMs or 2014 Stage 1 Objectives and CQMs **If you used:** 2014 CEHRT **These are your reporting options:** 2014 Stage 1 Objectives and CQMs
Providers scheduled to report to Stage 2 Meaningful Use	**If you used:** 2011 CEHRT **These are your reporting options:** 2013 Stage 1 Objectives and CQMs **If you used:** Combo 2011 & 2014 CEHRT **These are your reporting options:** 2013 Stage 1 Objectives and CQMs, or 2014 Stage 1 Objectives and CQMs, or 2014 Stage 2 Objectives and CQMs. **If you used:** 2014 CEHRT **These are your reporting options:** 2014 Stage 1 Objectives and CQMs*, or 2014 Stage 2 Objectives and CQMs. *Note, this scenario is only available if the provider was unable to meet the threshold for the Stage 2 Summary of Care objective because the recipients of the transmissions or referrals were impacted by issues related to 2014 EHR Technology availability delays and therefore could not implement the technology required to receive the summary of care documents.

2014 STAGE 1 MU FOR EPS

MU Section	Requirement
Core Objectives: Complete all 13 core objectives.	1. CPOE 2. Drug-Drug Drug-Allergy 3. Problem List 4. E-Prescribing 5. Medication Lists 6. Medication Allergy Lists 7. Record Demographics 8. Vital Signs 9. Smoking Status 10. Clinical Decision Support 11. Patient Electronic Copy 12. Patient Clinical Summaries 13. Protect Health Information

Menu Objectives	Requirement
Meet 5 of 9 objectives or meet or exclude all 9 objectives. One selection must be a Public Health Measure. Exclusions do not count towards the required 5 except as specified above.	Public Health Measures: 1. Syndromic Surveillance 2. Immunization Registry Additional Menu Measures: 3. Drug Formulary Checks 4. Clinical Lad Results 5. Condition Lists 6. Patient Reminders 7. Patient Education Resources 8. Medication Reconciliation 9. Summary of Care Record

CQMs	Requirement* * Complete 9 of 64 from among at least 3 of 6 domains.
Patient and Family Engagement Domain	1. CMS157 2. CMS66 3. CMS56 4. CMS90

CQMs	Requirement* * Complete 9 of 64 from among at least 3 of 6 domains.
Patient Safety Domain	5. CMS156 6. CMS139 7. CMS68 8. CMS132 9. CMS177 10. CMS179
Care Coordination Domain	11. CMS50
Population and Public Health Domain	12. CMS155 13. CMS138 14. CMS153 15. CMS117 16. CMS147 17. CMS2 18. CMS69 19. CMS82 20. CMS22
Efficient Use of Healthcare Resources Domain	21. CMS146 22. CMS166 23. CMS154 24. CMS129

CQMs	Requirement* * Complete 9 of 64 from among at least 3 of 6 domains.
Clinical Process Effectiveness Domain	25. CMS137 26. CMS165 27. CMS125 28. CMS124 29. CMS130 30. CMS126 31. CMS127 32. CMS131 33. CMS123 34. CMS122 35. CMS148 36. CMS134 37. CMS163 38. CMS164 39. CMS145 40. CMS182 41. CMS135 42. CMS144 43. CMS143 44. CMS167 45. CMS142 46. CMS161 47. CMS128 48. CMS136 49. CMS169 50. CMS141 51. CMS140 52. CMS62 53. CMS52 54. CMS77 55. CMS133 56. CMS158 57. CMS159 58. CMS160 59. CMS75 60. CMS74 61. CMS61 62. CMS64 63. CMS149 64. CMS65

2014 STAGE 2 MU FOR EPS

CQMs	Requirement
Core Objectives: Complete all 17.	1. CPOE 2. E-Prescribing 3. Demographics 4. Vital Signs 5. Smoking Status 6. Clinical Decision Support 7. Lab Test Results 8. Patient Lists 9. Patient Reminders 10. Online Health Information 11. Patient Clinical Summaries 12. Patient Education Resources 13. Medication Reconciliation 14. Summary of Care Record 15. Immunization Registries 16. Protect Health Information 17. Electronic Messaging

CQMs	Requirement
Menu Objectives: Complete 3 of 6 measures. If the provider has an exclusion from 4 or more objectives, they must meet all remaining measures.	1. Imaging Results 2. Family Health History 3. Syndromic Surveillance 4. Cancer Reporting 5. Registry Reporting 6. Electronic Notes

CQMs	Requirement* * Complete 9 of 64 from among at least 3 of 6 domains.
Patient and Family Engagement Domain	1. CMS157 2. CMS66 3. CMS56 4. CMS90
Patient Safety Domain	5. CMS156 6. CMS139 7. CMS68 8. CMS132 9. CMS177 10. CMS179
Care Coordination Domain	11. CMS50

CQMs	Requirement* * Complete 9 of 64 from among at least 3 of 6 domains.
Population and Public Health Domain	12. CMS155 13. CMS138 14. CMS153 15. CMS117 16. CMS147 17. CMS2 18. CMS69 19. CMS82 20. CMS22
Efficient Use of Healthcare Resources Domain	21. CMS146 22. CMS166 23. CMS154 24. CMS129

CQMs	Requirement*
	* Complete 9 of 64 from among at least 3 of 6 domains.
Clinical Process/Effectiveness Domain	25. CMS137
	26. CMS165
	27. CMS125
	28. CMS124
	29. CMS130
	30. CMS126
	31. CMS127
	32. CMS131
	33. CMS123
	34. CMS122
	35. CMS148
	36. CMS134
	37. CMS163
	38. CMS164
	39. CMS145
	40. CMS182
	41. CMS135
	42. CMS144
	43. CMS143
	44. CMS142
	45. CMS142
	46. CMS161
	47. CMS128
	48. CMS136
	49. CMS169
	50. CMS141
	51. CMS140
	52. CMS62
	53. CMS52
	54. CMS77
	55. CMS133
	56. CMS158
	57. CMS159
	58. CMS160
	59. CMS75
	60. CMS74
	61. CMS61
	62. CMS64
	63. CMS149
	64. CMS65

2014 STAGE 1 MU FOR EHS

MU Section	Requirement
Core Objectives: Complete all 11	1. CPOE 2. Drug-Drug/Drug-Allergy 3. Problem List 4. Medication List 5. Medication Allergy List 6. Record Demographics 7. Vital Signs 8. Smoking Status 9. Clinical Decision Support 10. Patient Discharge Instructions 11. Protect Health Information

Menu Objectives	Requirement
Complete 5 out of 10. One must be a Public Health Measure.	Public Health Measures: 1. Immunization Registry 2. Reportable Lab Results to Public Health Agencies 3. Syndromic Surveillance Data Submission Additional Menu Measures: 4. Drug Formulary Checks 5. Advance Directives 6. Clinical Lab Tests Results 7. Patient Lists 8. Patient-Specific Education Resources 9. Medication Reconciliation 10. Transition of Care Summary

CQMs	Requirement* *Complete all 16 of 29 from among at least 3 of 6 domains.
Patient and Family Engagement Domain	1. CMS55 2. CMS111 3. CMS107 4. CMS110 5. CMS26
Patient Safety Domain	6. CMS108 7. CMS190 8. CMS114 9. CMS171 10. CMS178 11. CMS185
Care Coordination Domain	12. CMS102 13. CMS32
Population and Public Health Domain	None available
Efficient Use of Healthcare Resources Domain	14. CMS188 15. CMS
Clinical Process/Effectiveness Domain	16. CMS104 17. CMS71 18. CMS91 19. CMS72 20. CMS105 21. CMS73 22. CMS109 23. CMS100 24. CMS113 25. CMS60 26. CMS53 27. CMS30 28. CMS9 29. CMS31

2014 STAGE 2 MU FOR EHS

MU Section	Requirement
Core Objectives: Complete all 16.	1. CPOE 2. Demographics 3. Vital Signs 4. Smoking Status 5. Clinical Decision Support 6. Lab-Test Results 7. Patient Lists 8. Patient Electronic Access 9. Patient Education Resources 10. Medication Reconciliation 11. Summary of Care Record 12. Immunization Registries 13. Public Health Reporting 14. Syndromic Surveillance 15. Protect health Information 16. Electronic Medication Administration record (eMAR)

Menu Objectives	Requirement
Complete 3 out of 6.	1. Advance Directives 2. Imaging results 3. Family Health History 4. E-Prescribing (eRX) 5. Electronic Notes 6. Lab Results to Ambulatory Providers

CQMs	Requirement
Complete all 16 of 29 from at least 3 of 6 domains.	**Patient and Family Engagement Domain** 1. CMS55 2. CMS111 3. CMS107 4. CMS110 5. CMS26 **Patient Safety Domain** 6. CMS108 7. CMS190 8. CMS114 9. CMS171 10. CMS178 11. CMS185 **Care Coordination Domain** 12. CMS102 13. CMS32 **Population and Public Health Domain** None available **Efficient Process/Effectiveness Domain** 14. CMS188 15. CMS172 **Patient and Family Engagement Domain** 16. CMS104 17. CMS71 18. CMS91 19. CMS72 20. CMS105 21. CMS73 22. CMS109 23. CMS100 24. CMS113 25. CMS60 26. CMS53 27. CMS30 28. CMS9 29. CMS31

PROGRAM YEAR 2015-2016

In 2015, CMS issued a Final Rule that eliminated Stage 1 and updated Stage 2 objectives to include alternate exclusions for providers who were previously scheduled to be in Stage 1. Due to SLR limitations, DHCS received approval from CMS to present providers who were previously scheduled to be in Stage 1 with two separate MU paths: in one path, all alternate exclusions were automatically accepted, while in the second path providers were presented with Stage 2 objectives only. All other providers (those scheduled to be in Stage 2) were automatically routed to Stage 2 objectives.

2015-16 STAGE 2 MU FOR EPS

MU Section	Requirement
Core Objectives: Complete all 10. *NOTE: In 2015, providers scheduled to be in Stage 1 can opt not to complete all marked with (*).	1. Protect Patient Health Information 2. Clinical Decision Support 3. CPOE 4. E-Prescribing 5. Health Information Exchange* 6. Patient Specific Education * 7. Medication Reconciliation* 8. Patient Electronic Access 9. Secure Messaging* 10. Public Health Reporting

CQMs	Requirement* *Complete 9 of 64 form among at least 3 of 6 domains.
Patient and Family Engagement Domain	1. CMS157 2. CMS66 3. CMS56 4. CMS90
Patient Safety Domain	5. CMS156 6. CMS139 7. CMS68 8. CMS132 9. CMS177 10. CMS179
Care Coordination Domain	11. CMS50

CQMs	Requirement* *Complete 9 of 64 form among at least 3 of 6 domains.
Population and Public Health Domain	12. CMS155 13. CMS138 14. CMS153 15. CMS117 16. CMS147 17. CMS2 18. CMS69 19. CMS82 20. CMS22
Efficient Use of Healthcare Resources Domain	21. CMS146 22. CMS166 23. CMS154 24. CMS129

CQMs	Requirement* *Complete 9 of 64 form among at least 3 of 6 domains.
Clinical Process/Effectiveness Domain	25. CMS137 26. CMS165 27. CMS125 28. CMS124 29. CMS130 30. CMS126 31. CMS127 32. CMS131 33. CMS123 34. CMS122 35. CMS148 36. CMS134 37. CMS163 38. CMS164 39. CMS145 40. CMS182 41. CMS135 42. CMS144 43. CMS143 44. CMS167 45. CMS142 46. CMS161 47. CMS128 48. CMS136 49. CMS169 50. CMS141 51. CMS140 52. CMS62 53. CMS52 54. CMS77 55. CMS133 56. CMS158 57. CMS159 58. CMS160 59. CMS75 60. CMS74 61. CMS61 62. CMS64 63. CMS149 64. CMS65

2015-16 STAGE 2 MU FOR EHS

MU Section	Requirement
Core Objectives: Complete all 9*. *Note: In 2015, hospitals scheduled to be in Stage 1 can opt to not complete all marked with (*). **Note: In 2015 and 2016, hospitals scheduled to be in Stage 1 can opt not to complete all marked with (**)	1. Protect Patient Health Information 2. Clinical Decision Support 3. CPOE 4. E-Prescribing** 5. Health Information Exchange* 6. Patient Specific Education* 7. Medication Reconciliation* 8. Patient Electronic Access 9. Public Health Reporting

CQMs	Requirement* * Complete all 16 of 29 form among at least 3 of 6 domains.
Patient and Family Engagement Domain	1. CMS55 2. CMS111 3. CMS107 4. CMS110 5. CMS26
Patient Safety Domain	6. CMS108 7. CMS190 8. CMS114 9. CMS171 10. CMS178 11. CMS185
Care Coordination Domain	12. CMS102 13. CMS32
Population and Public Health Domain	None available
Efficient Use of Healthcare Resources Domain	14. CMS188 15. CMS172
Clinical Process/Effectiveness Domain	16. CMS104 17. CMS71 18. CMS91 19. CMS72 20. CMS105 21. CMS73 22. CMS109 23. CMS100 24. CMS113 25. CMS60 26. CMS53 27. CMS30 28. CMS9 29. CMS31

PROGRAM YEAR 2017

At the start of 2017, alternate exclusions are no longer an option and all providers were required to complete Stage 2. Later in 2017, the CQM requirement was changed for EPs to reporting 6 of 56 CQMs without regard to domains. For hospitals, the number of CQMs was reduced to 16 and hospitals were required to complete all. In 2017, providers also have the option of attesting to Stage 3 (see Program Year 2018 section below for Stage 3 requirements).

2017 INITIAL STAGE 2 MU FOR EPS

MU Section	Requirement
Core Objectives: Complete all 10.	1. Protect Patient Health Information 2. Clinical Decision Support 3. CPOE 4. E-Prescribing 5. Health Information Exchange 6. Patient Specific Education 7. Medication Reconciliation 8. Patient Electronic Access 9. Secure Messaging 10. Public Health Reporting

CQMs	Complete 6 of 53 available CQMs.
1	CMS157
2	CMS66
3	CMS56
4	CMS90
5	CMS156
6	CMS139
7	CMS68
8	CMS132
9	CMS177
10	CMS50
11	CMS155
12	CMS138
13	CMS153
14	CMS117
15	CMS147
16	CMS2
17	CMS69
18	CMS82

CQMs	Complete 6 of 53 available CQMs.
19	CMS22
20	CMS146
21	CMS166
22	CMS154
23	CMS137
24	CMS165
25	CMS124
26	CMS130
27	CMS126
28	CMS127
29	CMS131
30	CMS123
31	CMS122
32	CMS134
33	CMS164
34	CMS145
35	CMS135
36	CMS144
37	CMS143
38	CMS167
39	CMS161
40	CMS128
41	CMS136
42	CMS169
43	CMS52
44	CMS133
45	CMS158
46	CMS159
47	CMS160
48	CMS75
48	CMS74
50	CMS61
51	CMS64
52	CMS149
53	CMS65

2017 INITIAL STAGE 2 MU FOR EHS

MU Section	Requirement
Core Objectives: Complete all 9.	1. Protect Patient Health Information 2. Clinical Decision Support 3. CPOE 4. E-Prescribing 5. Health Information Exchange 6. Patient Specific Education 7. Medication Reconciliation 8. Patient Electronic Access 9. Public Health Reporting

CQMs	Requirement
Complete all 16.	1. CMS 9 NQF 0480 PC-05 2. CMS 31 NQF 1354 EHDI-1a 3. CMS 32 NQF 0496 ED-3 4. CMS 53 NQF 0163 AMI-8a 5. CMS 55 NQF 0495 ED-1 6. CMS 71 NQF 0436 STK-03 7. CMS 72 NQF 0438 STK-05 8. CMS 102 NQF 0441 STK - 10 9. CMS 104 NQF 0435 STK-02 10. CMS 105 NQF 0439 STK-06 11. CMS 26 No NQF CAC-3 12. CMS 108 NQF 0371 VTE-1 13. CMS 111 NQF 0497 ED-2 14. CMS 113 NQF 0469 PC-01 15. CMS 190 NQF 0372 VTE-2 16. CMS 107 No NQF STK-08

PROGRAM YEAR 2018

In 2018, Stage 2 or Stage 3 is required for all providers. Stage 3 is optional.

