



**Aggregate Public Hospital System Annual Report on  
California's 1115 Medicaid Waiver's  
Delivery System Reform Incentive Program  
Demonstration Year 7**

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## I. Introduction

California's Section 1115 Medicaid Demonstration Waiver, entitled "California's Bridge to Reform" (Waiver II-WOO 193/9), was approved by the federal agency, Centers for Medicare & Medicaid Services (CMS), for funding from November 1, 2010, through October 31, 2015.

The timing of Waiver funding is critical, as this five-year, \$10 billion, Waiver allows California's public hospital systems to prepare for the implementation of the Affordable Care Act (ACA), most of which takes effect in January 2014. The opportunity, and challenge, presented by the ACA is this: bring millions more Californians into coverage, and dramatically transform the healthcare delivery system to be more coordinated, efficient, and patient-centered, in order to meet the needs and demands of both newly covered and existing patients.

In order to support this transformation, the *Bridge to Reform* Waiver includes multiple components, including early coverage expansion to more than 500,000 low-income people through California's counties, a mandatory shift of Seniors and Persons with Disabilities from Medi-Cal fee-for-service to Medi-Cal managed care, and an incentive program to improve care delivery and patient health outcomes in 21 designated public hospital systems (DPHs).<sup>1</sup> This report addresses the last component listed, entitled *Delivery System Reform Incentive Program* (DSRIP) and is specific to the second year of the DSRIP, called Demonstration Year (DY) 7.<sup>2</sup> DY 7 covers the period July 1, 2011 – June 30, 2012. Additional information on the DSRIP, and the 21 California Public Hospitals that have the opportunity to receive funds through DSRIP, is provided below.

### A. Overview of the Delivery System Reform Incentive Program

The DSRIP was developed within the framework of what CMS calls the "three-part aim": (1) better care for individuals, (2) better health for populations, and (3) lower growth in expenditures. The purpose of the DSRIP is to support DPHs' efforts to make meaningful improvements in the quality of care and the health of patients they serve. Up until 2010, DPHs had engaged in pilot projects to improve care and help ensure that patients were receiving quality care in the right setting. For example, prior to DSRIP, DPH clinics participated in improvement programs—often through the California Health Care Safety Net Institute (SNI) – to enhance care for patients with chronic conditions, by empanelling patients and providing them with regular, tailored care that would engage them in strategies to manage their conditions and reduce their usage of the emergency department. These early pilot projects, though successful, were not of the scope or scale needed to sufficiently address the imminent demands of health care reform. Therefore, the Waiver Special Terms and Conditions (STCs) specifically charged DPHs to develop five-year DSRIP plans that encompassed their entire system – outpatient, inpatient, primary, and specialty care – and commit to ambitious plans that will dramatically improve the services provided to patients. The plans were to be rooted in evidence-based medicine and in the lessons

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<sup>1</sup> Please see Appendix A for a list of the 21 DPHs in California.

<sup>2</sup> This Demonstration Year (DY) is called DY 7 as Waiver funds build on a previous five-year waiver that covered the time period 2005-2010, and included DYs 1-5. DY 6, a part of this 1115 "Bridge to Reform" was funded from November 2010 – July 2011.

learned about successful ways to improve care in order to make DPHs more efficient, coordinated, and patient-centered.<sup>3</sup>

When approved in 2010, the scope of the DSRIP was unprecedented: if all DPHs meet each of their milestones, they are eligible for a total of \$3.3 billion in federal incentive payments from 2010-2015. Each DPH must commit to providing the non-federal share of those incentive payments, meaning that the DPHs themselves have committed to spend more than \$3 billion in order to participate in the DSRIP.

CAPH member hospital systems<sup>4</sup> were prime for participation in DSRIP because they are the center of the state’s health care safety net, delivering care to more than 2.5 million Californians each year. They deliver 10 million outpatient visits per year and operate more than half of the state’s top-level trauma centers and almost half of the state’s burn centers. They provide almost one third of the care provided to California’s Medi-Cal population and provide nearly half of all hospital care to the state’s seven million uninsured residents. Public hospitals also have large residency and training programs, with forty-three percent of new doctors in the state trained in public hospitals. Once STCs for the DSRIP were approved in 2011, California’s 21 DPHs submitted 17 five-year DSRIP plans<sup>5</sup> outlining their intended strategies for performance improvement to the State of California’s Department of Health Care Services (DHCS) and to CMS. The plans describe in detail each DPH’s commitment to demonstrate significant progress across four categories:

| Category 1                 | Category 2            | Category 3                     | Category 4                  |
|----------------------------|-----------------------|--------------------------------|-----------------------------|
| Infrastructure Development | Innovation & Redesign | Population-Focused Improvement | Urgent Improvements in Care |

Within each of these four broad categories, DSRIP plans require each DPH to commit to multiple, large-scale projects that will transform patient care. On average, public hospital systems are carrying out 15 projects simultaneously, which span all four Categories noted above, with an average of 217 milestones per hospital system over five years. Projects in Categories 1 and 2 focus on planning, process

<sup>3</sup> Please see Waiver II-WOO 193/9, Section V(B)(c), at <http://www.dhcs.ca.gov/provgovpart/Documents/Waiver%20Renewal/CA%20Special%20Terms%20%20Conditions.pdf>.

<sup>4</sup> Designated Public Hospitals (DPHs), as defined under the 2010 Section 1115 Medicaid Waiver, include the 18 CAPH member public hospital and health systems and three University of California Medical Center non-CAPH member hospitals that were not historically Disproportionate Share Hospitals (DSH) (i.e. UC Irvine, UC Davis, and UC San Diego). CAPH’s membership is comprised of 18 public hospitals members eligible for DSH plus Laguna Honda. This includes only those UC medical centers that were historically eligible DSH.

<sup>5</sup> California’s 21 DPHs submitted 17 DSRIP plans, as some were joint plans submitted by more than one DPH. For example, Los Angeles County Department of Health Services submitted one DSRIP plan encompassing Harbor/University of California Los Angeles Medical Center, Olive View/ University of California Medical Center, and Rancho Los Amigos National Rehabilitation Center. Similarly, University of California Los Angeles Medical Center submitted one DSRIP plan encompassing University of California Los Angeles Medical Center – Ronald Regan, and University of California Los Angeles Medical Center – Santa Monica. Throughout this report, language describing 21 DPHs and/or 17 DSRIP plans will be used interchangeably to reflect full participation in DY 7.

improvements and infrastructure building, while projects in Categories 3 and 4 are designed to address population health and outcomes. The DSRIP STCs specify that DPHs should emphasize projects in Categories 1 and 2 in the earlier years of the Waiver program, and Categories 3 and 4 in later years, so that the necessary structures and processes are in place to enable improved care and outcomes. As a result, in DY 6 and DY 7, plans tend to focus on projects that lay the groundwork for important delivery system transformation. In DY 8, 9 & 10, projects are more heavily tilted toward population health and outcomes milestones.

The DSRIP was intentional in setting expectations that individual projects within these four categories are interconnected, and oriented toward integrated care delivery. The STCs state that while “each improvement project is distinct, all of the proposed improvement projects are oriented to creating more integrated, coordinated delivery systems; and being an integrated delivery system allows DPH systems to more fully enact improved patient experience, population health and cost control.”

To support cross-project connections, the STCs specifically require all DSRIP plans to describe how projects are related to and support the work of one another. In particular, for each Category 1 and 2 project, DPHs are required to describe how the project “supports, reinforces, enables, and is related to other projects and interventions within the DPH system plan.”

The DSRIP is structured so that incentive payments are made only after a DPH reports achievement (or partial achievement) of a milestone. To measure ongoing progress, DPHs are required to submit three reports to the State for review each year (two semi-annual reports and one annual report). The reports include submission of data for each milestone, and are accompanied by a narrative description of overall project implementation progress. Together with the quantitative data, the report narratives provide insight regarding approaches taken to test, refine and improve upon specific interventions, as well as lessons learned, barriers that have been encountered, how those barriers have been addressed, and how projects have informed the modification and scaling up of other projects. Also, included in the annual report is a description of the degree to which each project contributed to the advancement of broad system reform, relevant to the patient population that was included in the DPH’s DSRIP plan, and includes a section for highlighting each DPH’s participation in shared learning.

For a list of California’s DPHs, please see Appendix A: California’s 21 Designated Public Hospital Systems.

## **B. Purpose of This Report**

DSRIP protocols require an Aggregate Annual Report documenting progress made across all 21 DPHs, summarizing metric reporting, shared learning activities, outcome data (if applicable) and system-level change supported by the DSRIP.<sup>6</sup> This DSRIP Aggregate Report for DY 7 was written for this purpose. As such, this report is neither an evaluation nor an audit of the DSRIP; rather, it provides aggregate-level information based on the individualized DSRIP reports submitted to the State by the DPHs for the demonstration year, and illustrative examples from individual DPH reports.

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<sup>6</sup> Please see Waiver II-WOO 193/9, Attachment P, Section IV(3), at [http://www.dhcs.ca.gov/Documents/CA\\_3\\_17\\_AttachmentP\\_DSRIP0001.pdf](http://www.dhcs.ca.gov/Documents/CA_3_17_AttachmentP_DSRIP0001.pdf).