STAGE 3 MU FOR   EPS

MU Section	Requirement
Core Objectives: Complete all 8.	1. Protect Patient Health Information 2. E-Prescribing 3. Clinical Decision Support 4. CPOE 5. Electronic Access 6. Coordination of Care 7. Health Information Exchange 8. Public Health

CQMs		Requirement: Complete 6 of 53
	1	CMS157
	2	CMS66
	3	CMS56
	4	CMS90
	5	CMS156
	6	CMS139
	7	CMS68
	8	CMS132
	9	CMS177
	10	CMS50
	11	CMS155
	12	CMS138
	13	CMS153
	14	CMS117
	15	CMS147
	16	CMS2
	17	CMS69
	18	CMS82
	19	CMS22
	20	CMS146
	21	CMS166
	22	CMS154
	23	CMS137
	24	CMS165

CQMs	Requirement: Complete 6 of 53
25	CMS124
26	CMS130
27	CMS126
28	CMS127
29	CMS131
30	CMS123
31	CMS122
32	CMS134
33	CMS164
34	CMS145
35	CMS135
36	CMS144
37	CMS143
38	CMS167
39	CMS161
40	CMS128
41	CMS136
42	CMS169
43	CMS52
44	CMS133
45	CMS158
46	CMS159
47	CMS160
48	CMS75
49	CMS74
50	CMS61
51	CMS64
52	CMS149
53	CMS65

2018 STAGE 3 MU FOR EHS

MU Section	Requirement
Core Objectives: Complete all 8.	1. Protect Patient Health Information 2. E-Prescribing 3. Clinical Decision Support 4. CPOE 5. Electronic Access 6. Coordination of Care 7. Health Information Exchange 8. Public Health

CQMs	Requirement
Complete all 16.	1. CMS 9 NQF 0480 PC-05 2. CMS 31 NQF 1354 EHDI-1a 3. CMS 32 NQF 0496 ED-3 4. CMS 53 NQF 0163 AMI-8a 5. CMS 55 NQF 0495 ED-1 6. CMS 71 NQF 0436 STK-03 7. CMS 72 NQF 0438 STK-05 8. CMS 102 NQF 0441 STK - 10 9. CMS 104 NQF 0435 STK-02 10. CMS 105 NQF 0439 STK-06 11. CMS 26 No NQF CAC-3 12. CMS 108 NQF 0371 VTE-1 13. CMS 111 NQF 0497 ED-2 14. CMS 113 NQF 0469 PC-01 15. CMS 190 NQF 0372 VTE-2 16. CMS 107 No NQF STK-08

PROGRAM YEAR 2019

In 2019, Stage 3 is required for all providers.

2019 STAGE 3 MU FOR EPS

CQMs	Requirement
Core Objectives: Complete all 8.	1. Protect Patient Health Information 2. Electronic Prescribing 3. Clinical Decision Support 4. Computerized Provider Order Entry 5. Patient Electronic Access to Health Information 6. Coordination of Care through Patient Engagement 7. Health Information Exchange 8. Public Health and Clinical Data Registry Reporting

CQMs	Requirement* *Report on any 6 CQMs related to scope of practice, including 1 outcome or high priority.*
Patient and Caregiver Centered Experience Domain	1. CMS157 High Priority/Process 2. CMS66 High Priority/Process 3. CMS56 High Priority/Process 4. CMS90
Patient Safety Domain	5. CMS156 High Priority/Process 6. CMS139 High Priority/Process 7. CMS68 High Priority/Process 8. CMS132 High Priority/Outcome 9. CMS177 High Priority/Process
Communication and Care Coordination Health Domain	10. CMS50 High Priority/Process 11. CMS142 High Priority/Process

CQMs	Requirement* *Report on any 6 CQMs related to scope of practice, including 1 outcome or high priority.
Community and Population Health Domain	12. CMS155 High Priority/Process 13. CMS138 14. CMS153 High Priority/Process 15. CMS117 16. CMS147 17. CMS2 High Priority/Process 18. CMS69 19. CMS82 20. CMS22 21. CMS75 High Priority/Outcome 22. CMS127 23. CMS349
Efficiency and Cost Reduction Domain	24. CMS146 High Priority/Process 25. CMS154 High Priority/Process 26. CMS129 High Priority/Process 27. CMS249 High Priority/Process
Effective Clinical Care Domain	28. CMS137 High Priority/Process 29. CMS165 High Priority/Outcome 30. CMS125 High Priority/Process 31. CMS124 32. CMS130 33. CMS131 34. CMS122 High Priority/Outcome 35. CMS134 36. CMS145 37. CMS135 38. CMS144 39. CMS143 40. CMS161 41. CMS128 High Priority/Process 42. CMS136 High Priority/Process 43. CMS52 44. CMS133 High Priority/Outcome 45. CMS159 High Priority/Outcome 46. CMS160 47. CMS74 High Priority (as designated by DHCS) 48. CMS149 49. CMS347 50. CMS645

2019 STAGE 3 MU FOR EHS

MU Section	Requirement
Core Objectives: Complete all 8.	1. Protect Patient Health Information 2. Electronic Prescribing 3. Clinical Decision Support 4. Computerized Provider Order Entry 5. Patient Electronic Access to Health Information 6. Coordination of Care through Patient Engagement 7. Health Information Exchange 8. Public Health and Clinical Data Registry Reporting

CQMs	Requirement* *Complete all 16.
Preventive Care Domain	1. CMS71 No NQF 2. CMS190 No NQF 3. CMS9 NQF 480 4. CMS31 NQF 1354 5. CMS53 NQF 163 6. CMS72 NQF 438 7. CMS102 NQF 441 8. CMS104 NQF 435 9. CMS105 NQF 439 10. CMS107 No NQF 11. CMS108 NQF 371 12. CMS113 NQF 469 13. CMS26 No NQF
Patient's Experience of Care	14. CMS55 No NQF 15. CMS32 No NQF 16. CMS111

APPENDIX 28:   LIST OF ACRONYMS

A&I	Audits and Investigations
AB	Assembly Bill
ACA	Affordable Care Act
ACPPE	Advanced Community Pharmacy Practice Experience
ACS	Affiliated Computer Services
ADT	Admission, Discharge, and Transfer
AHA	American Hospital Association
AHA	American Heart Association
AI/AN	American Indian/Alaskan Native
AIU	Adopt, Implement, Upgrade
APC	Use of Multiple Concurrent Antipsychotics in Children and Adolescents
API	Application Programming interface
APM	Metabolic Monitoring for Children and Adolescents on Antipsychotics
APP	Use of First-Line Psychosocial Care for Children and Adolescents on Antipsychotics
ARRA	American Recovery and Reinvestment Act of 2009
ASA	American Stroke Association
ASAM	American Society of Addiction Medicine

B

BAA	Business Associate Agreement
BEACH	Beacon Education, Analytic, and Collaboration Hub
BHIE	Behavioral Health Information Exchange
BMFEA	Bureau of Medi-Cal Fraud and Elder Abuse
BPM	Business Process Management
BTOP	Broadband Technology Opportunities Program

C

C-CDA	Consolidated-Clinical Document Architecture
CA-MMIS	California Medicaid Management Information System
CBAS	Community-Based Adult Services
CAH	Critical Access Hospitals
CAHIE	California Association of Health Information Exchanges
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CalHIPSO	California Health Information Partnership and Services Organization
CAIR	California Immunization Registry
CalDURSA	California Data use and Reciprocal Support Agreement
CalLIMS	California Laboratory Information Management System
CalOHII	California Office of Health Information Integrity
CalPERS	California Public Employee's Retirement System
CalPSAB	California Privacy and Security Advisory Board
CalREDIE	California Reportable Disease Information Exchange
CalRHIO	California Regional Health Information Organization
CAPH	California Association of Public Hospitals
CAPMAN	Capitation Payment Management System

CBO	Community-based Organization
CBTF	California Broadband Task Force
CCC	Council of Community Clinics
CCD	Continuity of Care Document
CCHA	California Children's Hospital Association
CCI	Coordination Care Initiative
CCP	California Coverdell Program
CCR	California Cancer Registry
CCS	California Children's Services
CDA	California Dental Association
CDC	Centers for Disease Control and Prevention
CDPH	California Department of Public Health
CDSS	California Department of Social Services
CEHRT	Certified Electronic Health Record Technology
CENIC	Corporation for Education Network Initiatives in California
CHCF	California HealthCare Foundation
CHDP	Child Health and Disability Prevention Program
CHeQ	California Health e-Quality
CHHS	California Health and Human Services (Agency)
CHILI	California Health Information Law Index
CHIP	Children's Health Insurance Program
CHPL	Certified HIT Product List
CHSDA	Contract Health Services Delivery Areas
CHWA	California Health Workforce Alliance
CIS	Clinical Information System
CLIA	Clinical Laboratory Improvement Amendments
CLPPB	Childhood Lead Poisoning Prevention Branch
CMA	California Medical Association
CMR	Confidential Morbidity Reports
CMRI	California Medicaid Research Institute
CMS	Centers for Medicare and Medicaid Services
CMSO	Center for Medicaid & State Operations
CNM	Certified Nurse Midwife
CFR	Code of Federal Regulations
COREC	CalOptima Regional Extension Center
COTS	Commercial Off-the-Shelf
CPCA	California Primary Care Association
CPOE	Computerized Physician Order Entry
CPS	Child Protective Services
CQM	Clinical Quality Measure
CRC	Caregiver Resource Center
CRIHB	California Rural Indian Health Board
CS	Connectivity Services
CSI	Client & Service Information
CSR	California Stroke Registry
CSRHA	California State Rural Health Association
CTAP	California Technical Assistance Program
CTCP	California's Tobacco Control Program
CTEC	California Telemedicine and eHealth Center
CTEN	California Trusted Exchange Network

CTF   California Trust Framework
CTN   California Telehealth Network
CTRC   California Telehealth Resource Center
CURES   Controlled Substance Utilization Review and Evaluation System
CURES 2.0   California's Controlled Substance Utilization Review and Evaluation System
CWC   Child Welfare Council
CWS/CMS   Child Welfare Services/Case Management System
CYC   California Youth Connection

D

DARs   Desk Audit Reviews
DCDC   Division of Communicable Disease Control
DHCS   Department of Health Care Services
DLT   Distance Learning and Telemedicine
DMC-ODS   Drug Medi-Cal Organized Delivery System
DMH   Department of Mental Health
DPH   Designated Public Hospital
DO   Doctor of Osteopathic Medicine
DOD   Department of Defense
DOJ   Department of Justice
DTI   Dental Transformation Initiative

E

ECHO   Expanding Capacity for Health Outcomes Act
ECM   Enterprise Content Management
eCR   Electronic Case Reporting
eCQM   Electronic Clinical Quality Measure
EDR   Electronic Dental Record
EFT   Electronic Funds Transfer
EH   Eligible Hospital
EHR   Electronic Health Record
EITS   Enterprise Innovation Technology Services
eICR   Electronic Initial Case Report
ELR   Electronic Laboratory Reporting
ELINCS   EHR-Lab Interoperability and Connectivity Specification
ELPD   Entity Level Provider Directory
ELR   Electronic Lab Reporting
ELVIS   Elevated Lead Visual Information System
EMS   Emergency Medical Services
EMSA   Emergency Medical Services Authority
eMAR   Electronic Medication Administration record
EP   Eligible Provider
EPCS   Electronic Prescribing of Controlled Substances
EPMI   Enterprise Master Patient Index
ESAR-VHP   Emergency System for Advance registration of Volunteer Health Professionals
ETL   Extract, Transform, Load

F

FAB	Financial Audits Branch
FADS	Financial Audits Data System
FARs	Field Audit Reviews
FATS	Financial Audits Tracking System
FAQ	Frequently Asked Questions
FCC	Federal Communications Commission
FFS	Fee-For-Service
FFY	Federal Fiscal Year
FHL	Ventura County Foster Health Link
FI	Fiscal Intermediary
FICOD	Fiscal Intermediary Contracts Oversight Division
FTPS	File Transfer Protocol Software
FQHC	Federally Qualified Health Centers

G

GAGAS	Generally Accepted Governmental Auditing Standards
GDSP	Genetic Disease Screening Program
GHS	Girls Health Screen
GHJI	Girls Health and Justice Institute
GPRA	Government Performance and Requirements Act
GWTG	Get with the Guidelines

H

HCF	Healthcare Connect Fund
HCFA	Health Care Financing Administration
HCCN	Health Center Controlled Networks
HEDIS	Healthcare Effectiveness Data and Information Set
HFP	Healthy Families Program
HHS	Health and Human Services
HHP	Health Homes Program
HIE	Health Information Exchange
HIO	Health Information Organization
HIT	Health Information Technology
HITEC-LA	Health Information Technology Extension Center for Los Angeles County
HITECH	Health Information Technology for Economic and Clinical Health
HITEMS	Health Information Technology for Emergency Medical Services
HMOS	Health Maintenance Organizations
HRSA	Health Resources and Services Administration
HAS	Human Services Agency
HSAG	Health Services Advisory Group

I

I-APD	Implementation Advanced Planning Document
I-APD-U	Implementation Advanced Planning Document Update

IA	Interagency Agreement
IB	Investigations Branch
ICEC	Interstate Consent Engine Collaborative
IdAM	Identity Access Management
IDN	Integrated Delivery Networks
IEHP	Inland Empire Health Plan
IEHIE	Inland Empire Health Information Exchange
IHA	Integrated Healthcare Association
IHS	Indian Health Services
HIS-CAO	Indian Health Services- California Area Office
IHP-ODS	Indian Health Program Organized Delivery System
ILPD	Individual Level Provider Directory
IPA	Independent Practice Association
IPHI	Institute for Population Health Improvement
IZ	CAIR Immunization Registry

L

LACDMH	Los Angeles County Department of Mental Health
LEA	Local Educational Agencies
LEC	Local Extension Center
LFS	Lab Field Services
LGHC	Let's Get Healthy California
LHD	Local Health Departments
LOINC	Logical Observation Identifiers Names and Codes

M

MARS	Management & Administrative Reporting System
MCQMD	Managed Care Quality and Monitoring Division
MCP	Managed Care Plan
MD	Doctor of Medicine
MDL	Medical Diagnostics Labs
MEDS	Medi-Cal Eligibility Data System
MFR	Master File Room
MH/SU	Mental Health and/or Substance Use
MHSA	Mental Health Services Act of 2004
MHP	Mental Health Program
MIS/DSS	Management Information System/Decision Support System
MITA	Medicaid Information Technology Architecture
MMIS	Medicaid Management Information System
MOA	Memorandum of Agreement
MPI	Master Patient/Person Index
MRB	Medical Review Branch
MSO	Management Service Organization
MSSP	Multipurpose Senior Services Program
M-TIP	MITA Transition and Implementation Plan
MU	Meaningful Use

N

NAMCS	National Ambulatory Medical Care Survey
NASMD	National Association of State Medicaid Directors
NATE	National Association for Trusted Exchange
NCHS	National Center for Health Statistics
NCPDP	National Council for Prescription Drug Programs
NCQA	National Committee for Quality Assurance
NDC	National Drug Codes
NHIN	Nationwide Health Information Network
NLR	National Level Repository
NSRHN	Northern Sierra Rural Health Network
NSSMPP	National Study of Small and Medium-Sized Physician Practices
NP	Nurse Practitioner
NSP	Newborn Screening Program
NTIA	National Telecommunications and Information Administration
NQS	National Quality Strategy for Quality Improvement in Health Care