In addition to this introductory section, the DSRIP Aggregate Report for DY 7 includes the following sections:

- Section II describes the DPHs' reported aggregate results of progress for DY 7, including milestones accomplished for Categories 1-2, data reporting for some Category 3 measures, as well as baseline data and data reporting for Category 4 interventions
- Section III lists the multiple shared learning and innovation activities reported by the DPHs for DY 7; and
- Section IV draws general conclusions about the progress made toward system reform for DY 7, including conclusions reported by the DPHs.

As outlined above, DSRIP was intentionally designed such that each year of the program would build on work completed in prior years. Therefore, the specific information provided in each Aggregate Annual Report will vary slightly, depending on the specific project work of DPHs during the reporting year. For more detailed information on the DPHs' next steps (i.e., milestones and report content for DYs 8-10), please reference individual five-year DSRIP plans for each DPH.<sup>7</sup> Final results of the DSRIP program, including whether DPHs' initial goals were achieved, will be summarized in the Annual Aggregate Report for DY 10.

### **C. About the California Health Care Safety Net Institute**

The STCs require that, annually, the State must compile reports documenting progress made detailing system change supported by DSRIP, and may retain a non-profit entity with the necessary expertise to do so. The State selected the California Health Care Safety Net Institute (SNI), who is providing the DSRIP Annual Aggregate Report based on SNI's expertise on California public hospital systems' quality improvement efforts, and experience in managing quality data. Established in 1999, SNI supports California's public hospital systems in the development and spread of innovative strategies, and helps DPHs obtain expertise and peer support, thereby enabling them to fully achieve their potential as integrated delivery systems.<sup>8</sup> For example, SNI conducts quality improvement programs with California DPHs specifically aimed at accelerating delivery system transformation in specific areas aligned with DSRIP such as Patient Experience, Patient-Centered Medical Homes, Building Performance Improvement Capacity, Lean, and reducing hospital acquired infections such as CLABSI and Sepsis.

SNI has vast experience working with DPH's quality and efficiency data, including publicly reported data. For purposes of benchmarking, trending and measuring progress toward meeting statewide public hospital system goals in quality improvement, SNI collects public hospital system data on clinical, process and outcome measures.<sup>9</sup> SNI regularly shares this data with public hospital systems and helps them analyze and interpret the data to identify opportunities for improvement.

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<sup>7</sup> Please see <http://www.dhcs.ca.gov/provgovpart/Pages/DSRIP1.aspx>.

<sup>8</sup> For more information, please see <http://www.safetynetinstitute.org>.

<sup>9</sup> Per the Waiver Terms and Conditions, "The State, in collaboration with the participating DPH systems, may retain a non-profit entity with the necessary expertise on California public hospital systems' quality improvement efforts and capacity to manage

## II. Aggregate Results of Progress

### A. Executive Summary

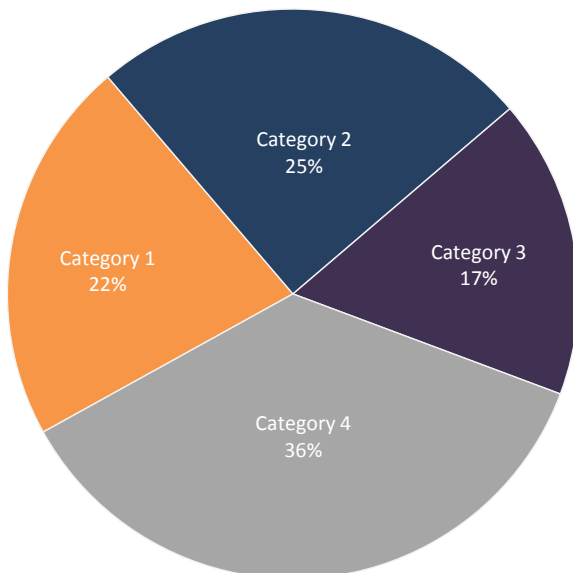
DPH reports submitted in DY 7 of the DSRIP reveal considerable progress toward the defined project goal of enhancing the quality of care and health of patients and families that are served by California’s public hospital systems. Congruent with the original intent of DSRIP, during DY 7 investments were made to prepare staff and systems for change, laying necessary groundwork and building a strong foundation for accelerated progress in years 3-5 of the Waiver. As summarized by one DPH in their annual report, “looking back on DY 7 activities and accomplishments, it has been a year of preparing the ground and sowing seeds, with some early harvesting. There is still much work ahead to cultivate and tend these projects in years 8, 9 and 10; we look forward to realizing major system-level changes by 2015.”<sup>10</sup>

This Aggregate Report summarizes DY 7 progress by DPHs toward defined within each of the four DSRIP Categories, including:

- Category 1: Infrastructure Development
- Category 2: Innovation & Redesign
- Category 3: Population-Focused Improvement; and
- Category 4: Urgent Improvement in Care.

As illustrated in Figure 1 below, work was distributed across all four Categories during DY 7; a change from DY 6 which excluded work in Category 3.

Figure 1: Percentage of DY 7 Milestones per Category



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the data reports to assist in the development and management of the annual DPH aggregate progress report to be submitted to CMS.” (Waiver II-WOO 193/9, Attachment P, Section IV(A)(3), at [http://www.dhcs.ca.gov/Documents/CA\\_3\\_17\\_AttachmentP\\_DSRIP0001.pdf](http://www.dhcs.ca.gov/Documents/CA_3_17_AttachmentP_DSRIP0001.pdf).

<sup>10</sup> Alameda County Medical Center, DY 7 Annual Report. Submitted 10/31/2012.



The deliberate design of DSRIP is to emphasize process-oriented work in the early years of the program, (largely within Categories 1 and 2), with a shift to outcome-oriented (largely Category 3 and 4 work) occurring in later years. The DSRIP is structured to emphasize the inter-relationship among projects within each DPH plan across the categories. For example, 13 DPHs in DY 7 achieved milestones to build, improve and spread medical homes, through empanelling patients with the aid of registries, and restructuring their clinics around the Care Model by bringing high risk patients in for visits before their medical conditions worsen. Many of those projects will be reflected in subsequent demonstration years in Category 3, which tracks progress in diabetes control, and other chronic conditions, for patients who have been seen at least twice in the prior year<sup>11</sup>.

While only 47 percent of milestones in DY 7 reflect Category 1 and 2 projects, it is important to note that many of the Category 3 and 4 milestones in DY 7 are also process-oriented. Many Category 1, 2 and 3 milestones require DPHs to build the capacity to report outcome results to the State. This is an important process step that will facilitate outcomes-improvement in later years. For example, investment in registry implementation in DY 6 and 7 will pay off in spades and is integral to the success of many other related projects. Functional and user friendly registries will foster a culture of data driven improvement leading to improvement in category 3 metrics such as A1c and LDL control and inpatient admissions for diabetics. The registry will be a critical tool for medical homes as they transition to true population management. The registry will also be critical to the achievement of milestones in Expand Chronic Care Management projects. As another example, the Expand Medical Homes projects are multifaceted in nature. Significant time and effort in the early years of DSRIP is devoted to developing new job descriptions, creating new staffing models and ratios, and training staff on health coaching. These efforts will reap benefits in later years as non-provider staff will be skilled and empowered to take responsibility for population management through outreach, in-reach, and health coaching both within and outside the context of the PCP visit. This degree of population management, with the aid of registries and EHRs, is what will drive improvement in the category 3 population health and prevention measures in the latter years of DSRIP.

Separately, but concurrently, almost all DPHs in DY 7 were working to achieve meaningful use of electronic health records. Infrastructure development and optimization of EHRs/EMRs are efforts that are tied to incentive funding through the American Recovery and Reinvestment Act and are separate from the DSRIP itself. Most DPHs are in the beginning stages of Meaningful Use<sup>12</sup>. However, in many cases the adoption of EHRs had a demonstrable impact on DPH's delivery system reform efforts. For example, the University of California San Diego Health System established an electronic process to ensure that patients receive necessary preventive health screenings. Their EHR now contains alerts to providers regarding patients who are due for mammogram and pap smear screening. With the implementation of this electronic process, UCSD is able to promptly and accurately identify abnormal

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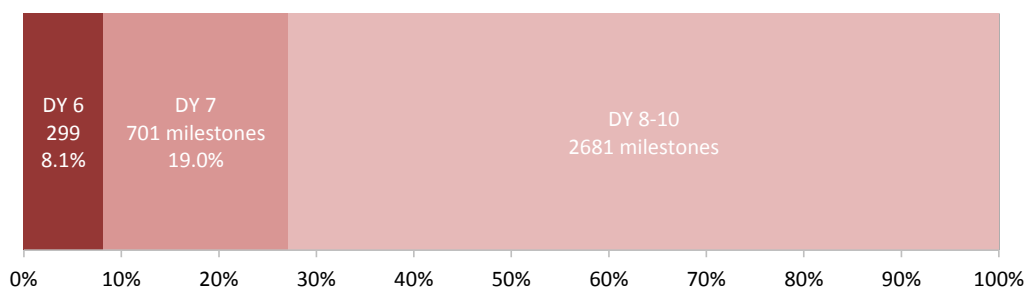
<sup>11</sup> Due to the fact that most DPHs are in the process of implementing electronic health records, it is not possible to track the relationship precisely between the patients seen in primary care medical homes and the data reported in Category 3 at this time.

<sup>12</sup> Please see Appendix D for a listing of inpatient and outpatient EHRs and disease registries in use among CA public hospitals. Please also see section 1.1 of this report for further information on DPH progress on implementing utilizing disease registries.

screening mammograms requiring clinical follow-up. In another example, San Mateo Medical Center (SMMC) has worked to streamline collection of Race Ethnicity and Language (REAL) data through the use of their EMR. Utilizing their EMR to collect this data has allowed SMMC to develop a process to ensure these data fields are not skipped during the registration process, thus providing a comprehensive data set upon which to target specific improvements in care.

In addition to an increase in the number of DSRIP Categories, DY 7 ushered in a significant expansion in the number of projects taken on by DPHs across the State.

**Figure 2: Percent of Total DSRIP Milestones Completed in DY 6 and DY 7**



As illustrated in Figure 2 above, work by DPHs to complete 701 project milestones in DY 7 represents 19% of the total project work that will be completed during the five years of the waiver (a total of 3,681 milestones have been identified for completion). In DY 7, the 21 participating DPHs reported an achievement value of 1 for 97 percent of the 701 milestones that they committed to achieving in their plans in DY 7. The deepened level of engagement by DPHs in DSRIP work for DY 7 is evident; the total amount of project work for DY 7 represents 234% of project work addressed by DPHs during the prior year (DY 6) when only 299 milestones were addressed.<sup>13</sup>

A review of DY 7 Annual Reports indicates that DPHs were successful in laying a strong foundation from which to build during the additional years of the DSRIP. Among many achievements, a sample of aggregate results achieved during the DY 7 reporting year, include:

- A nearly 30,000 increase in the number of primary care encounters provided
- Opening a total of 40 additional exam rooms
- Hiring over 35 additional primary care staff
- Assigning more than 300,000 patients to a medical home and/or primary care provider (PCP)
- Entering over 1 million patients into disease registry information technology (IT) systems

Achieving these results required DPHs to take a disciplined approach to quality improvement. DY 7 reports reveal that a variety of models were used across DPHs to expand and implement improved care processes, and that a primary driver of success was the ability to focus staff efforts on specific goals and objectives. For many systems, developing capacity to effectively use data to determine current performance levels was a critical component of DY 7 work. For others, effort was devoted to producing standard referral guidelines, which support panel management in primary care clinics as well as referrals

<sup>13</sup> Please see Appendix B for a complete listing of projects selected by DPHs, and the number of milestones completed in DY 7.

to specialty care. For DPHs without fully-functional Electronic Health Records (EHRs) or disease registry capabilities, focus was devoted to developing this necessary technology capacity.

There was also evidence of the DSRIP serving as a catalyst for greater cohesiveness across a DPH. One example is Alameda County Medical Center's (ACMC) System Transformation Center (STC), created to improve access and coordination of care across their system. The STC is responsible for ensuring that DSRIP projects and other system transformation projects are coordinated, synergistic, well documented, and spread throughout the organization. By aligning improvement efforts and improving communication across the organization, ACMC anticipates increased efficiency, a reduction in redundancy, and an opportunity to turn the frustration of multiple uncoordinated change efforts into the satisfaction of successful progress towards objectives. In DY 7, the STC was created, staffed and facilitated ACMC's participation in 3 non-mandated statewide learning collaboratives.

In another example, San Francisco General Hospital (SFGH) established a 10 month Quality and Leadership Academy with the goal of increasing the hospital's internal capacity for driving performance improvement and patient safety, as well as to provide on-site leadership development for key hospital staff in a multidisciplinary setting. Teams included in the training were selected based on alignment with Category 4 DSRIP projects and/or the SFGH Strategic Plan. The curriculum of the academy alternated sessions focused on leadership development with those focused on providing useful performance improvement tools.

Further, specific themes emerged across all four DSRIP Categories in DY 7, which reflect deliberate work by DPHs to develop the foundational capacity and operating systems necessary to support the level of delivery system transformation work outlined by the DSRIP. These include:

- Creating the necessary infrastructure to collect performance data and guide improvement efforts
- Analyzing data to focus and guide performance improvement work
- Clearly defining staff roles and responsibilities
- Adding staff and/or re-designing existing roles when necessary
- Conducting necessary staff training
- Standardizing (processes, protocols, workflows, checklists, order sets, alerts, etc.) when possible to ensure consistent, high-quality performance from all staff members, all of the time
- Identifying cross-project connections, using information gathered in one project area to inform work in another

In addition to the outcomes noted above, DPHs made a significant investment in shared learning activities during DY 7, by participating in educational and collaborative sessions designed to accelerate the rate of improvement while adding discipline and focus to DSRIP project work.

Viewed as a whole it is clear that the 701 DSRIP milestones completed through DY 7 lay a meaningful foundation that will support DPHs in providing patients with "the right care, at the right time, and in the

right setting<sup>14</sup>”, by expanding access to care, enhancing quality, improving population health, and containing costs.

Further details on DY 7 progress, organized by Category, are provided below.

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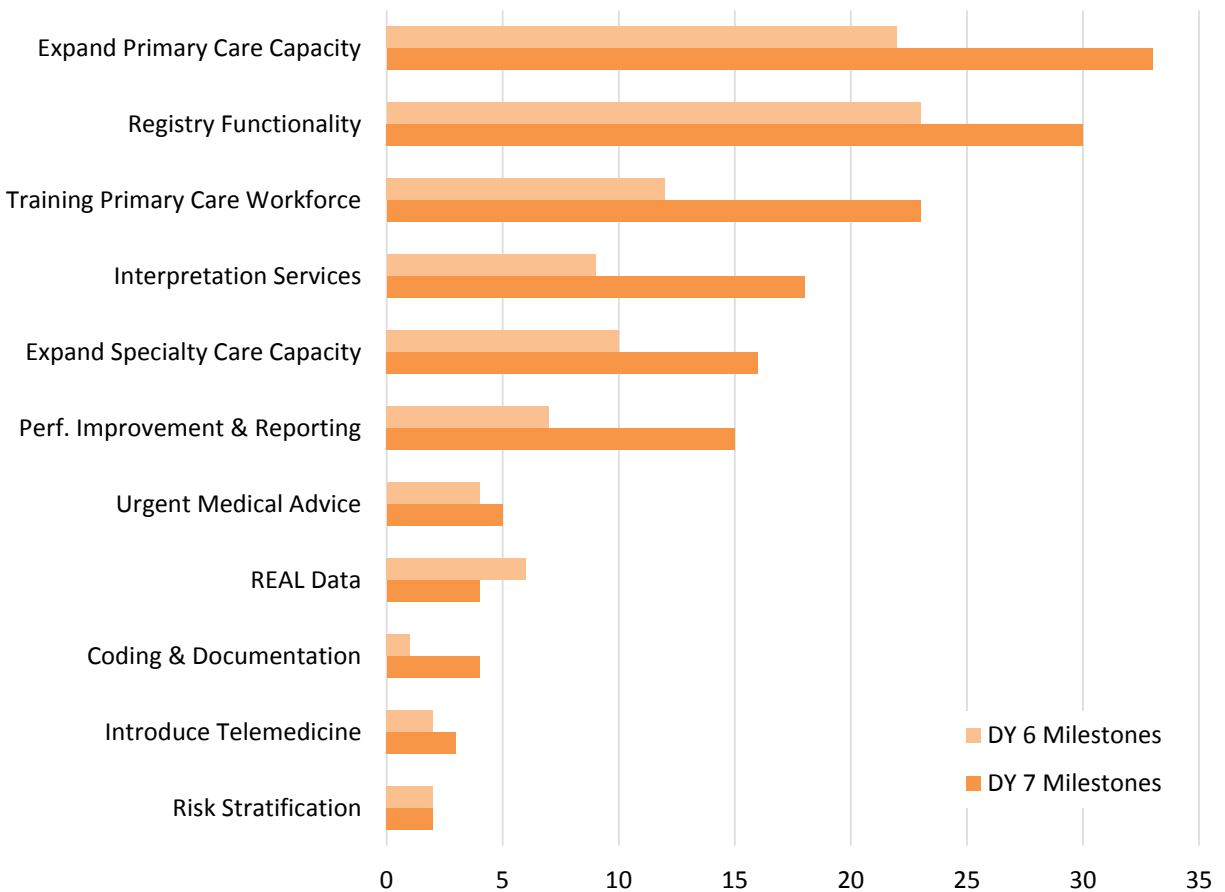
<sup>14</sup> Riverside County Regional Medical Center, DY 7 Annual Report. Submitted 10/31/2012.

## B. Category 1: Infrastructure Development

Per the Waiver Terms and Conditions, the purpose of Category 1: Infrastructure Development is to make “investments in technology, tools and human resources that will strengthen the organization’s ability to serve its population and continuously improve its services.” Achievements of milestones in this category are foundational to the success of Categories 2-4.<sup>15</sup>

As in DY 6, Category 1 work accomplished in DY 7 included investment in people, places, processes and technology. The number of Category 1 milestones completed in DY 7 reflect a considerable increase in focus by DPHs on capacity expansion (both in primary and specialty care, as well as performance improvement and reporting), patient-centered care (e.g., focus on creating disease registry functionality and delivering culturally competent care), and staff training. A comparison of DY 6 and DY 7 milestones completed within each Category 1 project follows.