O

OCPRHIO	Orange County Partnership Regional Health Information Organization
OD	Doctor of Optometry
OHB	Occupational Health Branch
OHP	Oral Health Program
OHIT	Office of Health Information Technology
OLPPP	Occupational Lead Poisoning Prevention Program
ONC	Office of the National Coordinator
OOH	Out-of-Home
OSHPD	Office of Statewide Health Planning and Development

P

P-APD	Planning Advanced Planning Document
P-APD-U	Planning Advanced Planning Document Update
PA	Physician Assistant
PACES	Post-Adjudicated Claim and Encounter System
PAVE	Provider Application and Validation for Enrollment
PCP	Primary Care Physicians
PED	Provider Enrollment Division
PETS	Provider Enrollment Tracking System
PD	Parkinson's disease
PHA	Public Health Agencies
PHR	Personal Health Record
PMF	Provider Master File
POLST	Physician Orders for Life-Sustaining Treatment
PPOS	Preferred Provider Organizations
PPS	Prospective Payment System
PL	Public Law
PRIME	Public Hospital Redesign and Incentives in Medi-Cal

pSCANNER   Patient-Centered Scalable National Network for Effectiveness Research
PULSE   Patient Unified Lookup System for Emergencies

Q

QIPS   Quality Improvement Projects
QRDA   Quality Reporting Document Architecture

R

RAND   Research and Development Corporation
RASSCLE   Response and Surveillance System for Childhood Lead Exposure
REC   Regional Extension Center
RFP   Request for Proposal
RHC   Rural Health Clinic
RPMS   Resource and Patient Management System
RTI   Research Triangle Institute

S

S-HIE   Social-Health Information Exchange
SaaS   Software as a Service
SACWIS   State Automated Child Welfare Information System
SAFR   Search, Alert, File, and Reconcile
SAMHSA   Substance Abuse and Mental Health Services Administration
SB   Senate Bill
SCA   Service Component Architecture
SCHIE   Santa Cruz Health Information Exchange
SCHIP   State Children's Health Insurance Program
SCO   State Controller's Office
SDE   State Designated Entities
SDBC   San Diego Beacon Community
SDHC   San Diego Health Connect
SDRHIE   San Diego Regional Health Information Exchange
SFTP   Secure File Transfer Protocol
SHA   Staying Healthy Assessment
SHIG   State Health Information Guidance
SIM   State Innovation Model
SLR   State Level Registry
SPA   State Plan Amendment
SMD   State Medicaid Directors Letter
SMI   Serious Mental Illness
SMHP   State Medicaid Health Information Technology Plan
SOA   Service Oriented Architecture
SOAP   Simple Object Access Protocol
SOM   School of Medicine
SON   School of Nursing
SOP   School of Pharmacy
SQL   Structured Query Language

SR	Services Registry
SS-A	State Self-Assessment
SSW	Superior Systems Waiver
SSIS	SQL Server Integration Services
SUDs	Substance Use Disorders
SURS	Surveillance and Utilization Review Subsystems

T

TA	Technical Assistance
TAR	Treatment Authorization Request
TCP	The Children's Partnership
THP	Tribal Health Provider
TPL	Third Party Liability
TRC	Telehealth Resource Center

U

UCSF	University of California, San Francisco
UIHP	Urban Indian Health Programs

V

VA	Veterans Administration
VASDMC	Veterans Administration San Diego Medical Center
VDH	Virtual Dental Home
VHIE	Veteran Health Information Exchange
VLER	Virtual Lifetime Electronic Records
VistA	Veterans Health Information Systems and Technology Architecture

W

W&I Code	Welfare and Institutions Code
WHIN	Western Health Information Network
WIR	Wisconsin Immunizations Registry
WPC	Whole Person Care
WRHealthIT	Western Region Health IT Program
WSC	Western States Consortium

X

XML	Extensible Markup Language

APPENDIX 29:   THE USUAL SUSPECTS

OHIT Staff, from left to right.

Front Row: William White, Soua Vang, Nicole Buenaventura, Jenny Ly, Julia Jamie, Chelsea Harlow
Second Row: Kristina Cooney, Tom Vang, Dr. Larry Dickey, Sandra Montiero, Elison Alcovendaz
Third Row: Pamela Williams, Steve Yegge, Morgan Peschko, Raul Ramirez, Jason Van Court, Errin Horstkorta

We dedicate this SMHP to the memory of Steve Yegge (1949-2018). Steve was the Chief of Operations for the program from its very beginning. His wisdom and humor were invaluable to the program and to OHIT staff morale.

APPENDIX 30: CALIFORNIA TECHNICAL ASSISTANCE PROGRAM EVALUATION SURVEY

The California Department of Health Care Services Office of Health Information Technology (OHIT), administers the Medi-Cal Electronic Health Record (EHR) Incentive Program which has provided over $1.4 billion in incentive payments to over 26,000 Health Professionals and hospitals for the adoption and meaningful use of certified Electronic Health Records (EHRs) over the last 6 years. The Medi-Cal EHR Incentive Program will continue through the end of 2021, and participating providers can continue to receive incentive funding by demonstrating meaningful use of their EHRs during this time.

OHIT has contracted with four vendors to assist Health Professionals in meeting the requirements to receive incentive payments. The California Technical Assistance Program (CTAP) was launched in November 2015. This program is designed to assist Health Professionals and their practice groups in their participation in the Medi-Cal EHR Incentive Program with the installation and use of EHRs to attain meaningful use. OHIT would like to better understand the performance of the CTAP contractors and their efforts in providing technical assistance to you and your practice. Completion of this brief survey will help us better evaluate the success of this program, and where additional support may be warranted.

Completing this survey will have no effect on your ability to receive incentive or other payments from DHCS in the future.

Note on confidentiality: Your individual responses will remain confidential. Overall findings will be summarized and used for evaluation and planning purposes. The survey results will be shared with the CTAP contractors/sub-contractors. However, the health professional(s) and/or practice will not be identifiable.

1. What is primary your role in the practice?

   - Health Professional

   - Practice Administrator

   - Front Office Personnel

   - IT Personnel

   - MU Coordinator

   - Other (please specify)

2. What is the total number of Health Professionals enrolled in the CTAP program that you represent at your location/practice?

   - 1 – 5 Health Professionals

   - 6 – 10 Health Professionals

   - 11 – 20 Health Professionals

   - 21 – 40 Health Professionals

   - 41 or more Health Professionals

3. From the list below, please select the best description of your practice setting.

   - FQHC/RHC/Tribal Health Clinic

   - Community Clinic

   - Hospital Outpatient Clinic

   - Medical Group

   - Private Group or Solo Practice

   - Other (please specify)

4. Which CTAP contractor/sub-contractor are you currently working with?

   o CalHIPSO

     - California Rural Indian Health Board

     - Central Valley Collaborative

     - Champions for Health

     - Community Health Center Network

     - eRecords, Inc.

     - Health Quality Partners

     - Lumetra Healthcare Solutions

     - Redwood Community Health Coalition

     - Vigilance Health

     - Not working with a sub-contractor

     - Don't know

- o CalOptima
  - e2o Health
  - Not working with a sub-contractor
  - Don't know
- o HITEC-LA/LA Care
  - e2o Health
  - Object Health
  - Not working with a sub-contractor
  - None

- o Object Health
  - e2o Health
  - Intrepid Ascent
  - Not working with a sub-contractor
  - Don't know

- o Other (please specify)
  - California Rural Indian Health Board
  - Central Valley Collaborative
  - Champions for Health
  - Community Health Center Network
  - e2o Health
  - eRecords, Inc.
  - Health Quality Partners
  - Intrepid Ascent
  - Lumetra Healthcare Solutions
  - Redwood Community Health Coalition
  - Vigilance Health
  - Not working with a sub-contractor
  - Don't know

5. To whom in your practice does the CTAP contractor/sub-contractor provide direct technical assistance? Select all that apply.

   - Health Professional(s)
   - Practice Administrator
   - Front Office Personnel
   - IT Personnel
   - MU Coordinator
   - Other (please specify)

6. How long have you or your practice been working with this contractor/sub-contractor under the CTAP program?

   - 6 months or less
   - Over 6 months to 1 year
   - Over 1 year to 2 years
   - Over 2 years
   - Unknown/not sure

7. How does your CTAP contractor/sub-contractor communicate with you or your practice? Select all that apply.

   - E-mail
   - Phone
   - Remote Desktop
   - Site visit(s)
   - Webinars
   - Other (please specify)

8. How often does your CTAP contractor/sub-contractor communicate with you or your practice?
   - At least weekly
   - Bi-weekly
   - Monthly
   - Quarterly
   - Unknown/not sure
   - Other (please specify)

9. How responsive is the CTAP contractor/sub-contractor to your practice's needs?
   - Very responsive
   - Responsive
   - Somewhat responsive
   - Not responsive

10. From the list below, please select the areas of technical assistance provided by the CTAP contractor/sub-contractor. For the areas of technical assistance you previously selected, rank the value of technical assistance you received from 1-5 where 5 represents most helpful and 1 represents least helpful.
    - Adopt, Implement, Upgrade (AIU)
    - Assistance with the CMS Registration
    - Assistance with the State Level Registry (SLR)
    - Audit Preparation
    - Health Information Exchange (HIE)
    - Meaningful Use (MU)
    - Medi-Cal EHR Incentive Program education and guidance
    - Practice and workflow redesign
    - Selection of a Certified EHR
    - System Security Analysis/Security Risk Assessment
    - Other (please specify)

11. Overall, how satisfied are you with the technical assistance your CTAP contractor/sub-contractor provided?

- Very satisfied

- Satisfied

- Neutral

- Unsatisfied

- Very unsatisfied

12. Would you be willing to be contacted if we have additional questions?
- Yes

- No

13. Please enter your name and a telephone number and/or email address at which you would like to be contacted.
Name: _____

Phone: _____

E-mail: _____

14. Thank you for your response. If you have any additional comments and/or feedback, including how to improve the program, please provide below.

_____
_____
_____
_____

Automated thank you email

Thank you for completing our survey! DHCS Office of Health Information Technology appreciates your responses and feedback! If you would like more information about the Medi-Cal EHR Incentive Program or to apply for the program, please visit:

http://medi-cal.ehr.ca.gov/

Additional information for the CTAP program can be found at:
http://www.dhcs.ca.gov/provgovpart/Pages/California_Technical_Assistance_Program_(CTAP).aspx

Additional comments or questions can be directed to EHR_TA@dhcs.ca.gov.

APPENDIX 31: CALIFORNIA TECHNICAL ASSISTANCE PROGRAM EVALUATION SURVEY OVERALL ANALYSIS

SUMMARY

The purpose of the California Technical Assistance Program (CTAP) Evaluation Survey was to gather feedback from health professionals who are currently or have previously received technical assistance from one of the CTAP contractors. The data was collected via Survey Monkey from June 4, 2018 until August 3, 2018. This document reports on overall findings from the CTAP Evaluation Survey. Individualized reports for each questionnaire response will be provided to each CTAP contractor. Overall, 490 responses were received from the 3,793 unique e-mail addresses contacted, representing a 13 percent response rate. The number (N) that responded to each question varied per question and is provided on each chart.

The chart below depicts the breakdown of respondents by CTAP contractor.
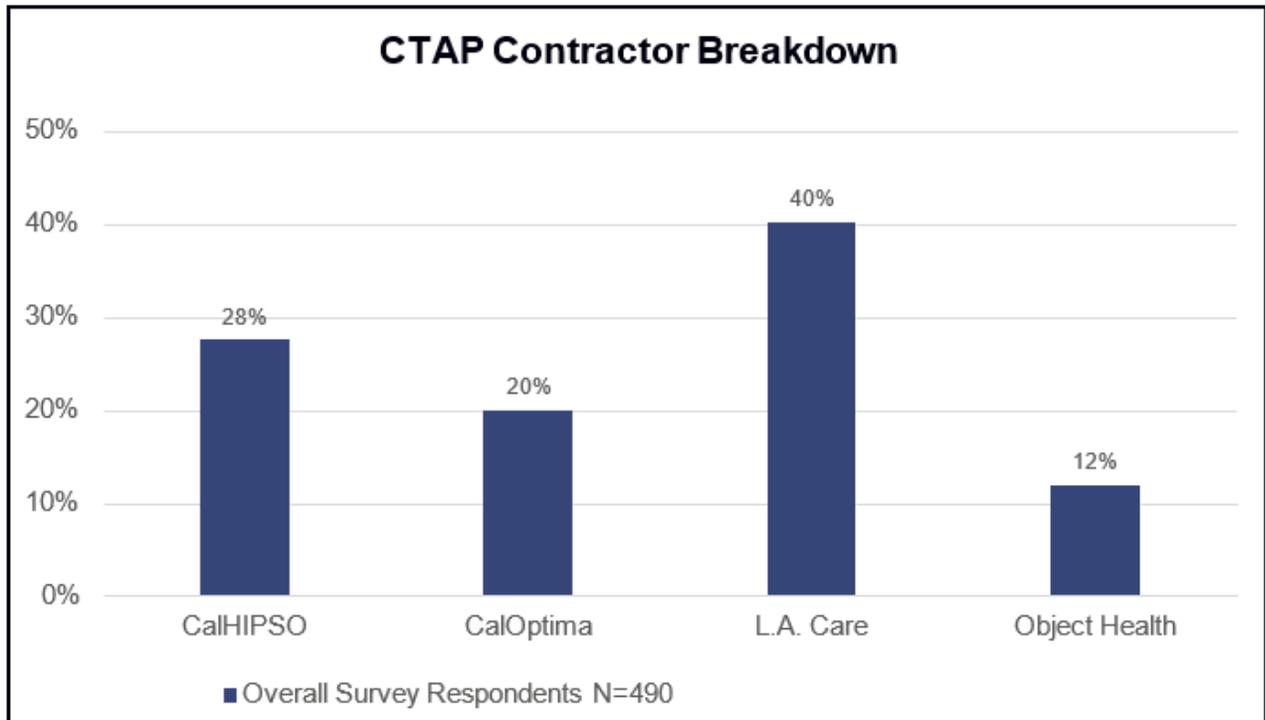
QUESTIONNAIRE RESPONSES