Figure 3: Number of Milestones Completed by Project in Category 1



A review of Category 1 progress in DY 7 reveals that DPHs are making significant investments to expand capacity in order to provide care for patients in the most appropriate setting, and in a way that

<sup>15</sup> Please see Waiver II-WOO 193/9, Attachment Q: Categories 1-2, at <http://www.dhcs.ca.gov/Documents/Attachment%20Q.pdf>.

addresses the unique needs of each patient. In DY 7 DPHs demonstrated the ability to expand capacity (both physical and human) across a number of projects by identifying efficiencies (e.g., streamlined patient registration and triage), using alternative methods to deliver care (e.g., via secure message or phone visit), and by ensuring that patients receive the right kind of care, the first time (e.g., use of a nurse advice line to direct patients to the most appropriate care setting).

Specific steps taken by DPHs to deliver these results in DY 7 included:

- Creating the infrastructure necessary to collect performance data and guide improvement (e.g., implementation of an ambulatory Electronic Medical Record)
- Hiring new staff and/or providers, and re-defining roles for existing staff and providers (e.g., increasing the number of residents in training programs and hiring performance improvement staff; re-defining existing staff roles to include specific expectations re: empaneling patients, populating and managing disease registries, and engaging directly with patients)
- Redesigning workflows to create standardization (e.g., standard ordering of tests and monitoring of process compliance to raise awareness and knowledge of chronic diseases, and increase documentation compliance)
- Focused staff training efforts (e.g., training staff on new guidelines for specialty referral)

Category 1 findings by project are summarized below.

### 1.1 Implement and Utilize Disease Management Registry Functionality

The purpose of this project is to implement and utilize disease registries that support patient population health, panel management and coordination of care.

Fourteen DPHs (eleven systems) completed 30 milestones related to implementing/utilizing disease management registry functionality:

1. Alameda County Medical Center (ACMC)
2. Arrowhead Regional Medical Center (ARMC)
3. Kern Medical Center (KMC)
4. Los Angeles Department of Health Services (LADHS)
5. Riverside County Regional Medical Center (RCRMC)
6. Santa Clara Valley Medical Center (SCVMC)
7. San Joaquin General Hospital (SJGH)
8. University of California Davis Medical Center (UCD)
9. University of California Irvine Medical Center (UCI)
10. University of California San Diego Health System (UCSD)
11. University of California San Francisco Medical System (UCSF)

#### DY 7 Milestones Accomplished:

- ✓ Review and select a registry
- ✓ Plan development of a tethered registry
- ✓ Hire information specialists to develop and implement reporting capabilities of registry and integrate it with EHR/data sources
- ✓ Implement and staff cross-functional team to develop and operate registry program
- ✓ Implement/expand a functional disease registry
- ✓ Demonstrate automated reporting ability at point-of-care and for population health
- ✓ Conduct staff training on populating and using the registry
- ✓ Hire panel managers
- ✓ Enter patients into the registry
- ✓ Implement a system to accommodate newly diagnosed chronic disease management patients in at least one primary care clinic
- ✓ Design patient experience report to survey patients receiving chronic disease management
- ✓ Create/disseminate protocols for registry-driven reminders for clinicians

#### Metrics referenced in the DY 7 reports as potential indicators of improvement include:

- Number/percentage of staff trained
- Number of patients entered into registry
- Number of panel managers hired
- Number of primary care sites with functional disease registry

#### Progress and Impact:

### *Registry implementation*

The implementation and utilization of a functional disease registry by front-line clinic teams is a foundational piece of the patient centered medical home. Without a robust registry (or EHR with adequate population health functionality) that is user-friendly, population management is not possible. Hence, it is understandable that many DPHs have used the opportunity afforded through DSRIP to focus their efforts on registries. In aggregate, over 1 million patients were entered into registries across all DPHs working on this project, and nearly 400 staff were trained to use registries, demonstrating the great progress made in DY 7.

As noted by SJGH, implementation of registries required the alignment of multiple stakeholders from Health Information Technology (HIT), clinic administration, and clinic staff. The technical challenges were significant due to the necessity of integrating with many complex data sources. Through this process, several DPHs have realized that the registries they had planned to upgrade or spread are inadequate and have decided to move forward with entirely new registries. Both LADHS and KMC have decided to abandon their home-grown registries and implement i2iTracks. SCVMC has decided to forego implementing a new registry and instead make modifications to its current registry until their EHR, with newly developed chronic disease and wellness registries, is implemented.

Other DPHs, like ARMC and UCSF, have been challenged by the technical difficulty of essentially rebuilding their registry or building customized clinical registries into their newly implemented EHR. In the case of UCSF, they discovered that the registry/application product that came with their EHR was not adequate for their use and required significant rework. Several DPHs noted they have been challenged by the dearth of technical talent in the general workforce with expertise in building and testing registries. As a result, it has taken longer to hire staff with this necessary expertise to move forward. UCSF noted that one of its key success factors was communicating with other University Medical Centers who have implemented the same EHR. From them, UCSF learned the following key steps to overcoming their barriers:

- Dedicated report writers and application build team
- Strong alliance with providers and staff to test and refine the build logic
- Leveraging other capabilities within EPIC/Apex to build a data mart in the Clarity database to run automatic performance reports

It was clear from all DY7 reports that HIT support is critical to the advancement of their registry projects. In order for DPHs to meet subsequent milestones for this project, the registry will need to remain a top priority for HIT support.

### *Data Validation*

Data validation is a time-consuming, yet critical step between registry implementation and utilization. If clinicians and staff do not trust the accuracy of the data then it can deter progress, rather than motivate them. SCVMC is systematically validating both intra-system and inter-system data, comparing results both in their registry and with other systems like their inpatient data system. Because of this validation effort, they learned that prior to April 2012 about 10% of diabetics were not identified in their registry.



Additionally in DY7, they developed a MOU between SCVMC Laboratory, Ambulatory Care, and HHS-Information services to facilitate flow of all lab data to the registry. By increasing the data quality and improving trust, they are able to expand and improve their registry reporting. RCRMC has devoted additional staff resources to manually updating and validating (via audits) the data in their registry. Given that the manual data entry is very challenging and resource-intensive, their future plans include the purchase of i2iTracks. ACMC has also found that the process of reviewing patient records and validating the diabetes diagnosis is time-consuming and is the reason for their partial achievement on this milestone.

### *Training*

Training and/or the development of related protocols was a milestone for almost all DPHs participating in this project. During DY7, ACMC trained 82% of providers and staff at all ACMC primary care clinics in the use and principles of their disease management registry, which included training in the chronic care model and panel management. Their training also involved special panel management training for their internal medicine residents, which was funded in part by a Bureau of Health Professions Primary Care Training and Enhancement Grant. Using their own internal staff, DPHs have conducted trainings that require participants to demonstrate competency. RCRMC has even made demonstrated competency on the use of the registry part of the employee annual evaluation.

Some DPHs went beyond their stated milestone targets for entering patients with specific diseases into the registry. ARMC's original milestone was to enroll at least 400 diabetic patients into the registry. As they moved forward with their work on expanding medical homes, they decided to enroll all patients with two or more visits to their assigned Family Health Center into the health maintenance registry; those with diabetes were included in the diabetes portion of the health registry. Similarly, LADHS' original milestone was to enter at least 55% of patient with diabetes, heart failure or asthma (seen in the clinics with registry access) into the registry. As they moved forward with the establishment of medical home panels, LADHS made a policy decision to enroll all empanelled patients into its disease management registry to facilitate panel management. Patients are entered into the registry automatically, often even prior to the patient visit, as a by-product of the empanelment and data flow process. As a result, in DY7, a total of 5,389 of 5,510 (97.8%) empanelled patients with diabetes, heart failure or asthma seen in clinics with registry access were entered in LADHS' registry.

### *Utilization of disease management registries to improve population health*

Many DPHs reported on the utilization of the disease management registries to improve population health. SJGH used the registry tool for outreach efforts focused on their diabetic patients. Clinic staff identified all diabetic patients in need of foot exams. Staff from their Panel Management and Specialty Referrals Department contacted patients to schedule the service and over 300 foot exams were completed within 7 days. UCD uses the registry as a tool for their Chronic Disease Management (CDM) and Education Program, which was expanded to the Elk Grove Primary Care Network site in DY7. Their CDM provides support for patients with diabetes, congestive heart failure and depression. Once a patient is enrolled in the program, he/she is assessed for readiness, an action plan, and a self-management goal. The outcomes of the session (i.e. care plan and intervention) are documented for the PCP. The CDM team co-manages the patient with the PCP and provides resources for both patients

and providers. CDM has created a website in response to physician requests for guideline-based chronic disease care that supports patient self-management.

Other DPHs also used the registry and its reports to enhance the evidence-based practice of providers. Through its Diabetes Summit Team, UCI developed and implemented protocols for ambulatory care patients with diabetes. Reports from the diabetes registry were analyzed and used to determine the best methodology for implementation of the care protocol in primary care clinics where registry patients are seen. Paper tools were created to facilitate implementation of the care protocols until electronic EHR methods could be made available in all primary care areas. Translating the flowsheet protocol into the EHR was a challenge from the perspective of reconciling functional capabilities of the EHR system with the needs of clinicians making care decisions during patient visits. Custom programming will be required to provide cohesive, comprehensive views of patient information to facilitate clinical decision-making and protocol adherence. As a result of work in DY7, UCSD's EHR contains provider alerts for patients that are due for mammography. Additionally, UCSD now has electronic processes in place to correctly identify 100% of mammograms and pap smears that require additional follow-up.