Most respondents reported being health professionals, as displayed in the chart below.
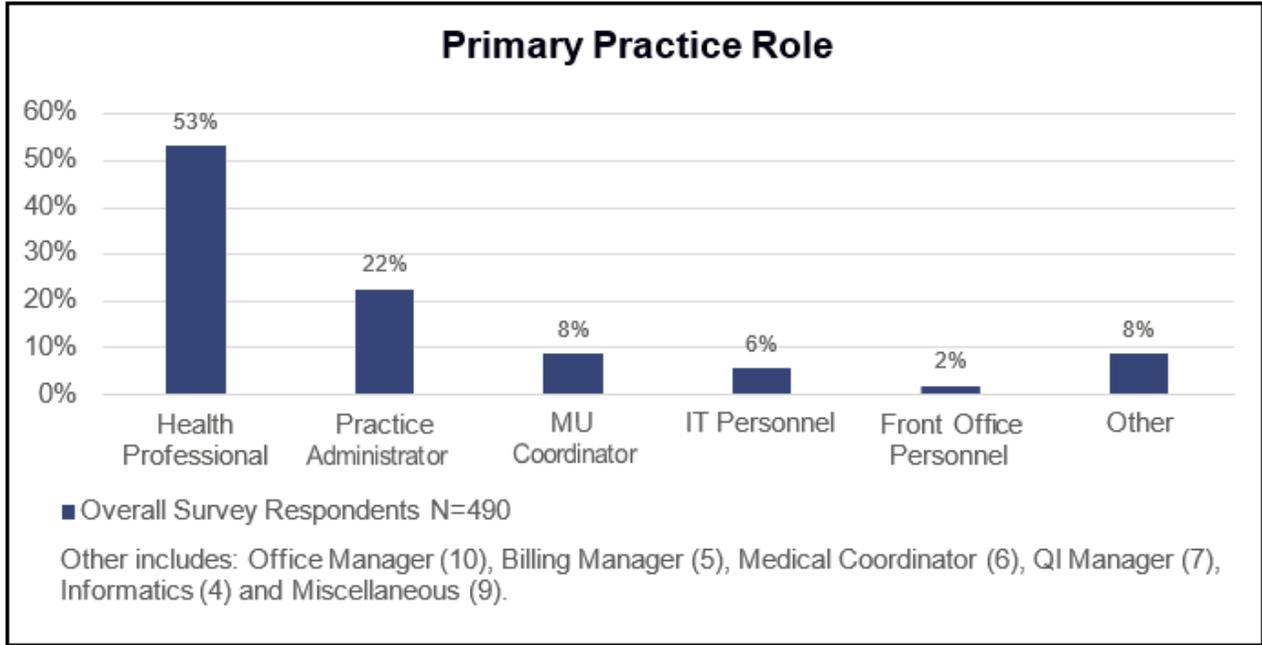
The majority of respondents reporting representing smaller practices of 1-5 health professionals (45 percent). An additional 25 percent reported representing 6 or more health professionals, with 25 percent representing more than 40 health professionals, as displayed in the chart below.
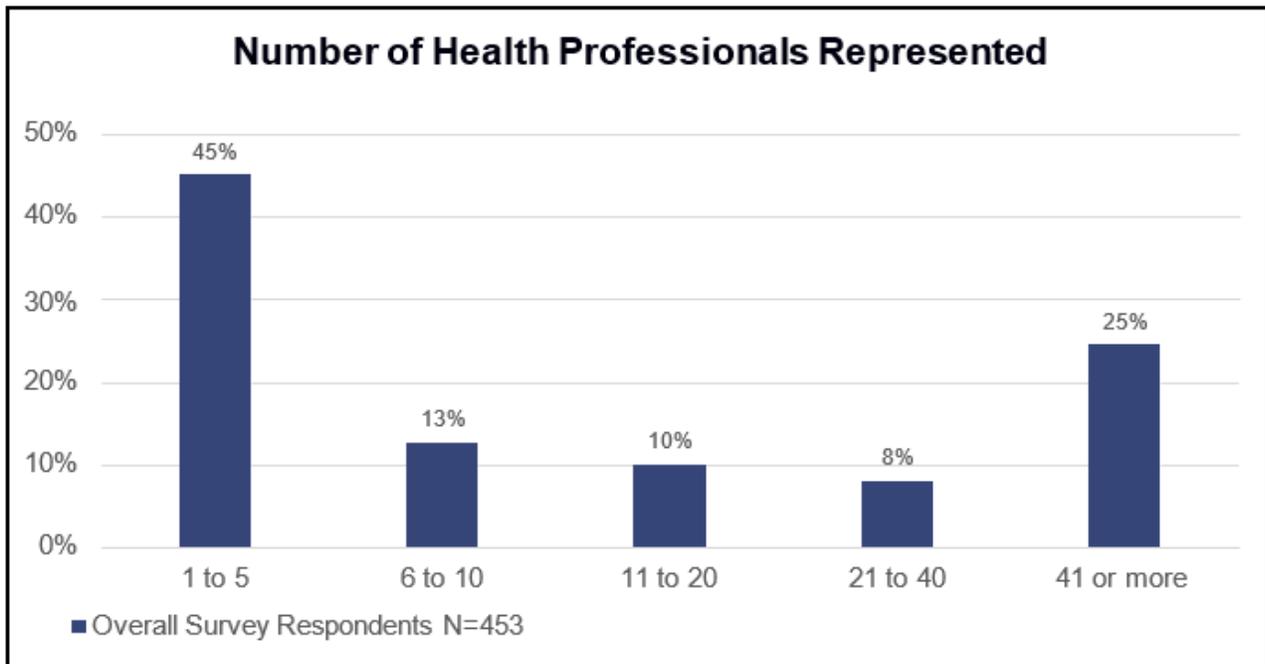
Respondents reported representing diverse practice settings, with the largest percentage representing private group or solo practices (35 percent). FQHC/RHC/Tribal Health Clinics (30 percent), were also highly represented as displayed in the chart below.
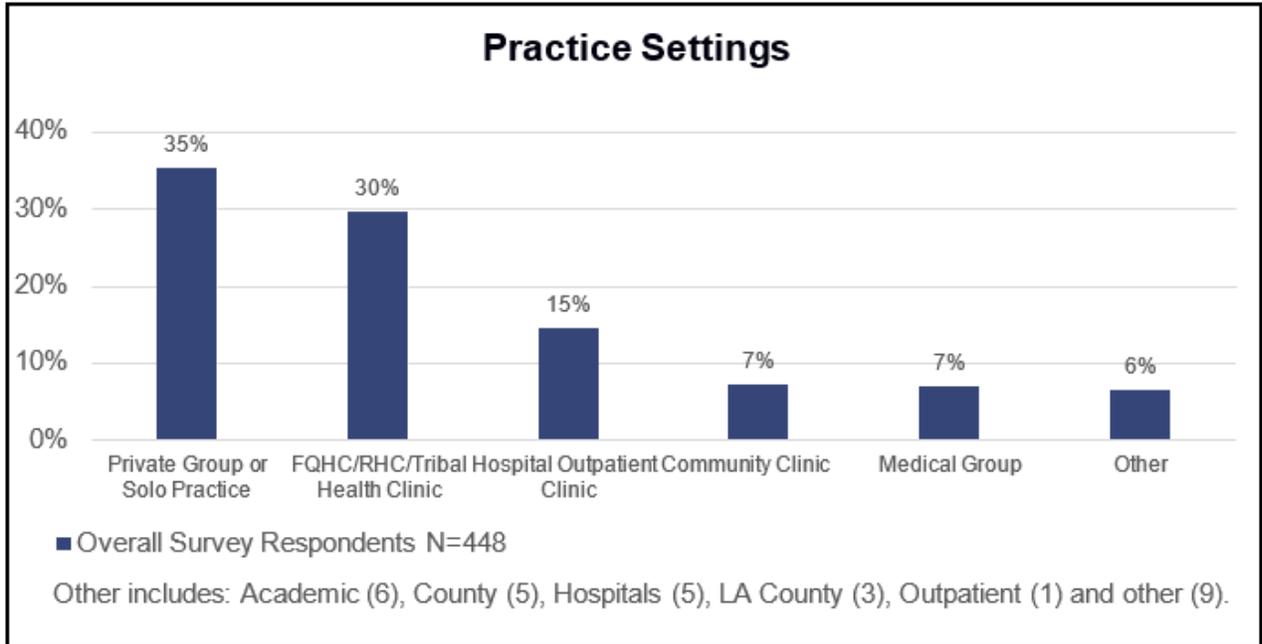
Almost half of respondents reported receiving services from CTAP programs for over two years (46 percent). 25 percent reported not knowing how long they or their organization had been working with CTAP.
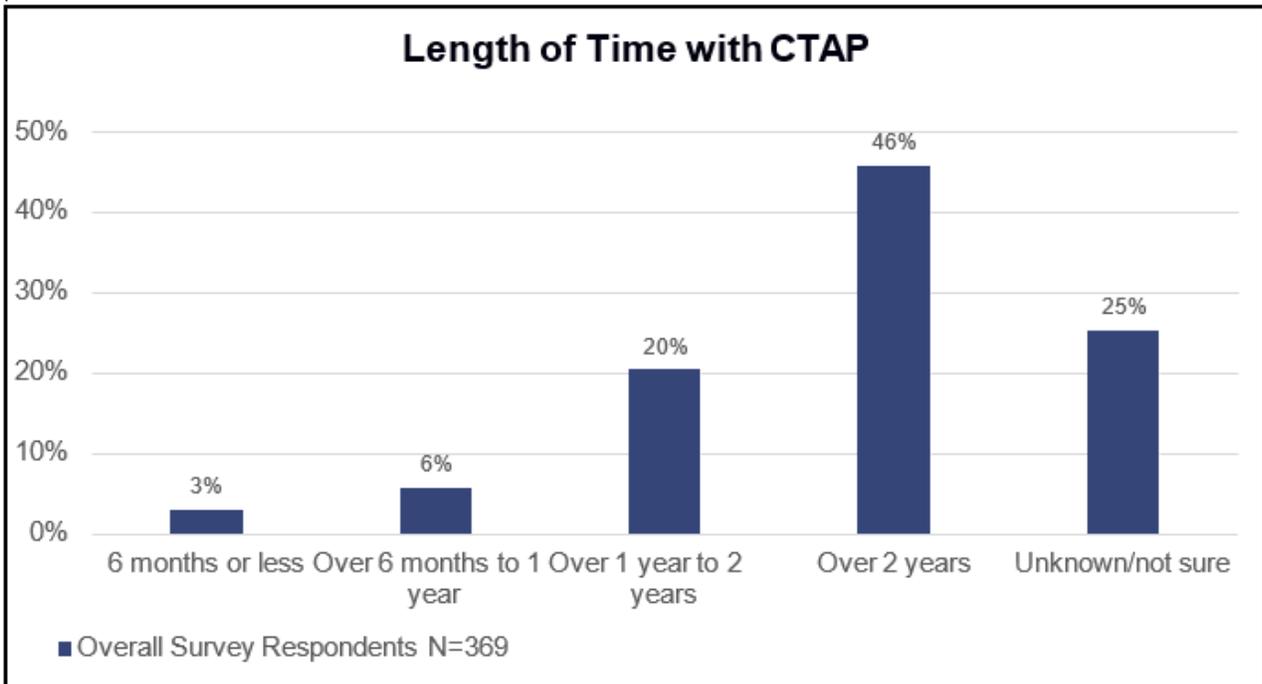
E-mail (88 percent) and phone (68 percent) were reported as the main methods of communication between respondents and CTAP contractors, although a substantial percentage (34 percent) reported receiving site visits.
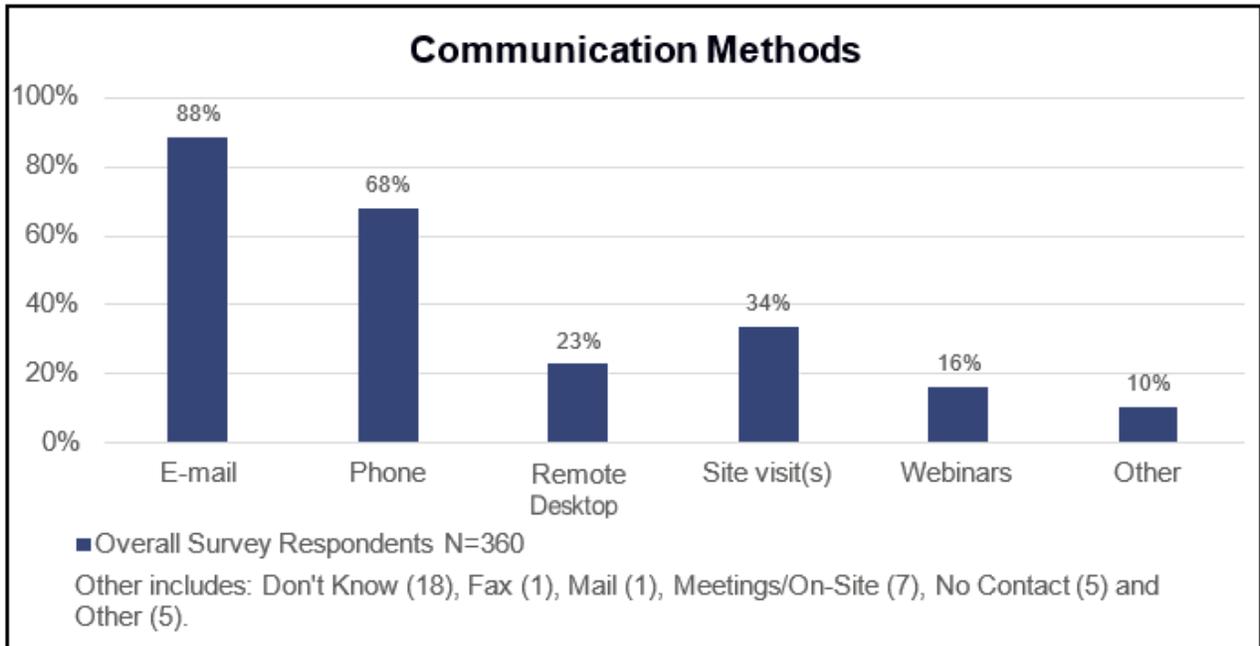
The majority of respondents indicated monthly contact (20 percent) followed by quarterly contact (17 percent) with a CTAP contractor. A large percentage (34 percent) reported being unsure of the frequency of communication with CTAP programs. A significant number of respondents designated other frequencies (16 percent), with 30 respondents (9 percent) writing in "as needed".
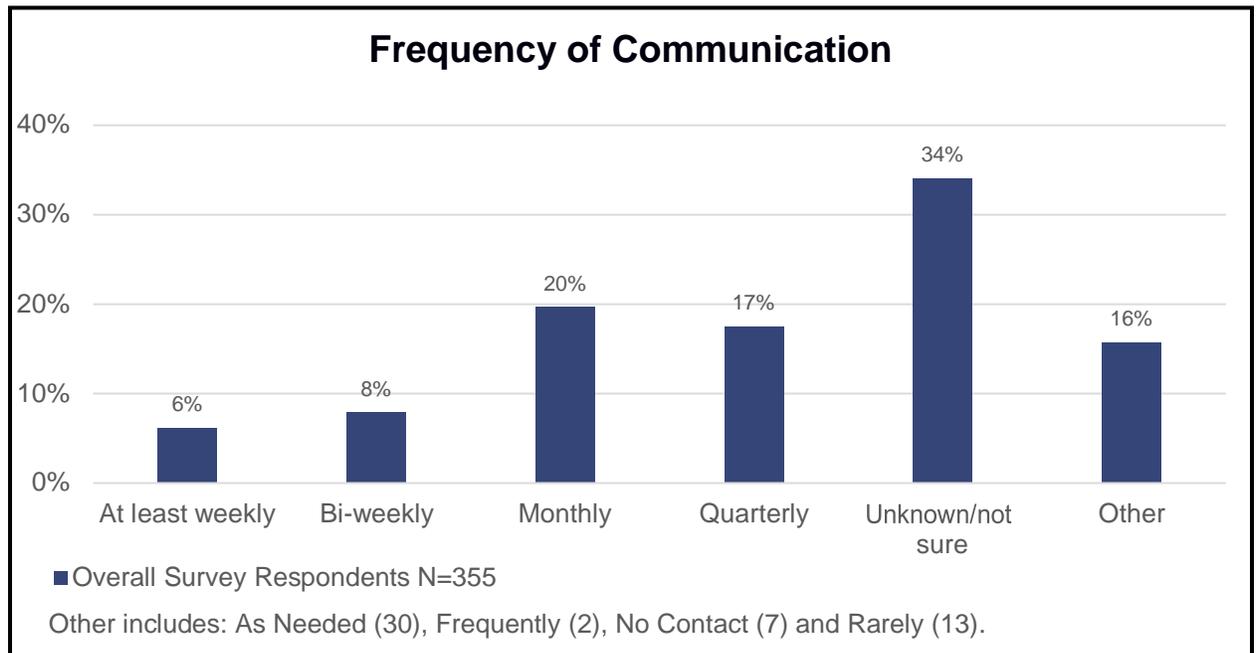
Most respondents reported CTAP contractors as either very responsive (50 percent) or responsive (29 percent). 21 percent of respondents reported that the CTAP contractor was either not responsive (7 percent) or somewhat responsive (14 percent).
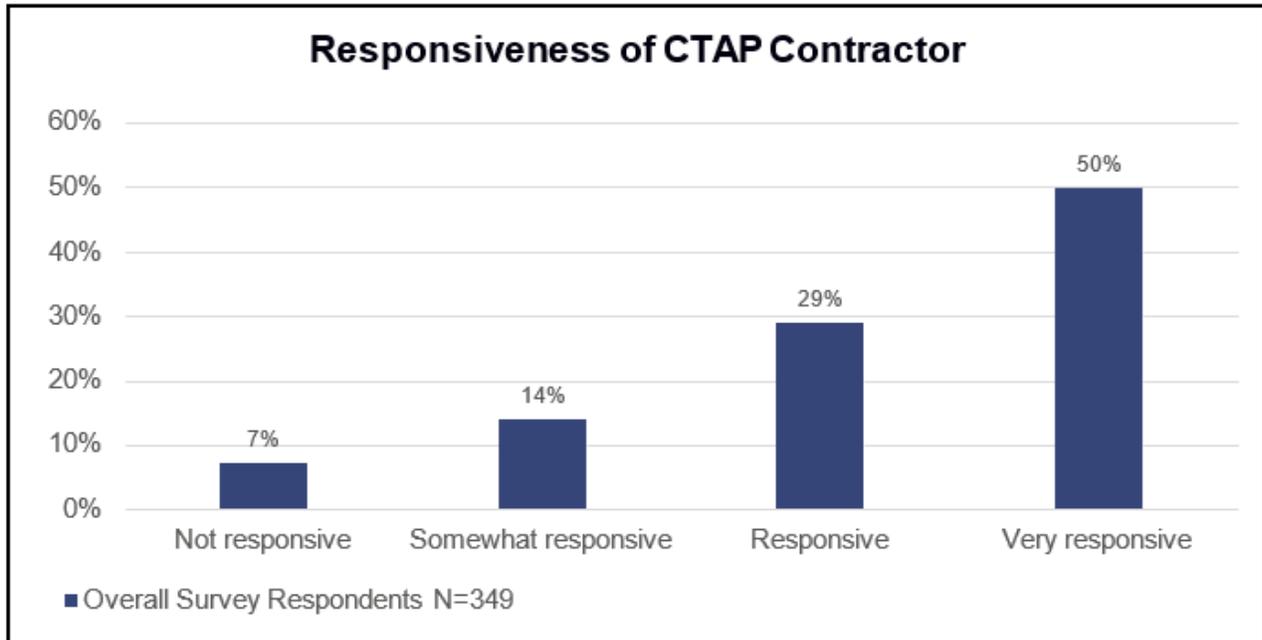
Respondents reported receiving technical assistance in a wide number of areas, with MU assistance being the most prevalent (73 percent).
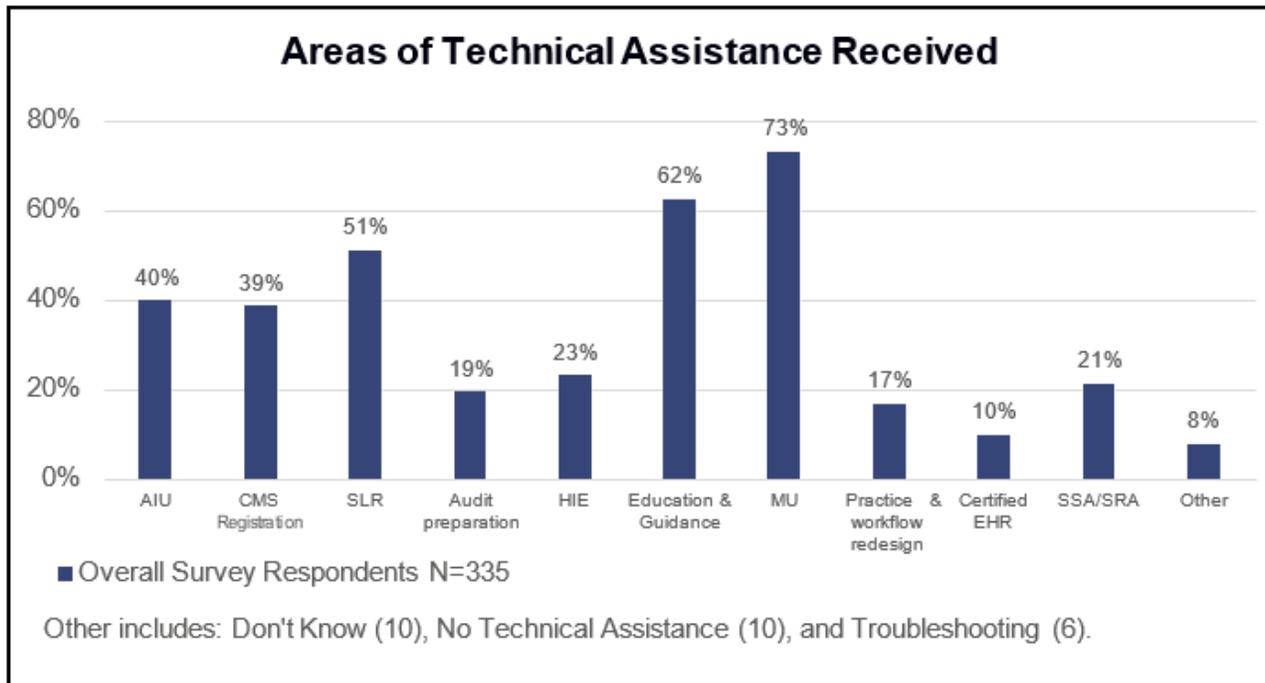
The value of technical assistance was highly rated in all areas. While the "other" category was not highly rated, this included "no technical assistance" as written in by some respondents.
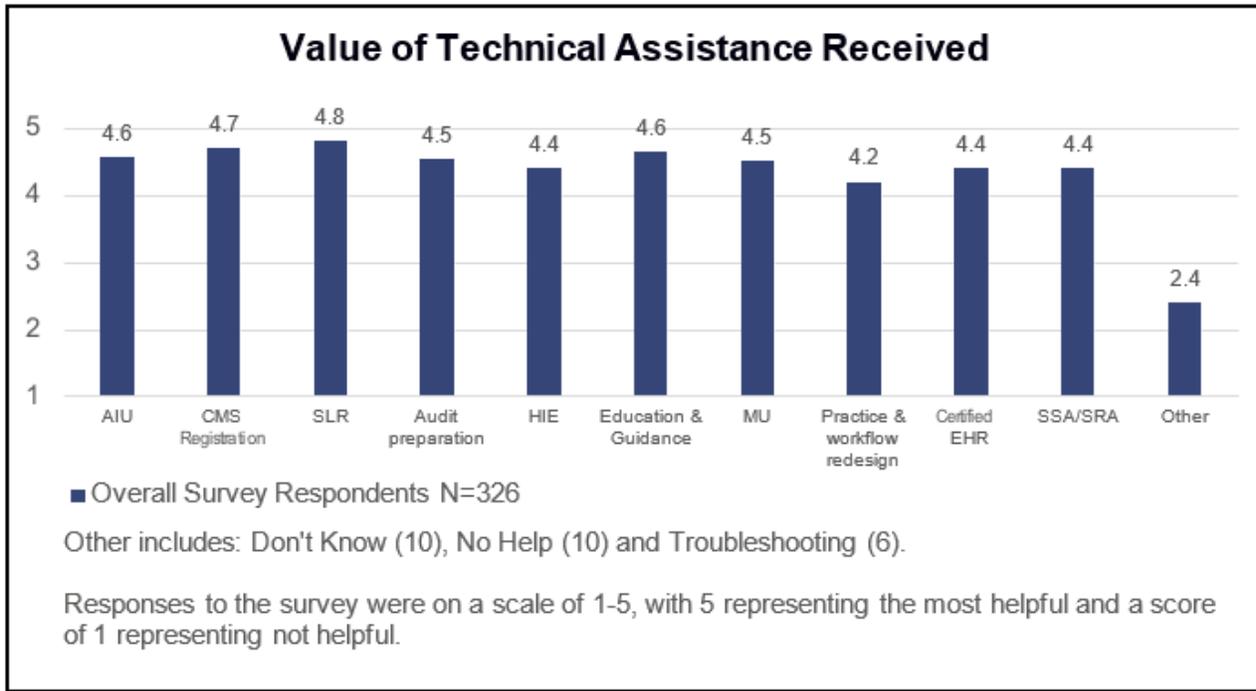
Most respondents reported being very satisfied (51 percent) or satisfied (24 percent) with CTAP assistance. 11 percent were either very unsatisfied (9 percent) or unsatisfied (2 percent). Unsatisfied respondents were contacted for clarification of their responses.
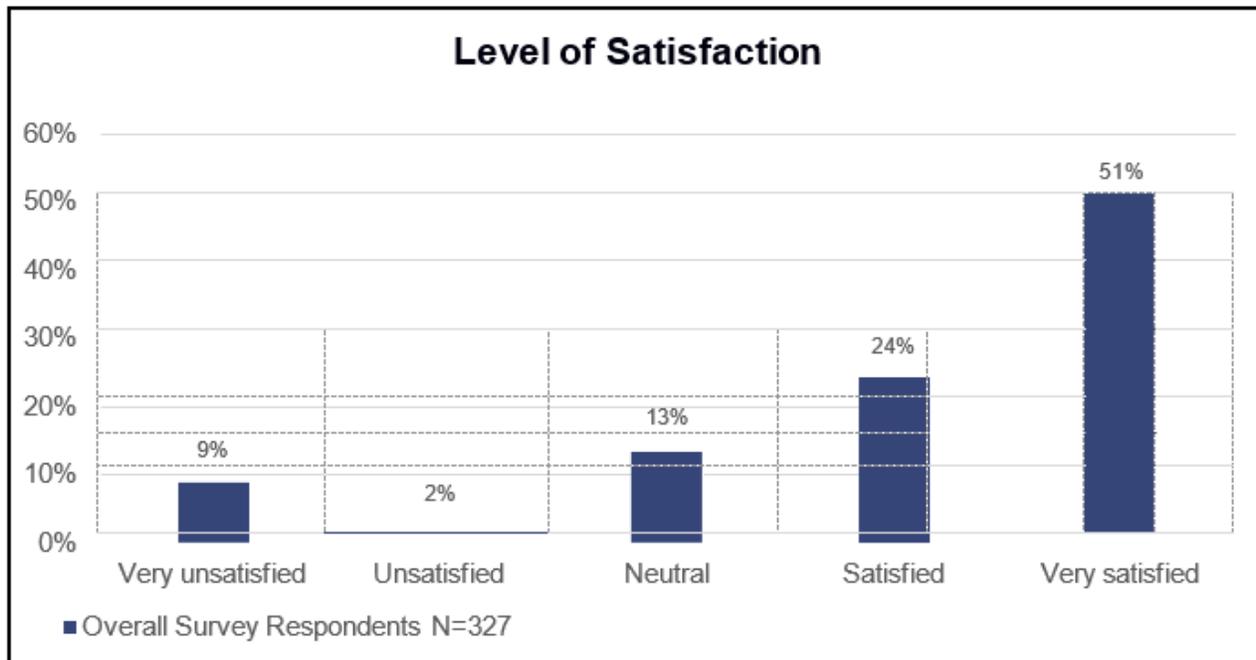
CONCLUSION