#### *Challenges and Lessons Learned*

Achievements in this area did not come about without several challenges. The expansion to UCD's Elk Grove clinic was challenging, as it required building infrastructure, which taxed financial and human resources. Some members of the Elk Grove clinic were skeptical and needed time for to build trust in the process. Engaging and educating PCPs on the concepts of the PCMH, the redesign of current models of care, and emphasizing the role of the CDM Education and Care Programs took time but eventually received support from providers and leadership through education and reports highlighting the positive outcome data.

Similarly, APMC noted initial skepticism from providers when implementing their panel management program across all four of its adult medicine primary care sites. A multidisciplinary steering committee developed protocols and guidelines for the panel management program. Products included:

- Panel management protocol which includes diabetes, hypertension, pap tests, mammograms, pneumococcal and influenza vaccines; two providers at each clinic piloted the protocol
- Telephone scripts, health education materials and process flow diagrams
- Chart audit to collect baseline data
- Program goals and program brochures
- Process for "scrubbing" provider panels

Despite initial skepticism from some providers, once the panel management program launched, the panel management team received numerous requests from other providers to participate in the in-reach process (where care gaps for patients coming in are identified by panel management program and addressed by the provider). Providers' ideas and feedback have been incorporated into the program and engaged providers serve as program ambassadors for other providers not yet participating in the program.

## 1.2 Expand Primary Care Capacity

The purpose of this project is to support expanded capacity of primary care clinics so that more care can be provided in the primary care setting. This expansion is designed to connect patients to a consistent primary care team, who will proactively provide patients with more preventive, primary and chronic care.

Eleven DPHs completed a total of 33 milestones related to expanding primary care capacity:

1. Alameda County Medical Center (ACMC)
2. Arrowhead Regional Medical Center (ARMC)
3. Contra Costa Regional Medical Center (CCRMC)
4. Kern Medical Center (KMC)
5. Riverside County Regional Medical Center (RCRMC)
6. Santa Clara Valley Medical Center (SCVMC)
7. San Francisco General Hospital (SFGH)
8. San Joaquin General Hospital (SJGH)
9. San Mateo Medical Center (SMMC)
10. University of California Irvine Healthcare (UCI)
11. University of California San Francisco Medical Center (UCSF)

### DY 7 Milestones Accomplished:

- ✓ Added physical primary care space (e.g., additional exam rooms, sites and/or services, community/school-based clinic sites) or expanded existing primary care space
- ✓ Extended primary care service hours (e.g., adding evening and weekend hours)
- ✓ Expanded primary care encounters
- ✓ Added primary care staff (e.g., nurse practitioners)
- ✓ Collected baseline data for “Third Next-Available Appointment” and established improvement targets for DY 8, 9, and 10
- ✓ Implemented a nurse triage system
- ✓ Implement a mobile health clinic to increase community access to primary care

### Metrics referenced in the DY 7 reports as potential indicators of improvement:

- The number of primary care patients (i.e., volume increases)
- The number of patients assigned to the clinic for ongoing primary care services
- The number of primary care hours per week
- The number of days from when a patient calls in to schedule an appointment and when an appointment is available, measured by the days to the third next available appointment
- The number of new patients

### Progress and Impact:

In DY 7, DPHs took a dual approach to expanding primary care capacity: expansion of physical space and personnel, and use of innovative strategies to care for more patients with existing space and personnel.

In aggregate, through multiple improvement efforts, DPHs increased primary care access by nearly 30,000 encounters relative to each DPH's respective baseline.

#### *Expanded Physical and Staff Capacity*

To accomplish this significant gain, several DPHs undertook planning, construction or opening of new primary care clinics, in addition to expanding existing clinic space. In DY 7, across DPHs working on this project, a total of 40 additional exam rooms were opened, with 2 new clinics opened and plans underway for 2 more in future DYs. At CCRMC, construction has begun at a new replacement health center, the West County Health Center. The facility is open and full operations commenced in October 2012, just after the close of DY 7. At ARMC, a new primary care clinic with eight exam rooms, and several areas for ancillary services, was opened, resulting in 1,387 new patients being assigned to the new clinic. At ACMC, an existing clinic, Newark Health Center, was renovated, increasing the number of exam rooms by 60%. At RCRMC, expansion efforts doubled the size of the Family Care Clinic, resulting in nearly 25% more clinic visits per month.

In addition to expanding physical space for primary care, DPHs increased primary care capacity by extending clinical hours. Across DPHs, a total of 55 additional primary care clinic hours per week were added in DY 7. In many cases, this meant hiring additional PCPs and support staff to cover the expanded operating hours at clinics. In aggregate, DPHs working on this project hired over 35 additional primary care staff, including 15 primary care physicians. At SJGH an additional PCP was hired, and at the UCI, an additional geriatrician was hired to care for patients in the Senior Center, and a team-based model of care was implemented. CCRMC took an innovative approach to increasing clinic capacity. Recognizing that increases in the number of part time providers was contributing to challenges in continuity and access, CCRMC offered monetary incentives to PCPs who increased their primary care clinic hours. During DY 7, 18 providers increased their clinic hours, resulting in additional evening and weekend clinics in the Ambulatory Care Centers. At ARMC, the Patient Centered Medical Home (a Category 2 project) model was a main driver of the approach to hire additional primary care staff. In addition to hiring two additional PCPs, along with support staff, ARMC added new job duties to non-physician staff that allowed the clinic to simultaneously expand Primary Care Capacity. Those duties included supporting empanelment efforts, populating and managing the disease registry and becoming more engaged with patients, thereby taking a leading role in the overall improvement in population health outcomes. In expanding job roles of the members of the care team, ARMC seeks to increase capacity by freeing clinicians of many tasks that can be sufficiently handled by other members of the care team, thereby increasing their capacity to care for more patients.

#### *Data-Driven Improvement Efforts*

DPHs also examined their internal processes to identify areas for improvement that would lead to increased primary care capacity. In many cases, the opening of new clinics, or expansion of existing clinics and clinic hours, was optimized through parallel improvement initiatives to redesign processes to increase efficiency thereby increasing access. For example, at ACMC several productivity initiatives also aim to improve access, including: the implementation of an ambulatory (EHR), patient visit re-design, and LEAN process improvement. Specific activities to expand primary care capacity included review and

modification of provider schedules, streamlined registration, streamlined triage, increased support staff, and workflow optimization of providers and medical assistant staff. These efforts are aimed to ensure that primary care operations are as seamless and efficient as possible, thereby allowing the clinic to function at full capacity by reducing no-show rates, and maximizing the use of available resources. CCRMC collected baseline data related to “Third Next Available Appointment” (TNAA) and established improvement targets to be met in DY 8, 9, and 10. At SMMC, a team-based model was used to maintain open access scheduling. This means that a certain percentage of appointments are consistently available at the beginning of the day, providing patients with access for urgent care appointments while still meeting the chronic disease and preventive health needs for other appointments. In another example, SCVMC, through the Office of Panel Management, has done analysis to identify panel capacity at primary care sites, given current demand. The Office of Panel Management has reviewed the monthly panel capacity of each primary care physician and used the information to open and close panels as appropriate. This process ensures that patients empanelled to a provider will be able to access the provider when an appointment is needed. Additionally, through testing various models, SCVMC adopted a tool for complexity scoring of paneled patients, in order to ensure that provider panels are fair and equitable. In another example, KMC worked to increase the number of urgent appointments available to patients by revamping clinic schedules to allow for a set amount of same-day appointments in all clinics, and dedicated at least one provider to same-day appointments each day of the week. To achieve this, KMC also implemented nurse triage software to schedule appointments based on acuity.

#### *Other Strategies to Increase Access*

In a different approach to increase primary care capacity, RCRMC implemented a mobile health clinic to increase the community’s access to primary care across a very large geographical area. A health care team, comprised of a nurse practitioner, pharmacist, licensed vocational nurse and support staff, work under the supervision of a family medicine physician. The team provides medical examinations, immunizations, and other primary care services to individuals and families.

Another example involves implementation of nurse advice telephone lines as a strategy to encourage appropriate use of limited resources, thereby expanding access to primary care for patients who truly need it. ACMC submitted a business plan to implement a 24/7 Nurse Advice Line for all primary care clinics in DY 7. Similarly, KMC signed a vendor contract to provide the service and held a 3-day training session on triage and system workflows. Effective triage by the nurse advice service now allows KMC to address some patient concerns over the phone, creating capacity for urgent care appointments within primary care for those who need it most.

#### *Connection to Patient Centered Medical Homes*

As one DPH noted, in addition to increasing primary care capacity, DPHs are looking to transform primary care clinics into medical homes, a project that is described more fully in Category 2.1: Expand Medical Homes. At SFGH, to facilitate the innovation and transformation of primary clinics into Patient Centered Medical Homes (PCMH), efforts are underway to manage enrollment and assign patients to a PCMH through population outreach and in-reach. This has resulted in moving away from strict visit-based care and relying more on both population management via registry use and piloting telephone

and group visits. In doing so, more patients will be able to access primary care services and care via these innovations, allowing the clinic to increase its capacity to accommodate other patients with visit-based care. By increasing primary care capacity and connecting patients to medical homes, DPHs are preparing their systems to be providers of choice under healthcare reform.