Based on the overall survey results, the majority of those participating in or working with a CTAP contractor reported that the assistance received was highly rated in all areas. The survey has found that CTAP contractors have offered a variety of services related but not limited to MU, audit preparation, education and guidance, and HIE, which work toward ensuring program longevity. Overall, survey respondents reported that CTAP contractors were responsive to requests for assistance resulting in a high level of satisfaction.

APPENDIX 32: CALIFORNIA'S POLST ELECTRONIC REGISTRY PILOT

CHCF
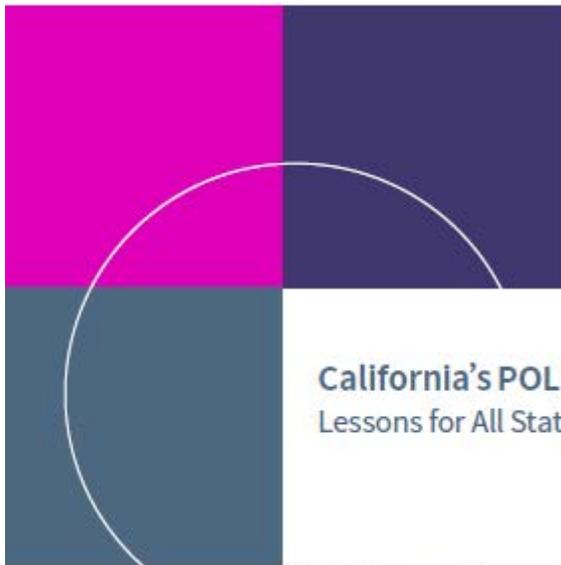
California's POLST Electronic Registry Pilot:
Lessons for All States

SEPTEMBER 2019

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About the Authors

This paper is based on a report prepared by the California POLST eRegistry Pilot Evaluation Team of Abby Dotson, PhD, director of the Oregon POLST Registry and research assistant professor at Oregon Health & Science University; Andrew Broderick, MA, MBA, research program director, Public Health Institute; and Valerie Steinmetz, MPH, program director, Public Health Institute. Synthesis of that evaluation report to prepare this paper was led by John Weir, MS, consultant with Paperclip Management Services and Susan Anthony, health care editor and writer.

About the Foundation

The California Health Care Foundation is dedicated to advancing meaningful, measurable improvements in the way the health care delivery system provides care to the people of California, particularly those with low incomes and those whose needs are not well served by the status quo. We work to ensure that people have access to the care they need, when they need it, at a price they can afford.

CHCF informs policymakers and industry leaders, invests in ideas and innovations, and connects with changemakers to create a more responsive, patient-centered health care system.

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This report describes a pilot test of the feasibility of a statewide POLST (Physician Orders for Life-Sustaining Treatment) electronic registry designed to make patients' end-of-life treatment wishes immediately available to all health care providers regardless of time or place.

POLST Background

Toward the end of life, when seriously ill or frail people cannot communicate their medical treatment choices, they risk receiving care that is inconsistent with their wishes. The National POLST Paradigm aims to ensure that people get the medical treatments they want, and avoid those they do not want, when they cannot speak for themselves in a medical emergency or due to serious illness. It encourages patients and their health care providers to talk about potential medical interventions, considering their diagnosis, prognosis, treatment options, and goals of care. These conversations should bring out what is most important to the patient and what they think makes a good quality of life.

If the patient desires it, their wishes are then formalized on a POLST form, which is a portable medical order that emergency personnel and other medical care providers can follow whenever and wherever the patient has a medical emergency and is unable to communicate. POLST forms can indicate wishes to receive all treatments aiming to prolong life, or comfort-focused treatment, or specific selective treatments. The patient has full control over what the POLST form says and can change or void it at any time.

POLST conversations and resulting medical orders are appropriate for people with advanced serious illness or frailty who are considered to be at risk for a life-threatening clinical event, where standing medical orders are warranted. Healthier people who want to document their general preferences for future medical interventions and to identify a surrogate decisionmaker would use an advance directive, which is a legal document that provides general guidance, not a medical order.

In California, POLST forms must be signed by the patient (or legally recognized health care decisionmaker) and the provider — a physician, nurse practitioner, or physician assistant. Typically, the signed POLST form is given to the patient so that it can (in theory) travel with the patient across care settings; the signing provider keeps a copy as well. In California, most POLST information is documented in paper format; these are bright pink POLST forms maintained and issued by the California Emergency Medical Services Authority (EMSA) and distributed by the Coalition for Compassionate Care of California (CCCC) through direct download from their California POLST website, or purchased in bulk from MedPass.

During an emergency, when POLST information is needed urgently, it may not be readily available, hindering care or resulting in treatment that is against the patient's wishes.

During an emergency, however, when POLST information is needed urgently, it may not be readily available. This could hinder care or result in treatment that is against the patient's wishes. In the absence of a POLST indicating other preferences, emergency medical services (EMS) personnel are required by law to do everything possible to save a patient's life, including CPR and putting the patient on a breathing machine. In California, 2008 legislation requires medical providers to treat in accordance with the orders outlined in a patient's POLST and gives immunity to providers honoring a POLST document in good faith. Currently, 45 states have adopted POLST or similar programs.[1]

Electronic Registries

To meet the challenges of rapid retrieval of POLST forms across clinical care settings and during medical emergencies, interest in the use of electronic registries to store and retrieve patients' documented wishes is gaining momentum. This approach enables health care providers to search for and retrieve POLST information specific to their patient.

The first POLST electronic registry was established in Oregon in 2009; by 2015–16, 45% of people who died in Oregon had an active POLST form in the Oregon POLST Registry (OPR) at the time of death. Eighty-seven percent of that cohort had "do not resuscitate"

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orders, and 88% specified either comfort measures only or limited treatment,[2] indicating preferences other than the standard of care for emergency medical treatment. Another analysis of OPR data found that people with advanced illness or frailty who had a POLST form in the registry had their wishes honored 94% of the time.[3]

Given the potential to impact care quality and ensure that patient wishes are honored, a small number of states are in various stages of developing electronic registries to store, manage, and provide access to POLST forms. Some of these efforts are described in Table 1.

Table 1. Examples of POLST Electronic Registry Activity

	CALIFORNIA (2017–18 pilot activities only)	NEW YORK	OREGON	WEST VIRGINIA
Year POLST Registry Started	2017 (pilot)	2011	2009	2009
Single or Multiple Registries	Multiple	Single	Single	Single
Organization Providing Registry Oversight	California Emergency Medical Services Agency had coordination responsibility for pilot; co-led by Coalition for Compassionate Care of California and California Health Care Foundation	Excellus Blue Shield, a nonprofit insurer	Oregon Health & Science University Department of Emergency Medicine through contract with Oregon Health Authority	West Virginia Center for End-of-Life Care, initially funded by the West Virginia Department of Health and Human Resources and currently funded by West Virginia University
Document Completion	Paper form upload and electronic form completion available for some organizations	Electronic form completion	Paper form upload and electronic form completion	Paper form upload and electronic fax submission
Method of Access to Registry	Electronic health record (EHR) and electronic patient care reporting (ePCR) integration with optional web-based portal for upload; backup call center for EMS; bidirectional transmission available; health information exchange (HIE) integration where HIE is present	Web-based portal with optional EHR and HIE integration	Web-based portal and call center–based system, bidirectional transmission available, HIE integration complete, access also available via Emergency Department Information Exchange (EDIE)	Web-based portal with HIE integration with the West Virginia Health Information Network
Bidirectional EHR Integration	Yes	Yes	Yes	No
HIE Integration	Yes, where HIE is present (one pilot site)	Yes	Yes	Yes
Emergency Medical Service (EMS) Electronic Access	Yes	Yes	No	Yes
EMS Access via Call Center	Activated for one pilot site; discontinued in 2019	No	Yes	No

Source: Adapted and updated from Electronic End-of-Life and Physician Orders for Life-Sustaining Treatment Documentation Access Through Health Information Exchange, Office of the National Coordinator for Health Information Technology, July 2018, https://www.healthit.gov/topic/health-it-health-care-settings/long-term-and-post-acute-care.

All clinicians who care for POLST-appropriate patients could benefit from access to POLST forms across care settings to understand what conversations have taken place regarding preferences for life-sustaining treatment, and to have access to that information in emergency situations.

In particular, timely access to POLST information would significantly benefit EMS field personnel, emergency department providers, hospital-based (inpatient) providers, and clinical staff in skilled nursing facilities (SNFs), to help them make critical decisions about treatment.

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POLST Electronic Registry (eRegistry) Pilot Project Background

In October 2015, California Senate Bill 19 (Wolk) required the state's EMSA to establish a pilot project to operate a POLST electronic registry (eRegistry) with non-state funding. The pilot launched in September 2016 with financial support from the California Health Care Foundation (CHCF). Core implementation activities ran through December 2018. While the original timeline for the pilot was targeted at 20 months, initial implementation challenges associated with governance, technology integration, organizational readiness, and provider engagement necessitated an eight-month extension to the timeline.

EMSA, CHCF, and CCCC provided overall pilot leadership and oversight; CCCC also provided project management for the initiative.

The goal of the pilot was to test the feasibility, functionality, quality, and acceptability of a POLST eRegistry in order to inform and support the development of statewide electronic access to POLST. These goals were to be tested in two types of environments:

1. A community where health information exchange (HIE) was actively used by health care provider organizations. This would provide an understanding of challenges, successes, and lessons learned when health data exchange has an existing infrastructure within which POLST data can be integrated for a variety of health care organizations, including EMS, health systems, SNFs, and hospices. The City of San Diego, under the leadership of San Diego Health Connect (SDHC), an HIE organization, served as the community for this approach; SDHC contracted with Stella Technology as the technology vendor for this pilot site.

2. A community without an HIE infrastructure or culture, yet where strong interest and commitment to POLST and advance care planning was present, and where a variety of health care organizations understood the potential benefits of a registry. Contra Costa County, under the

leadership of the Alameda-Contra Costa Medical Association (ACCMA), served as the community for this approach, and Vynca served as the technology vendor for this pilot site.

Additionally, an evaluation team from Oregon Health & Science University (OHSU) and the Public Health Institute (PHI) used quantitative and qualitative methods to assess outcomes and lessons of the pilot. Quantitative data were collected from pilot sites. Qualitative data included more than 200 key informant interviews with a wide variety of pilot participants, community stakeholders, and leaders of other POLST registries, as well as surveys and focus groups with registry users. This document is based on the final evaluation report provided to CHCF by the OHSU/PHI evaluation team.

Core Functionality Requirements

EMSA was tasked with creating guidelines for the pilot. The EMSA guidelines defined the pilot's operational structure, including the roles of pilot participants and the basic requirements for registry functionality. The pilot leadership team further defined core technical functionality requirements for POLST form input and retrieval, storage and processing, and security provisions. Throughout the pilot, revisions to these core functionality requirements were considered by the pilot leadership team in response to the practical realities of registry development in both communities.

Core Technical Functionality Requirements for Pilot Registries

Input and Retrieval

➤ Round-the-clock access to POLST forms in the registry through integration within EHR and via HIE portal, electronic patient care reporting (ePCR) (electronic records used by EMS personnel), and web-based registry portal.

➤ Ability to submit forms through integration within EHR and via HIE portal and the web-based registry portal.

➤ Ability to retrieve forms from EHR, HIE, and ePCR through integration with the registry, and via web-based portal.

- Use of single sign-on to minimize provider burden when accessing the registry through their EHR or other applications.

- Transfer of patient context or demographics if providers are already viewing a patient record in their EHR, HIE, or ePCR.

Storage and Processing

- Use of minimum set of patient-identifying demographic data elements in structured format.

- Availability of submitted forms and entered information for viewing by authorized users within 24 hours.

- Procedures in place to archive and display forms for users to be able to distinguish current from outdated forms.

- Procedures in place to protect the confidentiality of patient identifying data when stored electronically.

- Procedures in place to automatically verify that data fields of submitted electronic forms have been completed correctly and to detect errors (e.g., contain no inconsistencies or gaps).

- (Optional) Ability to reconcile forms against a standard statewide registry to ensure that forms of deceased patients do not remain active.

Security and Standards

- Secure EMS access from mobile platforms as well as a round-the-clock call center.

- Procedures in place for electronically authenticating the identity of authorized users.

- Ability to audit utilization (e.g., portal access, queries placed, forms retrieved).

- Ability to prevent simultaneous user account access from multiple locations.

- Compliance with technical standards to ensure proper configuration and security.

Structure of the Pilot Project — Two Environments

Each of the two pilot sites brought specific organizational, technical, and operational characteristics and challenges; together they enabled the pilot to gather a reasonable understanding of how POLST eRegistries may be implemented in different environments with different sets of stakeholders and assets.

San Diego

Led by San Diego Health Connect (SDHC), the San Diego pilot provided insight into how electronic exchange of POLST can be integrated into an HIE environment, and how HIE participants may incorporate POLST form submission and access to their preexisting HIE-related workflows. This community's technology infrastructure and longstanding culture of HIE between hospitals, health systems, EMS, and other provider types within the community were well aligned with the goal of testing POLST eRegistry implementation. Key assets included:

- SDHC's core HIE functionality and federated architecture, in which health care data reside with each participant organization (e.g., a health system), all participant organizations submit specified data elements to SDHC, and SDHC's query/response methods enable users to access these data from other organizations.

- Experience with community collaboration efforts, which during the pilot included leading an ongoing POLST workgroup of health systems and other stakeholders to discuss POLST eRegistry strategies, activities, progress, and obstacles.

- Experience implementing SAFR (search, alert, file, reconcile) functionality, which integrates EMS systems with HIE organizations to enable EMS personnel in the field to access and securely share a patient's vital medical information electronically.

SDHC's participants (organizations that are members of the HIE) include broad representation of health care settings. While not all were involved in populating SDHC's registry, 34 organizations had access to forms in the registry, including eight health systems, one EMS agency, 15 Federally Qualified Health Centers, one hospice, and

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one medical group serving 11 SNFs, along with various other local and regional organizations. SDHC's most active participants in the pilot registry efforts included Sharp HealthCare, University of California San Diego, Rady Children's Hospital, Integrated Health Alliance and their affiliated SNFs, and City EMS.

Two principal mechanisms were used for local providers to access the registry, depending on whether their organizations were participants in and actively transmitting data to the HIE. HIE participant organizations could have direct integration with the HIE and access to the registry through their standard HIE access mechanisms. Users in nonparticipant organizations could have access to the registry through a web-based portal. City EMS users had access through the direct integration of their ePCR with the HIE, and a backup call center had access to the registry through a web portal (although this functionality was ultimately determined by this site to be unnecessary).

Because SDHC had not been involved in receiving and processing POLST forms from HIE participants prior to the pilot, an immediate need was to better understand each participant organization's policies and practices regarding POLST document management. This knowledge informed the approaches used for each institution. At the outset of the pilot, the planned process for HIE participants to upload POLST forms to the registry was to scan paper POLST forms into their organization's document management system and automatically transmit those scanned forms electronically, via HL-7 message feed, to the registry (in addition to maintaining a copy of the form in the participant organization's EHR). This planned process had to be adjusted during the pilot given a number of technical barriers described under "Pilot Outcomes" below. Organizations without direct integration and with no automated feed were to use a manual process for uploading scanned forms through a web portal.

Figure 1. SDHC High-Level Flow View

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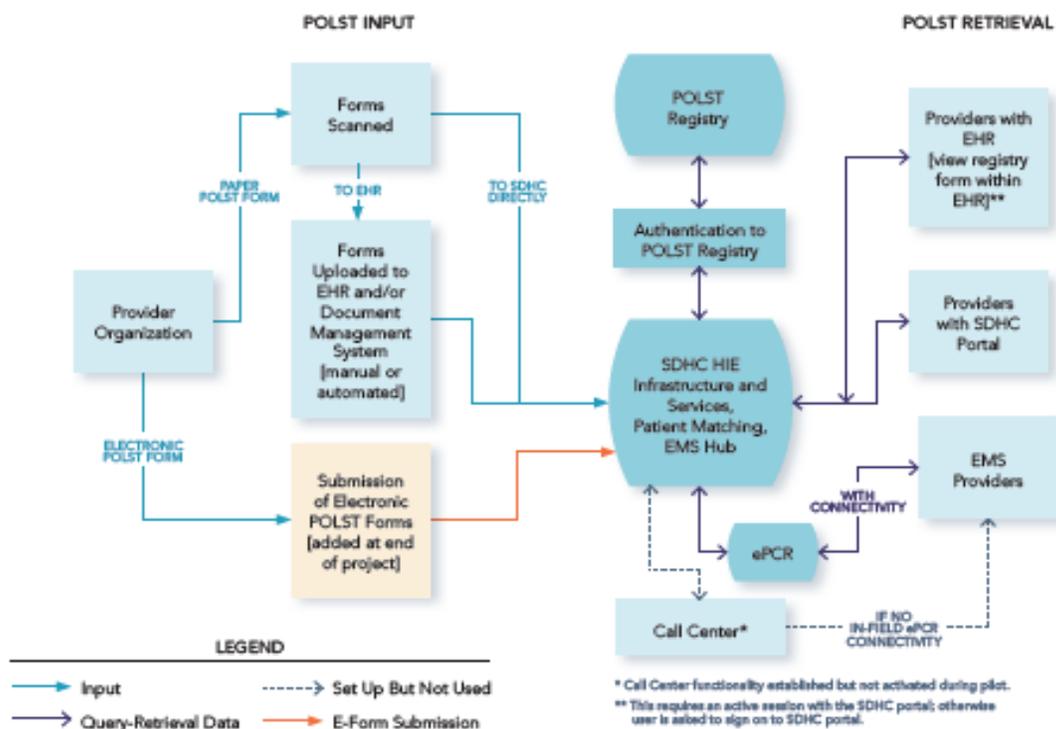
Contra Costa County

The Contra Costa County pilot was led by Alameda-Contra Costa Medical Association (ACCMA), a professional association of physicians in Alameda and Contra Costa Counties that works to improve public health, health care quality, and patients' access to care. ACCMA had served as that region's local POLST coalition (promoting POLST education and implementation activities) and has led other community initiatives related to improving advance care planning. This pilot site provided the opportunity to understand POLST registry implementation in a setting with strong advocacy and collaboration among the physician community but lacking an HIE infrastructure, community-wide information exchange governance practices, or a common technology platform to house a POLST registry. The technology vendor for this site, Vynca, provided the registry platform with several distinct mechanisms of access to the registry depending on the provider type and its EHR system:

➤ Health system users had access to the registry through integration with the Epic EHR system; Vynca/Epic integration functionality pre-dated the pilot. Cerner EHR integration would have also been pursued if a health system using Cerner had engaged in the pilot, but this did not occur. EHR integration enabled POLST form submission to and retrieval from Vynca's registry.

➤ Skilled nursing facilities (SNFs) had access to the registry through integration with PointClickCare (PCC), an EHR system used by approximately 70% of SNFs in Contra Costa County, which enabled POLST form submission and retrieval. Vynca/PCC integration took place much later in the pilot than originally anticipated due to changes to PCC's approach to all third-party platforms.

➤ SNFs without PCC integration, and other providers in Contra Costa that were not integrated through other EHRs, had the opportunity to use a web-based portal to manually upload scanned paper POLST forms to the registry. Users of this service were only able to view forms that they or their designated staff submitted; the ability to access the full registry required EHR integration.

➤ Contra Costa County EMS personnel could retrieve forms from the registry through the electronic patient care reporting (ePCR) software of its ambulance provider, American Medical Response, via a query process. If internet connectivity to the registry was not possible in the field, EMS personnel could contact a backup call center, managed by California Poison Control, with search and view access to the registry.

Vynca's platform does not differentiate between the mechanisms or formats by which forms can be submitted to the registry as long as they are received from a previously validated source. Authentication of EHR users was achieved through direct integration to provide single sign-on, whereas individual web-based portal users registered through an identity verification process.