#### *Challenges and Lessons Learned*

In one example where a DPH did not meet its milestone to increase patient encounters, other improvement opportunities were identified. At UCSF, efforts to increase patient encounters by 2,500 visits was not achieved. One barrier identified was the implementation of an ambulatory (EHR) in the primary care clinics. Consistent with the experience of other health systems nationally, during initial implementation of the EHR UCSF experienced a significant reduction in provider productivity/capacity so that the DSRIP goal could not be met, despite adding new physicians to primary care practices. However, UCSF noted the potential for the EHR to improve access through virtual, rather than-in person, encounters. During DY 7, patients used this system to request medical advice from PCPs and received timely responses on more than 28,000 occasions. The electronic exchanges represent encounters with PCPs, many of which would previously have required a visit, thereby burdening primary care capacity. In an approach to refine the work they have done, UCSF is in the process of analyzing and quantifying the visits that occur between patients and providers in the electronic environment and will determine how many of these exchanges would have otherwise resulted in a patient coming in to the office. This will allow UCSF to leverage their EHR investment in ways that maximize provider capacity and productivity.

### 1.3 Increase Training of Primary Care Workforce

The purpose of this project is to leverage DPHs' major statewide role in training new physicians and other providers, in order to help alleviate the primary care shortage as well as ensure that primary care training models are updated to include more innovative models of delivering care so that patients can receive more, and more organized, primary care. California's Public hospital systems train 43% of the physicians in the state, thus playing a major role in clinical education<sup>16</sup>.

Nine DPHs (eight systems) completed a total of 23 milestones related to increasing the training of the primary care workforce:

1. Arrowhead Regional Medical Center (ARMC)
2. Contra Costa Regional Medical Center (CCRMC)
3. Natividad Medical Center (NMC)
4. Riverside County Regional Medical Center (RCRMC)
5. San Francisco General Hospital (SFGH)
6. University of California Irvine Healthcare (UCI)
7. University of Los Angeles Medical Center (UCLA)
8. Ventura County Medical Center (VCMC)

#### DY 7 Milestones Accomplished:

- ✓ Hired additional precepting primary care faculty
- ✓ Expanded primary care exposure for residents
- ✓ Increased primary care training programs, and the number of primary care trainees
- ✓ Increased the number of primary care residents
- ✓ Developed and implemented a curriculum for residents to utilize practice data and demonstrate skills in quality assessment and improvement
- ✓ Hired and trained diabetes coaches

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- The number of primary care residents/trainees per class
- The number of primary care preceptors/faculty
- The number of scheduled clinic visits seen by primary care residents

#### Progress and Impact:

##### *Training Program Expansion*

Several DPHs made strides in increasing the primary care workforce through the expansion of residency and other training programs, building on work completed in DY 6. In DY 7, after receiving approval from the appropriate national accreditation organizations, DPHs hired residents to fill those additional positions. DPHs participating in this project report a total of 11 additional residents hired in DY 7,

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<sup>16</sup> For more information, please see <https://www.caph.org/content/FastFacts.htm>

accompanied by 5 physician preceptors. These additional positions were supplemented by an additional 21 primary care support positions, created to ensure that the additional residents are appropriately resourced and supervised. For example, at RCRMC, two additional primary care residents were hired, and an additional four were hired at SFGH. Targeting the non-physician population, NMC, completed a memorandum of understanding with Stanford University Physician Assistant Program for NMC to serve as the training site for Physician Assistant students.

As evidence of early progress, the increase in residents is already impacting primary care capacity. At CCRMC, two additional resident rotations were added to the Primary Care Continuity Clinics, resulting in 2,534 additional clinic visits in diverse/low-income community-based settings.

#### *Exposing Medical Residents to Enhanced Primary Care Models*

In DY 7, many DPHs worked to expose residents to primary care, and in many cases to the principles of the Patient Centered Medical Home (PCMH). At ARMC, the Family Medicine Director implemented a PCMH curriculum, a required training series for all Family Medicine Residents. Through the curriculum, residents learn about the comprehensive concepts of PCMH, such as empanelment, team based care, enhanced access, improved preventive services and evidenced based care, as well as the chronic care model. In another example, at SFGH, a Quality Improvement and Leadership curriculum was developed for residents in Primary Care, Internal Medicine, and Family and Community Medicine, engaging residents with both didactic and experimental components. In DY 7, two new components were added to the training; one focused on ambulatory safety as well as a systems leadership component. In DY 7, UCI focused its primary care workforce training efforts on a new approach designed to manage patients with chronic disease through a team-based setting in primary care. To support this new model, UCI hired a doctor of osteopathy and a nurse practitioner to write a curriculum and create protocols for multi-disciplinary primary care teams. The efforts of this team have yielded several disease-specific clinical workflows and protocols across multiple diseases categories.



## 1.4 Enhance Performance Improvement and Reporting Capacity

The purpose of this project is to expand quality improvement capacity through people, processes and technology so that the resources are in place to conduct, report, drive and measure quality improvement.

Eight DPHs (five systems) completed 15 milestones related to enhancing their performance improvement and reporting capacity:

1. Alameda County Medical Center (ACMC)
2. Los Angeles Department of Health Services (LADHS)
3. San Francisco General Hospital (SFGH)
4. University of California San Francisco Medical Center (UCSF)
5. Ventura County Medical Center (VCMC)

### DY 7 Milestones Accomplished:

#### ACMC

- ✓ Complete and sign a services contract to implement three-year Lean Six Sigma training initiative at ACMC
- ✓ By mid-year, establish the System Transformation Center: hire staff, establish job duties, set oversight and reporting structures, and develop a four-year workplan
- ✓ By year's end, System Transformation Center facilitates (via research, grant writing, and coaching) ACMC's participation in at least three non-mandated statewide, public hospital or national clinical databases or learning collaborative

#### LADHS

- ✓ Quality dashboard or scorecard to be shared with organizational leadership on a regular basis that includes patient satisfaction measures
- ✓ Participate in CHART or other statewide, public hospital or national clinical database for standardized data sharing

#### SFGH

- ✓ Develop a plan for a Quality Data Management Center that focuses on improving processes and environmental changes to enhance coding and documentation of diagnoses, procedures, and process and outcome measures
- ✓ Establish a program for trained experts on process improvements to mentor and train other staff for safety and quality care improvement
- ✓ Train at least 50 staff on Culture of Excellence and identify consultants for Culture of Excellence curriculum
- ✓ Renovate and equip space for Training Center

## UCSF

- ✓ Implement quality improvement data systems, collection and reporting capabilities
- ✓ Hire/train 2 staff in well proven quality and efficiency improvement principles, tools and processes

## VCMC

- ✓ Designate a physician who is dedicated to the PI department to engage the medical staff in the PI process
- ✓ Development of a quality dashboard that allows real time improvement reporting of the Core Measures selected process improvement
- ✓ Perform four Lean Kaizen rapid PI events, with at least one Kaizen focusing on a Core Measure related to care in the hospital

## Progress and Impact:

### *Identify a Unifying System for Change*

The eight DPHs that undertook this project established critical infrastructure components to build and enhance performance improvement and reporting capacity. These included widespread adoption of a unifying performance improvement approach such as Lean Six Sigma, hiring performance improvement staff and establishing departments to oversee performance improvement and associated activities (e.g., performance improvement training, implementation of data management systems, expanding use of quality dashboards and public reporting initiatives, participation in multiple quality improvement learning collaboratives, and conducting rapid improvement events).

Many DPHs have recognized that the multiple system-wide initiatives can lead to "change fatigue" among staff and conflict between change efforts as many priorities compete for attention and finite resources. In order to address this challenge, APMC has established the Systems Transformation Center. Currently ramping-up, the STC is designed to serve as a centralized clearinghouse for all APMC change initiatives and set formal priorities for resource allocation. It will also help promote synergy among change initiatives. APMC is currently developing a four-year work plan for the STC while it conducts a search for the STC Executive Director.

### *Training & Implementing Rapid-Cycle Improvement Events*

Nearly 30 rapid improvement events were completed across the three DPHs undertaking this project, resulting in early, important improvements in care. For example, SFGH's Sepsis Team participated in the DPH's new training on Culture of Excellence provided at its recently launched Learning Center and, through that work, was able to show improvement in sepsis bundle compliance from 20% to 42%. SFGH also initiated Service Excellence trainings began in the new Learning Center space in June 2012, with the vision of creating an environment where patients and staff are always valued and respected. In DY7 there were 100 sessions for front line staff and leadership. The training sessions reached 3,379 staff and 340 managers from SFGH as well as from the DPH community clinics and other partner organizations.

As one of its six rapid improvement events completed in DY7, VCMC charged its multi-disciplinary Diabetes Management Team to apply Lean to standardize and improve diabetes care. Through a series of rapid-cycle improvements, this team was able to standardize the ordering and monitoring of infusions, increase documentation compliance, and raise the awareness and knowledge of diabetes and insulin, all while decreasing the time to blood glucose goals and keeping the incidence of hypoglycemia to below national rates.