The most actively engaged participant in the Contra Costa pilot was Sutter Health, which had been in discussion with Vynca prior to the pilot about Vynca's full suite of advance care planning tools. While the geography of this pilot site was Contra Costa County, Sutter Health contracted with Vynca for an enterprise-wide deployment that extended across all of Sutter's hospitals and clinics in Northern California. Additional active participants included five SNFs; Contra Costa EMS and its provider, American Medical Response; and community providers including two additional SNFs, a community clinic, two hospices, and individual physicians who registered to submit POLST forms to Vynca's registry through the web-based portal.

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Figure 2. Contra Costa County High-Level Flow View
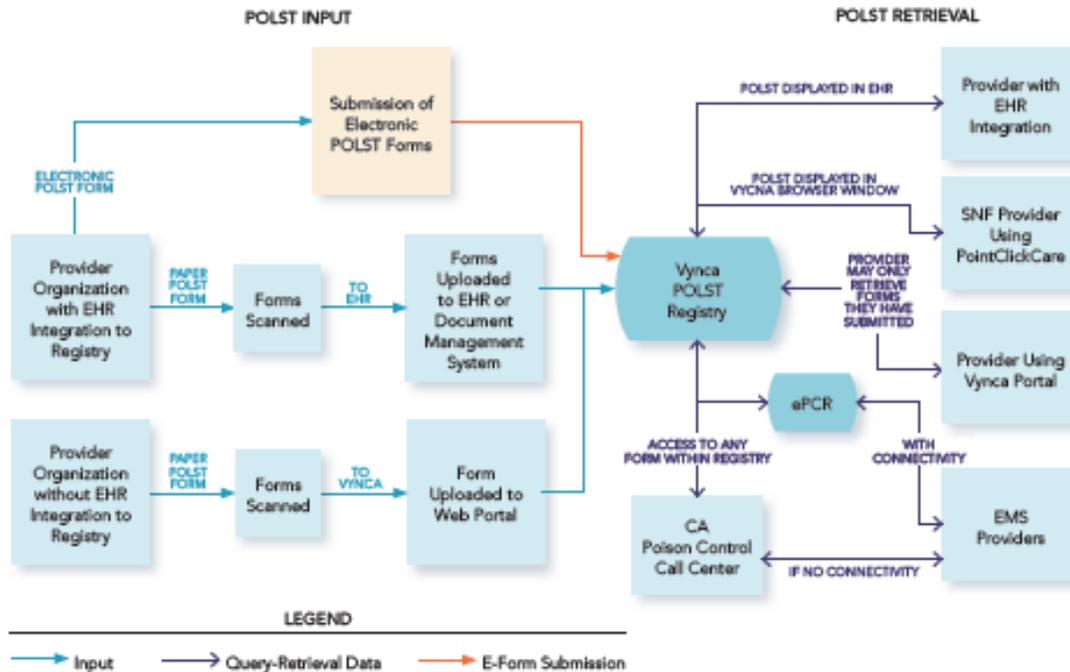
Pilot Outcomes

Both pilot communities implemented their respective eRegistry solutions — enabling POLST form submission, storage, and retrieval based on the capabilities and needs of different organizations — despite numerous challenges. Original eRegistry design specifications were revised during implementation in response to the realities of document practices and workflows across the different provider types and care settings.

Overall, both pilot sites were unable to engage as many participants in the registries as they originally aimed to, due to a variety of factors explored in this report. While the limited participation meant the registries did not achieve community-wide penetration and use during the pilot period, each pilot community was able to engage different types of organizations (e.g., health systems, SNFs, EMS, and others), which facilitated learning about the unique barriers in different settings.

In both sites, POLST form submission was primarily performed by scanning paper forms, as opposed to electronic form completion and submission. This was in part related to the design of the pilot, which did not require electronic form completion capability. However, Sutter Health did elect to include Vynca's electronic form completion capability in its enterprise-wide rollout; data from January 2019 showed that in that month, about 8% of Sutter's POLST forms submitted to the Vynca registry were electronically completed. Late in the pilot, SDHC also worked with Stella Technologies to build electronic form functionality into the SDHC registry; by the end of the pilot, that functionality was undergoing testing and initial rollout.

Over time, both registries are anticipated to encourage increased use of electronic form completion, given its advantages in reducing incomplete forms or forms with conflicting orders by using real-time decision support and alerts.

Importantly, use of the POLST eRegistries continued after the pilot project (and grant funding) ended. Organizations in both communities recognized the value of access to POLST across care settings, and showed continued commitment to ensuring adherence to patient wishes.

eRegistry Use

Health system engagement was key to populating the registries during the pilot. While many individual providers and other organization types (SNFs and hospices, for example) regularly produce POLST forms, the sheer volume of forms created in hospital and health system settings and their robust integration of EHRs in patient care make them the necessary centerpiece of any POLST eRegistry effort. In SDHC's registry, 98% of the forms submitted came from health systems; in Vynca's registry, 99% were from health systems. Following are details from the two communities.

During the pilot, 30,378 unique POLST forms were submitted to San Diego Health Connect's registry, and 216,836 forms were submitted to Vynca's registry across Northern California, including the Contra Costa County pilot site.

San Diego

Over 15 months (January 2018 to March 2019), 30,378 unique POLST forms were submitted to SDHC's registry, including initial backloads and ongoing submissions. Sharp HealthCare was the highest-volume submitter with 27,394 unique forms, followed by University of California, San Diego Health with 2,377, the Integrated Healthcare Association (a medical group serving SNFs) with 478, and Rady Children's Hospital of San Diego with 129. The number of POLST form retrievals ranged from 113 to 620 across those sites (a total of 1,281 retrievals). The most form retrievals (1,700) came from City EMS, where the preexisting SAFR (search, alert, file, and reconcile) technology, which enables bidirectional information exchange between City EMS and SDHC, was modified to add POLST forms to the information automatically queried and retrieved for EMS personnel. This "push" technology — which alerted EMS personnel when a

POLST form was available in the registry for their patient — enabled them to access critical POLST information in the context of their existing workflow.

Contra Costa County

The Vynca registry went far beyond the pilot site of Contra Costa County, given Vynca's enterprise-wide contract with Sutter Health. Across Northern California, more than 130,000 POLST forms from Sutter were backloaded in February 2018; ongoing Sutter form submissions and other community participation in the county brought the total to 216,836 forms as of January 2019. In addition, 1,208 POLST forms were uploaded into the Vynca registry through the web portal from September 2017 through March 2019, both by SNFs (before their PointClickCare integration took place late in the pilot) and by other individual providers and organizations. After PointClickCare integration, 31 additional forms were uploaded from four SNFs in the county.

After initial form backloads, Sutter submitted an average of about 2,800 forms per month to the Vynca registry, and three San Diego health systems submitted about 1,400 forms per month to the SDHC registry, for a combined total of 4,200 form submissions per month for these two new regional registries. For comparison, the Oregon POLST Registry had 4,200–5,500 forms submissions per month statewide in 2018.[4]

POLST Document Quality, Practices, and Workflow

Across both sites, the pilot demonstrated the importance of understanding and addressing the quality and consistency of organizations' POLST practices before trying to integrate with a registry, to ensure that the information captured in the registry is complete and accurate. This includes attention to processes for:

▶ Identifying which patients are POLST-appropriate.

▶ Determining whether an accurate POLST form has already been completed.

▶ Facilitating a high-quality conversation about the patient's health condition and preferences for medical treatment, and completing a POLST form when desired.

► Identifying and addressing incomplete forms (e.g., missing signatures) or those with conflicting orders, as these forms are invalid.

Practices and workflows for managing POLST forms varied considerably within and across the different provider types. For example, each organization typically had its own internal process for scanning forms for electronic storage within its health records, as well as for electronic retrieval and archiving. Larger health systems with a range of patient encounter types (ambulatory office visits, hospital discharges, intakes, and registration) were especially challenged by variation in the location of POLST forms. Scanned paper forms were often inconsistently stored or labeled (e.g., bundled together with other advance care planning documents), requiring careful analysis to address these issues during the early stages of readiness assessment and planning.

Overall, pilot experience demonstrated the critical necessity of understanding existing workflows for various users and ensuring that the registry would cause minimal disruption to those workflows. If the registry required end users to use processes outside their usual workflows or to go through multiple steps, adoption was slower and more limited compared to settings with full EHR integration or where system prompts made it easy for users to input or retrieve forms.

Document Management Systems and POLST

Many health care organizations use document management systems that function alongside the main EHR. They store images such as x-rays and CT scans as well as paper forms like POLST.

San Diego's original registry design planned for automatic transmission of scanned forms from document management systems, via an HL-7 message feed, to the registry. In practice, however, customized solutions were needed based on document format (e.g., PDF versus TIFF or JPG), health system storage practices (e.g., varying location of documents within the EHR), and versions of the document management system in use by different health systems.

SDHC ultimately worked with the document management system vendor to establish a direct outbound feed of POLST forms from two participant health systems; this should ease the process of onboarding additional users to the SDHC registry in the future.

Outcomes Specific to Type of Care Setting

While many of the implementation enablers or barriers were specific to particular organizations or technology systems, some common findings were associated with the three main types of participant care settings — health systems, skilled nursing facilities, and emergency medical services.

Health Systems

► Because of their size and complexity — and the number of people impacted by changes in workflow or processes — health systems that successfully engaged with the registries provided the structure, support, and accountability of a dedicated project team as well as leadership support and resources. These capabilities enabled systems to push through barriers.

► Multisite health systems tend to approach any information technology (IT) project, including POLST eRegistry participation, with a systemwide strategy. For example, Sutter Health pursued a systemwide implementation across Northern California rather than implementing only at their one hospital in Contra Costa County during the pilot. Systemwide strategies impact the time and resources needed for implementation and are essential for health systems that stretch across the catchment areas of multiple regional registry efforts.

► Health system success relied on providers' and staff members' commitment to populating and using the registry as a "single source of truth," preventing duplication of effort in uploading or retrieving forms from multiple platforms and ensuring the registry holds the most current POLST forms. Trust in the mechanisms for version control was essential for user confidence in the registry.

Skilled Nursing Facilities

► Integrating SNFs into POLST eRegistries is essential, given the critical health status of many SNF patients, but significant challenges exist. In the pilot communities, SNFs demonstrated highly variable use of EHRs, many operating with a

combination of paper and electronic recordkeeping. In some SNFs, providers charted in their own health system's EHR and did not have access to the SNF's EHR, limiting the ability to move provider-dependent paper-based processes to electronic systems. These challenges mean POLST is susceptible to being maintained as a paper-only record in SNFs, challenging efforts to automate transmission of POLST forms to a centralized registry.

▶ In California, SNFs are required to document all patients' preferences regarding CPR. While POLST addresses more than just CPR, some SNFs may conflate documenting CPR preferences with POLST completion, and may make POLST form completion a routine part of the patient admission process. The pilot revealed a need to better understand how SNFs are using POLST forms in patient care, and how SNFs are communicating about patients' POLST information with hospitals as patients transition between these care settings. Considerations warranting attention include the following:

- Ensuring POLST is only discussed with patients who are POLST-appropriate (people with advanced serious illness or frailty who are considered to be at risk for a life-threatening event) and that it is presented as optional, not a required admission form.

- Securing POLST forms that may have already been created in other settings (such as during a hospitalization preceding the SNF admission) rather than creating new POLST forms. This requires clear information exchange workflows between these organizations.

- Implementing reliable processes for primary SNF staff (nurses and nurse aides) to facilitate: timely POLST conversations between providers and patients, provider review of POLST forms that may have been populated by other staff, confirmation of the form's accuracy, and obtaining the provider signature.

▶ Pilot organizations observed that many SNFs are resource constrained, lacking localized technical expertise or project support to implement change

processes or new technology platforms. These constraints pointed to the need for a dedicated, coordinated effort by community stakeholders to ensure appropriate integration of SNFs into POLST registry efforts.

Emergency Medical Services

▶ EMS field personnel are primary end users of POLST eRegistries. The pilot demonstrated the importance of integrating POLST form retrieval into existing EMS workflows. For example, "push" notifications that were embedded in existing EMS ePCR systems — proactively informing users of the presence of a POLST form in the eRegistry — were preferred over manual search processes.

▶ Where query functionality was implemented rather than push notification, usefulness was limited by the low volume of forms from that specific geography. A registry needs to achieve a critical mass of POLST forms from a given geography (such as the EMS agency's catchment area) before it is made available for searches by EMS teams to help avoid the frustration of frequently unsuccessful searches.

▶ How and when EMS personnel could access forms from an eRegistry influenced whether and how POLST forms were consulted during an emergency. The pilot demonstrated some technical and operational considerations for EMS in this regard, including:

- Whether connectivity issues impacted EMS personnel access to ePCR information outside of the ambulance when treating a patient

- How long it took for paramedics to access records for a specific patient while on scene, versus during transport to the hospital

▶ The pilot experience pointed to the need to consider approaches for EMS access to POLST eRegistries that look different than for other care settings. If the infrastructure for information exchange with local EMS agencies is less robust, alternate approaches to full ePCR integration may be warranted, such as access via smartphone, medical alert bracelets/barcodes and associated phone applications, or dedicated call centers for EMS.

Lessons Learned

The pilot demonstrated many challenges and considerations for a statewide eRegistry rollout and long-term sustainability. Lessons learned in both regions produced insights and ideas for entities interested in pursuing POLST eRegistries. They fall into five main areas — some overlapping in practice — that are discussed below:

- ▶ Organizational readiness and commitment
- ▶ Community engagement / stakeholder and participant education
- ▶ Workflow considerations
- ▶ POLST document practices
- ▶ Technology features and functions

Organizational Readiness and Commitment

Ensure high-quality POLST implementation before starting an eRegistry project. This requires health care organizations to have robust POLST programs that ensure POLST is being implemented appropriately — as an optional process for people with advanced serious illness or frailty that is centered around high-quality conversations between providers and patients (or their legal decisionmakers) — and that the organizations' POLST forms are valid: complete patient information, signed, and containing consistent orders.

Optimize organizational readiness. In the pilot, the challenges encountered and the level of effort required for organizations to implement connections to the registries were greater than anticipated, especially in settings that did not already have a POLST-related effort underway. To assist other organizations preparing for a POLST eRegistry, the pilot partners team developed a Readiness Assessment Tool to identify some of the needed preconditions and capabilities and to help organizations anticipate and address barriers.

Establish and support a project champion/lead. It is critical to provide designated leaders with adequate time to manage the process of connecting to the eRegistry,

engage other stakeholders, and address problems as they arise. The POLST eRegistry champion/lead need not be a physician; in some settings, administrators, social workers, or medical records staff may be more appropriate and effective eRegistry champions.

Involve decisionmakers up front. Initial engagement of health systems should generally include a clinical champion, health system administrator, and the IT/medical records group, to ensure broad understanding, buy-in, and prioritization of the project as well as to clarify technical requirements and necessary preconditions to implementation.

Prepare for staff turnover. Turnover of staff within registry organizers and among champions at participant organizations happens; mitigating the disruption that turnover has on project activities and goals should be prioritized. Because much of the work of POLST eRegistry development is change management that depends on individuals, strong relationships between partnering organizations is essential to weathering staff changes.

Community Engagement / Stakeholder and Participant Education

Engage stakeholders in the eRegistry's targeted community early. To establish POLST eRegistry efforts as a shared priority, organizations need lead time to build budget and staff support. Promote awareness and buy-in among all organization types and stakeholders that are key to populating or retrieving forms. Early engagement helps those organizations understand how POLST eRegistry efforts fit into and may support their existing priorities.

Create standard processes and provide ample education. Any change process requires extensive education and participant engagement over time. Standard processes for input and retrieval must be supported by ongoing training and education of providers and staff.

Consider financial incentives to encourage participation. Funds were not available to encourage health care organizations to participate in the pilot, other than providing the technology for free during the pilot period.

This proved to be a deterrent for some organizations. Where possible, those leading eRegistry efforts may want to consider the role that financial support or incentives could play in promoting engagement.

Prepopulate POLST registries to a critical mass. Ensure that a sufficient volume of forms has been loaded to the registry in advance of going live and giving access to EMS, emergency departments, and others that require access to POLST forms. User adoption will suffer if searches frequently lead to no results.

Workflow Considerations

Ensure that processes will work for *all* user types — even those without EHR/eRegistry integration. Make submitting and retrieving forms as easy as possible for as many different provider types and settings as possible. This may mean providing a number of different ways that users can submit forms, including older processes (like fax or manual uploads) that seem antithetical to the long-term goals of automation but which may be necessary in the near-term. Ease of use needs to be appropriately balanced with sound data security practices; this balance can be difficult. Challenges with engaging participants in the pilot underscored the importance of easy access to inputting and retrieving POLST forms, even for those without EHR/eRegistry integration. Providers and organizations that had to incorporate several additional workflow steps proved difficult to engage or maintain as participants. If users experience frustration with using the eRegistry, they may quickly give up.

Where possible, avoid the burden of manual processes. In some cases, manual processes for tasks such as uploading forms may be necessary, either as an interim step while technical integration is being developed or on an ongoing basis due to technical limitations. However, organizations' motivation to participate in eRegistry efforts are likely to be much higher if automated, behind-the-scenes processes are in place.

POLST Document Practices

Assess how file format and documentation management system capabilities impact integration. Even with preexisting HIE functionality at the San Diego site,

activation of a feed for POLST forms was not straightforward because of variations in POLST file format and document management policies and practices among HIE participants.

Establish POLST form quality-assessment processes. The pilot shed light on preexisting POLST form quality problems, including incomplete forms (e.g., missing signatures) and those with conflicting orders that rendered them invalid. POLST form quality remained a concern throughout the pilot. Moving forward, eRegistry organizations and their participants should clearly identify their respective roles and processes for addressing these quality issues.

Ensure reliable, accurate documentation of signature date for version control. In some cases, forms that were uploaded to the registry in batches through automated feeds displayed the date of upload rather than the physician signature date; this made it difficult to identify the most recent form if a patient had multiple forms in the registry. Form submission workflows need to include careful attention to this data element.

Technology Features and Functions

Prepare a test environment. Providing a test environment with sample forms allows participants to gain comfort with the eRegistry and helps identify any workflow issues that can be addressed by tweaks to the technology before rollout.

Implement single sign-on (SSO) where possible. SSO between the EHR or HIE systems and the POLST eRegistry reduces the burden of having to log in with different usernames and passwords for authentication on these different systems. In addition to user authentication credentials, the SSO process includes the passage of patient identity information between the initiating application to the receiving application, further reducing user burden by taking away the need to manually search for a patient within the eRegistry.

Recognize and address the limits of optical character recognition (OCR). One pilot site had intended to use OCR technology to capture specific fields from scanned paper POLST forms. Although the OCR functionality

worked effectively in a test environment, during implementation the low quality of scanned forms prevented the use of OCR. Problems included holes punched on paper forms over key fields, labels placed over text, incomplete forms, low resolution or reduced-scale scans, and illegible handwriting. As a result, users uploading scanned forms had to manually enter required patient-identifying data. In addition to the burden on users, this required the registry to manage a manual exception queue for forms to be examined by staff to assess accuracy and completion before submission to the registry.

Where EHR integration is lacking, consider eFax options. In the interest of engaging as many providers and organizations in the eRegistry as possible, consider online fax (eFax) submission as one option for form submission, rather than manual methods for uploading scanned forms into a web portal.

"Push" POLST forms rather than relying solely on queries. Electronic alert notifications within the ePCR, EHR, or HIE system indicating that a POLST form exists in the registry allows for quick access and relieves providers or paramedics of the burden of manually searching for a form. In HIE settings, efforts should be made to link to a POLST eRegistry within the EHR banner of HIE participants to eliminate the need for users to check for forms in both the EHR and the HIE.

Three Potential Models

Although the pilot did not definitively demonstrate the feasibility of a single California POLST eRegistry, it did point to possibilities for future approaches. The pilot project evaluators identified three potential models with summarized pros, cons, and overall feasibility, as shown in the table on page 16.

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Table 2. Potential Models and Pros, Cons, and Overall Feasibility

	SINGLE STATEWIDE REGISTRY	REGIONAL/LOCAL REGISTRIES	HYBRID SYSTEM
Description	A single statewide registry would replace regional registries and be a unified repository and operation for POLST forms. This could be run through a third-party vendor, by the state, or by another organization type (health care, university, nonprofit, etc.).	All current registries would continue to operate with no change. Registries would have the option to expand, or new registries could be established to cover areas without registries. Individual health care systems, health plans, and/or other local organizations would be responsible for funding.	All current registries would continue to operate and expand under guidelines set in place by a single overseeing entity. A universal data set structure would unify registries into a single repository or into a reference architecture that enables interoperability between different systems.
Pros	Would allow patients to travel throughout the state and still have their medical wishes honored without concern that the POLST form would be lost. Statewide system would allow for more cohesive data and better access for outcomes studies and research.	May provide a scalable cost model based on the number of organizations participating. Current registries could continue without disruption or change in workflow. State-level oversight may remain at the level of creating, and requiring the endorsement of, standards for registries to adhere to. Individual health care organizations could have complete control of their own data and the requirements for their own organization's workflow.	Theoretically may offer the benefits of the single statewide registry option without eliminating the presence of established regional registries. Current registries would continue with minor disruption or change in workflow. Both individual health care systems and an overseeing organization could fund eRegistry components. May provide the opportunity for patients' forms to be available across a broader region based on interconnectivity of registries. A standards-based data set structure would allow for more cohesive data outcomes studies. Individual health care organizations could still have control of their own data and workflow while contributing data to a broader network.
Cons	Would need considerable funding that may include multiple sources. Implementation and rapid momentum to scale would be difficult since many organizations would have to connect directly to the registry. Established, local registries would need to feed this model and would likely close down. Form access or bidirectionality would need to be unified for multiple health care types and systems. Would need to determine data ownership structure. Would need to sustain extremely high volume of forms/data. Would need to establish a lead organization accountable for the initiative.	Patients traveling away from their region may not have their medical wishes honored unless local registries establish interoperability with each other. Adoption may be low, especially for smaller clinics, SNFs, hospices due to potential local costs and lack of support (operational and technical). Ability to do any type of systems effectiveness or outcomes research, auditing, and standardization would be difficult.	Redundant mechanisms may mean more duplication in costs, workflow, and POLST forms in the registry. Adoption may be lower, especially for smaller clinics, SNFs, and hospices due to costs.
Feasibility	Although this approach would have the greatest opportunity to impact patient care statewide and to achieve economies of scale in implementation costs, extensive coordination would be needed to fund and execute a unified approach.	Highly feasible in the near-term since it builds on the current reality of regional registries throughout California, while allowing additional regions to build solutions that work for their environments.	Implementation and operations would take careful planning, and considerable time may need to be spent in determining oversight entity and funding.

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Recommendations for States Seeking a POLST eRegistry

The goal of the pilot was to test the development and implementation of POLST eRegistries to inform the establishment of statewide electronic access. Although the pilot was conducted in California, the following recommendations for the development, implementation, and sustainability of a statewide POLST eRegistry apply to all states.

State and Regional Infrastructure

▶ **Assess the state's technology infrastructure capacity.** Conduct an environmental scan to determine if the infrastructure can support full interoperability for the exchange of data between care settings. Assess emerging technologies with potential to automate eRegistry functionality and integration with existing health information technology solutions and workflows.

▶ **Assess the organizational infrastructure to house a statewide registry.** Explore policy mechanisms that establish the governance framework in areas of data exchange, security and privacy, ownership, and promotion of standards in electronic POLST form completion. Work with health care professional organizations and patient advocacy groups to develop guidelines for registry-based POLST management practices.

▶ **Identify funding sources for sustainability.** Assess future funding sources to invest in both eRegistry development and the integrity of the underlying POLST program (education, training, marketing). Health plans and risk-bearing health care entities would be most likely to see the value in investing in a statewide registry.

▶ **Invest in POLST education, training, monitoring, evaluation, and standardized guidelines.** All of these are critical for strengthening the quality and sustainability of a registry.

Community Resources

▶ **Engage with and understand the community.** The development and implementation of a registry must be founded on a comprehensive understanding of patient flow patterns, the care systems that patients use, and where POLST forms have been created and used within the community.

▶ **Convene community stakeholders dedicated to solving a shared problem.** Bring together health systems, emergency services, hospitals, long-term care facilities, hospices, and community physicians to discuss the development, implementation, and targeted outcomes of an eRegistry.

▶ **Evaluate implementation readiness.** Assess organizations' leadership, strategy, technology, and content management practices in order to understand the degree of customization that will be required during implementation. Readiness will be affected by organizations' cultures, technology infrastructures, resource availability, and workforce capacity.

▶ **Work effectively with health systems.** These organizational systems of care tend to view technology adoption at the enterprise level, rather than at the geographic level, and each system has its own unique culture. Implementation timelines must align with the systems' established internal practices for conducting IT-related due diligence.

▶ **Promote POLST education across the community.** Implement grassroots outreach and a marketing campaign to promote POLST, identify champions to advocate for high-quality POLST use within organizations, and develop a training infrastructure that engages participants in continuous education.

▶ **Present a business case.** Enable providers, payers, and other stakeholders to see the value of community-wide participation. The introduction of continual research capabilities with a registry will help demonstrate its ongoing value for patients and health care systems.

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Prioritization of User Needs

▶ **Promote the development of user-centered products.** eRegistry products and procedures should integrate POLST workflows seamlessly with existing EHR and HIE functions.

▶ **Adopt best practice guidelines.** Best practices for eRegistries include automated bidirectional integration, standards for POLST document workflow management, continuous quality improvement metrics, and outcomes research.

▶ **Introduce quality audits of scanned paper forms before submission to the registry.** These should be accompanied by an educational feedback loop to target deficiencies in POLST form completion.

▶ **Provide ongoing user support.** Provide education, training, and continuous communication on POLST eRegistry use. Include nonphysician staff, such as nurses and social workers, as well as retrieval training for those with a greater need to access POLST forms (e.g., EMS and ED personnel). Install user support services to assist with registration, training, and troubleshooting, including contingency procedures in the event of system downtime.

▶ **Invest in supporting organizations through change management activities.** Technology adoption and implementation rely more on the human-dependent aspects of change than the technological ones. For full implementation to be effective, support organizations in the work of identifying and implementing needed workflow redesign.

Conclusion: What's at Stake

Providers and patients have the power to improve advanced illness care by talking about and documenting patient preferences through POLST. But some seriously ill or frail patients will not get the care they want unless this information is reliably available when and where medical crises occur. For this to happen, health care entities must enable efficient communication of patient desires to the providers who need immediate access to them.

Widespread electronic exchange of POLST — ideally statewide — offers the most promising solution, but as this pilot project found, technical and other barriers may confound accessibility in a variety of ways. The findings and resulting recommendations provide some clarity and guidance to help states and health care organizations overcome the challenges that impact end-of-life care for so many.

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Appendix: Other Models

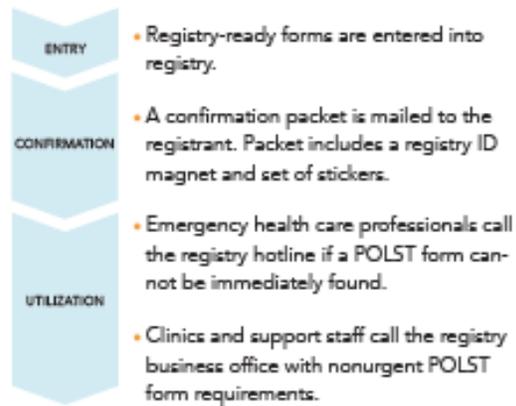## Oregon POLST Registry Operations and Logistics

In 2007, the Oregon legislature passed Senate Bill 329, establishing the Oregon Health Fund Board, which was chartered with developing a comprehensive plan to ensure access to health care for Oregonians, contain health care costs, and address issues of quality in health care. In 2009, the legislature passed House Bill 2009 as part of Oregon's health care reform efforts, enabling Oregon to launch the nation's first 24-hour electronic POLST registry on December 3, 2009. The law creating the registry does not require a patient to have a POLST form. However, when a patient does elect to complete or revise a POLST form, the signing health care professional must submit the form to the registry unless the patient opts out of the registry.

Methods for health care providers or health information management systems to submit POLST forms to the Oregon POLST Registry (OPR) include fax, mail, secure File Transfer Protocol, and ePOLST direct submission.

The registry's data entry team uses the following steps for form entry:

▶ **Validation:** Initial verification that all required elements are present on the form

▶ **Entry:** Patient matching, demographic entry, and recording of medical orders into the database

▶ **Activation:** Last check to verify patient, assess form validity, and check for entry errors before the form goes live in the registry

The overall process includes these steps:

ENTRY
- Registry-ready forms are entered into registry.

CONFIRMATION
- A confirmation packet is mailed to the registrant. Packet includes a registry ID magnet and set of stickers.

UTILIZATION
- Emergency health care professionals call the registry hotline if a POLST form cannot be immediately found.
- Clinics and support staff call the registry business office with nonurgent POLST form requirements.

Registry ID magnets and stickers:

- OPR ID magnets and stickers may be placed in a person's home and in their medical records (example at left).

- The magnet and stickers are used to alert emergency medical professionals and other health care professionals that the patient has a POLST form on file with the registry.

- POLST registry magnets and stickers do not replace the original POLST form.

Incomplete forms:

- Forms that have missing or illegible information, preventing them from being entered in the registry, are faxed back for clarification. These forms are considered Not Registry-Ready, or NRR. For example, this portion of a POLST form shows an illegible signature and a missing date.

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Other reasons for health care providers or health information management systems to notify the OPR:

- A form is updated or a new form is received

- A POLST form is revoked or voided

- A patient is known to be deceased

Nonurgent access to a patient's POLST form is available for health care professionals via fax; in these cases, POLST orders cannot be relayed over the phone.

Health care providers can obtain a copy of a registered POLST by calling the OPR business office and faxing documentation confirming the patient is in that provider's care. Once documentation is received, forms on file are faxed to the provider within one business day.

Continuous Quality Improvement

The OPR partners with the Oregon POLST Program to carry out CQI measures. The registry is responsible for creating a number of reports that can be used for process improvement:

- Annual reports: OPR annual report (all operations metrics); individual institution metrics reports (confidential — for education only); signer metrics reports (confidential — for education only)

- Monthly reports: OPR monthly data report (all operations metrics); high-volume submitters data reports (confidential — for education only)

- Ad hoc: Data reports for research requests; quality audits (confidential — for education only)

Endnotes

1. "Program Designations," National POLST Paradigm, https://polst.org/programs-in-your-state/.

2. Dana M. Zive et al., "Changes Over Time in the Oregon Physician Orders for Life-Sustaining Treatment Registry: A Study of Two Decedent Cohorts," *Journal of Palliative Medicine* 22, no. 5 (May 7, 2019): 500–7, doi:10.1089/jpm.2018.0446.

3. Erik K. Fromme et al., "Association Between Physician Orders for Life-Sustaining Treatment for Scope of Treatment and In-Hospital Death in Oregon," *Journal of the Amer. Geriatrics Society* 62, no. 7 (July 2014): 1246–51, doi:10.1111/jgs.12889.

4. *2018 Oregon POLST Registry Annual Report,* Oregon POLST Registry, n.d., http://www.orpolstregistry.org/oregon-polst-registry/reports/.