ACMC's Lean implementation provides a good illustration of how embracing a unifying approach to performance improvement can work in the public hospital system environment. ACMC Kaizen events involve key stakeholders, including those who do the work and those who are affected by it: medical staff, registration clerks, pharmacists, nurses, social workers, patients and family members. ACMC has had patient representation at most events; for example, three representatives from the Patient Advisory Council have participated. A procedure has been developed so that after each Kaizen event, each attendee receives a one-on-one check-in to see if they have questions about what they learned and to make sure they are clear on their responsibilities and what comes next.

For example, in one Kaizen focused on inpatient flow, the participants reviewed the critical pathway to move patients toward discharge. The group designed a checklist that included the key areas of financial counseling, nursing, physicians and social services; the checklist was intended to move with the patient through the system and support early discharge planning. When the new process was monitored, it was found that the form was being used by just one department: financial services. Following further discussion and problem-solving, it was determined that the discharge form was not a useful intervention. Through the process of collaboratively developing and testing the checklist, better workflows were clarified. The checklist was then used to ensure that the many steps identified by the team are part of the new EHR workflows. Staff will be better prepared to implement the EHR and the workflows when their new EHR is launched, currently scheduled for February 2013.

A 10-month Quality and Leadership Academy, providing training for 45 hospital staff, was initiated in at SFGH in October 2011 with a goal of increasing the hospital's internal capacity for driving performance improvement and patient safety, as well as to provide on-site leadership development for key hospital staff in a multidisciplinary setting. The aim of the program was to achieve clinical & operational quality improvements across five domains (aligned with DSRIP and SFGH's strategic plan) by December 2012. In an effort to sustain this project and spread learning to additional teams, the 2nd cohort of the academy will begin in November 2012.

*Data-Driven Improvement* In developing its quality data management system, UCSF engaged physicians and staff in implementing the prospective data collection for their sepsis program. On a daily basis a UCSF a quality analyst collects data on the patients that screen positive for sepsis, then evaluates whether the patient received the sepsis bundle elements, if warranted. These cases are then sent to the physician champions who engage with nursing and physician staff to use the data as a team to improve the care and to contribute to ongoing and needs and changes for the reported data. This prospective data collection methodology has been invaluable in the analysis as to whether UCSF needs to either improve education and training, or to refine processes to meet the goals of sepsis care. UCSF is working

over the next year to write the needed reports in their new EHR (EPIC/Apex) to automatically generate data and reports and bypass the manual extraction and analysis process currently used during the transition from their legacy system to new EHR.

#### *Focus on Sustainable Change*

Several strategies are planned by DPHs to ensure that Lean, and other performance improvement methods, have a long-lasting effect on the system. Basic Lean concepts will be added to the annual competencies for staff. For example, at ACMC the Kaizen Promotion Office (KPO) is developing a website for participants to be able to easily access tools and educational materials. Each event ends with a report-out, and all ACMC leaders are invited to attend in order to learn about and support the improved processes developed by that team.

SFGH's Service Excellence trainings are being incorporated into the regular staff training curricula, and staff and managers are supported to use what they learned in the training as SFGH rolls out its Service Excellence plan. In the coming year, the Service Excellence Commission and Department of Education and training will be responsible for supporting department managers as they implement the service excellence plan that was incorporated into the trainings. The plan is based on seven basic standards of service excellence and relies on the management team to train and engage staff, as well as monitor adoption of the standards. This involves providing managers with a tool kit for use in staff meetings, creating messaging strategies (screen savers, posters, phone messages), and video vignettes of patient feedback with a focus on compliments.

As a result of a successful Lean rapid cycle improvement event, VCMC now has a well-developed Diabetes Management Program. Nursing and physician staff receive extensive education regarding inpatient diabetes management, focusing on the consistent use of standardized insulin order sets and the rationale behind their use. Real-time audits of the use of insulin in the two hospitals are carried out daily and feedback was given to the practitioners. Monitoring activities are evaluated by the committee regularly, with ongoing efforts to make continued improvements. To sustain the changes, the committee has made several changes. The Director of Diabetes Management has more dedicated hospital time to support the efforts of the Diabetes Management Team. "High-risk" pharmacists have been selected and trained to oversee the use of intravenous insulin, facilitating the "Code Insulin" process. The committee has conducted a critical analysis of computer software that can integrate the current insulin policies and processes, ensuring continued success with insulin management while increasing ease of use. They also continue to monitor the processes and outcomes related to insulin infusions, spread effective changes throughout the institution, and look for additional opportunities to improve Diabetes care.

### 1.5 Expand Specialty Care Capacity

The purpose of this project is to increase the capacity to provide specialty care services to better accommodate the high demand for specialty care services so that patients have increased access to specialty services.

Seven DPHs (six systems) completed 16 milestones related to expanding their specialty care capacity:

1. Alameda County Medical Center (ACMC)
2. Arrowhead Regional Medical Center (ARMC)
3. Kern Medical Center (KMC)
4. Riverside County Regional Medical Center (RCRMC)
5. San Francisco General Hospital (SFGH)
6. University of California Los Angeles Medical Center (UCLA)

#### DY7 Milestones Accomplished:

- ✓ Establish specialty care guidelines for the high/most impacted medical specialties.
- ✓ Train PCPs, specialists and staff on processes, guidelines and technology for referrals and consultations into selected medical specialties
- ✓ Collect and analyze data on demand for different kinds of specialties, wait times for specialty appointments, and other key dimensions of access.
- ✓ Conduct specialty care gap analyses based on community need by assessing specialty clinic supply and demand, capacity and productivity.
- ✓ Implement a revamped specialty referral process.
- ✓ Increase the supply of specialist care by increasing the number of specialist providers and/or clinic hours, or opening a new specialty clinic.
- ✓ Increase the number of outpatient encounters where an encounter is defined by (1) an eReferral that does not require a scheduled specialty visit, (2) a specialty education or group visit, (3) a visit to the specialty clinic, (4) a telemedicine consultation, or (5) a directly scheduled procedure.
- ✓ Increase cardiology, dermatology, orthopedic and optometry encounters.

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Assess specialty clinic capacity, productivity, and/or care models
- Collect baseline data for wait times, backlog, and/or return appointments in specialties
- Expand the ambulatory care medical specialties referral management department
- Train PCPs, specialists and staff on processes, guidelines and technology for referrals and consultations into selected medical specialties
- Launch a specialty care clinic
- Conduct a specialty care gap analysis based on community need
- Implement a specialty care access plan
- Provide reports on the number of days to process referrals and/or wait time from receipt of referral to actual referral appointment

- Establish specialty care guidelines for the high impact/most impacted medical specialties.

### Progress and Impact:

Much of the focus of projects designed to increase specialty care access in DY7 was on building the necessary data and analytical capabilities to establish baselines and monitor improvement, increase specialty care services, and launch redesign efforts. For most DPHs, the ultimate impact of this work on access will be evident in DY8 and beyond.

While it is too early to determine the aggregate impact of these projects on improvements in specialty care access, initial data from those DPHs that were further along in their specialty care transformation work looks quite promising.

For example, through a combination of reorganization, added space, added personnel, expanded clinic hours and leveraging ACMC's training partnership with UC Berkeley School of Optometry, ACMC reported the following results in DY7:

- An increase of more than double (127%) in the number of optometry encounters
- A 22% increase in orthopedics visits, a 31% decrease in the orthopedics backlog, and a reduction in the ratio of new referrals to available new appointments (from 1.28:1 to 1.16:1).
- A 22.4% increase in cardiology clinic visits, a 52% decrease in the cardiology backlog, and a reduction in the ratio of new referrals to available new appointments (from 1.62:1 to 1.38:1)
- A 6.4% increase in dermatology visits<sup>17</sup>.

At SFGH, the number of outpatient encounters increased by an average of 13% in 16 of their 47 Specialty care clinics. Each of the 16 clinics increased access by at least 5%, and up to 37% where they were able to add new providers. These improvements are attributed to availability of additional funding, availability of real-time data for managers to monitor wait times, rapid improvement events, and training.

### *Stakeholder Engagement*

At ARMC, the ear, nose and throat (ENT) specialist used an iterative process of developing specialty care guidelines with input from impacted clinical staff, and then spread this method across three other specialty groups who were developing their own guidelines. The specialist initially drafted the guidelines, gathered feedback from clinical staff, revised the guidelines, and continued this process until it was clear that the guidelines were user-friendly. Once the guideline template was developed, Dr. Roberts, in collaboration with Ambulatory and Referral Services, worked with the other three specialty

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<sup>17</sup> ACMC's DY 7 milestone for this project was to develop the business plan to increase cardiology, dermatology, and orthopedic encounters by 15% each compared to baseline by DY 10. While ACMC noted the increase in dermatology visits in their DY 7 report, their work in DY 7 focused on building the necessary infrastructure to prepare to implement teledermatology in DY 8. Though they experienced this small increase in dermatology visits in DY 7, they anticipate greater increases in DYs 8 – 10 as a result of their DSRIP work to implement teledermatology.

groups to develop their own guidelines for referrals. This Plan, Do, Study, Act (PDSA) process proved to be effective; making it easy to roll out and train on as there was consistency with the format.

KMC applied the techniques of "secret shopper," and shadowing of patients and staff to understand barriers to specialty care access through eyes of the user (patient and staff). Starting with the view that any changes made to processes require a deep understanding of how patients are currently experiencing the system, KMC staff went through the process of attempting to schedule appointments through the scheduling phone system to identify what the patient experienced. A staff member also measured cycle time by following patients through the clinics to understand how long patients waited. In addition, KMC project managers and clinic directors shadowed clinic staff, which allowed them to understand where bottlenecks occurred, and duplication of work, which provided valuable information for redesigning processes to increase efficiency.

#### *Training and Capacity Expansion*

Each DPH incorporated a major focus on training into their specialty care access projects in order to spread adoption of new specialty care guidelines and other redesigned processes to increase access to specialty care. This included developing curriculum, training staff and clinicians, and integrating into their role as major providers of Graduate Medical Education. For example, through an existing partnership, ACMC added an optometry room at its Eastmont Wellness Center, and the University of California, Berkeley School of Optometry provided the equipment and the optometry students do the intake and discharge activities. This is a real "win-win" situation—ACMC patients get a greatly-needed service, and the students get a wonderful training opportunity.

#### *Performance Improvement Approaches*

DPHs used different performance improvement methods in their projects to increase specialty care access. ACMC is using Lean to achieve efficiencies in the orthopedics clinic. The first phase of this process, known as 5S, has been completed and has resulted in reconfiguring the clinic workspace to be more efficient and better organized. A Kaizen on discharge processes took place at the end of June, and 11 people participated. Upcoming portions of the Lean engagement will redesign the scheduling system and improve workflow processes during clinic visits.

#### *Challenges & Lessons Learned*

One key lesson learned is the importance of good data. For example, when KMC first planned to conduct an assessment to determine the need to re-design the specialty care clinics, they found it very difficult to understand issues such as wait-times, the number of patients needing appointments, the number of referrals screened, etc. and determined they needed better data to identify areas for improvement as well as to identify performance goals. They are working to standardize the methods by which data is collected, and staff has also been trained on how to correctly input information.

Yet, data alone is not sufficient. KMC also learned that you can need to bring more than just data to the table; you must personalize problems with specific patient examples or stories. This interrupted the natural tendency of staff, managers and physicians to distance themselves from data and brought meaning to the data, and urgency to the change effort.

Similarly, ARMC seriously underestimated the difficulty they would have in automating the tracking of baseline and referral data. The baseline data, as well as most of the referral tracking reports, had to be obtained manually, which became a laborious process that slowed down ability to provide feedback to the specialists. Eventually ARMC developed an automated system and tested it in a clinic setting, but this took several months.

A final lesson is that one cannot fix just one component of the health care system without addressing problems in other connected pieces. For example, at RCRMC, they discovered that their relatively low productivity in their CHF clinic was driven, in part, by a patient no-show rate of 34%. To reduce this no-show rate, CHF Clinic staff are calling patients and/or sending reminder post cards in the mail. At ACMC, they realized that growing specialty care services will increase demand for ancillary services and especially for operating room time. If ACMC cannot expand those related services, then a new backlog of patients awaiting the needed service is likely to be created. Planning for overall, coordinated expansion is part of the larger strategic plan that ACMC is undertaking.

A major challenge to specialty care expansion is the recruitment of specialty care providers, be they physicians or midlevel providers. ACMC attempted to hire experienced midlevel providers and train them more deeply in the specialty, yet found that midlevel providers with specialty experience are few in number, and in very high demand. Another lesson learned is how critical physician buy-in is to the success of any clinical change effort, including changes or plans to redesign. KMC takes all physician recruitment requests and priorities to the KMC Board of Governors, a board comprised of the chair of each physician department at the hospital.

Another big challenge facing ACMC and other DPHs is lack of physical space for specialty care expansion. They are addressing this by identifying underused space and undertaking needed renovations, and/or constructing new facilities, but the demand is so great that many DPHs anticipate that space limitations will continue to be a challenge.



## 1.6 Enhance Interpretation Services and Culturally Competent Care

The purpose of this project is to expand DPHs' ability to provide qualified and timely health care interpreting services for people whose primary language is not English, as well as to improve providers'/staff sensitivity to the wide diversity of patients' cultures and, therefore, enhance capacity to provide more effective care.

Five DPHs completed eighteen milestones related to enhancing their interpreting services and culturally competent care:

1. Contra Costa Regional Medical Center (CCRMC)
2. Kern Medical Center (KMC)
3. Natividad Medical Center (NMC)
4. University of California San Diego Health System (UCSD)
5. Ventura County Medical Center (VCMC)

### DY 7 Milestones Accomplished:

- ✓ Conducted various types of gap analyses in providing effective and reliable language access service to patients and their families.
- ✓ Established baseline data for number of encounters facilitated by qualified interpreters
- ✓ Provided a certain number of qualified interpreter encounters per month
- ✓ Increased number of encounters facilitated by qualified interpreters by a certain percentage
- ✓ Hired and/or trained and certified additional medical interpreters
- ✓ Trained a certain number or % of staff/providers in appropriately utilizing healthcare interpreters
- ✓ Developed and train "champions" to improve cultural competency
- ✓ Planned expansion of wireless interpreting capacity
- ✓ Planned expansion of interpreter technology to additional patient care areas
- ✓ Implemented language access policies and procedures

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Evidence of gap analysis
- Baseline data collected and reported
- Average number of interpreter encounters recorded per month
- Number of hired and/or trained and certified interpreters

### Progress and Impact:

#### *Baseline Development*

The majority of DPHs with milestones in the area of language access and cultural competence started off by conducting a gap analysis and/or establishing a baseline for interpreter usage upon which to improve.

In conducting a language access gap analysis, CCRMC identified issues with identification of patient's preferred language, communication of this information to providers and staff and a need for increased access to qualified interpreters in a timely manner. To address these issues, CCRMC developed a new language access policy; trained registration staff to appropriately identify the patients' preferred language, place a sticker with this information on the patient's clinic card or wrist band and enter this information into a database; trained clinic staff to access this information and set up interpreter services equipment (video or phone connection) for the patient's preferred language; and expanded the availability of wireless video connection with an interpreter, which can follow the patient through multiple points of contact in the system. As a result, the number of interpreted encounters grew from 3614 in January 2011 to 4685 in May 2012.

Realizing that many patients still do not receive adequate language access, which has strong care quality and safety implications, all five DPHs set goals for themselves to increase the volume of interpreter services. KMC, for example, exceeded their goal of 5% increase in interpreter encounters per month, achieving a 50% increase in DY-7 compared to the baseline in DY-6. They attribute this increase to having trained 628 of their nurses and physicians on using interpreter services, as well as having expanded video-interpreting technology to additional units in the hospital.

#### *Staff Training*

Public hospital systems often care for new immigrant groups in languages of lesser diffusion, where there may be a scarcity of qualified interpreters. Both VCMC and NMC in recent years experienced an influx of indigenous populations from Mexico who speak uncommon languages, such as Mixteco, and lack proficiency in both English and Spanish. In response, both DPHs undertook concerted efforts to improve language access to these populations by training bilingual community members to become health care interpreters (NMC) and hiring and then training two trilingual English-Spanish-Mixteco interpreters to work in the hospital (VCMC).

Among other initiatives to improve cultural competency of care, KMC trained 12 nurses as "Cultural Champions", who will, going forward, assist with the development and organization-wide implementation of cultural competence training programs.

#### *Challenges and Lessons Learned*

One of the key challenges encountered has been that providers and staff still have varying degrees of understanding of the compelling reasons to use trained interpreters, and many are still too quick to obtain assistance from family members or ad-hoc bilingual staff. To remedy this, CCRMC, KMC and NMC have ramped up their provider/staff trainings on the importance and skills of using qualified interpreters in clinical settings.

### 1.7 Enhance Urgent Medical Advice

The purpose of this project is to provide urgent medical advice so that patients who need it can access it telephonically, and an appropriate appointment can be scheduled so that access to urgent medical care is increased and avoidable utilization of urgent care and the ED can be reduced.

Five DPHs (two systems) completed five milestones related to enhancing urgent medical advice:

1. Kern Medical Center (KMC)
2. Los Angeles Department of Health Services (LADHS)

#### DY 7 Milestones Accomplished:

- ✓ Developed and distributed patient-focused newsletters with proactive health information and information on nurse advice line
- ✓ Increased the number of patients that accessed the nurse advice line

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- The number of patients that access the nurse advice line
- The number of patients that called the nurse advice line and reported intent to go to the ED for non-emergent conditions

#### Progress and Impact:

##### *Nurse Advice Line*

Implementation of a 24/7 nurse advice line was the primary focus of DPHs working to enhance delivery of urgent medical advice. By calling the line, patients can receive advice about their condition, and, if necessary, are directed to seek emergent or urgent care. When appropriate, a patient may be advised to make an ambulatory care appointment or undertake self-care. These services provide patients with timely medical advice, and help ensure that patients receive their care in the most appropriate setting (e.g., avoid patients going to the ED for non-emergent conditions).

KMC analyzed data on nurse advice line calls to gain a better understanding of the number of symptom-based calls, the number of non-urgent health information calls, a breakdown of where patients were advised to go after the call, and the top ten triage guidelines used, among other metrics. That information was then used to help determine what topics to include in the Quarterly Patient Education Newsletter that is sent to patients.

Both DPHs leveraged the work they were doing to enroll patients into their respective Low Income Health Program (LIHP), as part of the coverage expansion component of California's Section 1115 Medicaid Demonstration Waiver. Based on shared learnings regarding the use of nurse advice lines from other counties with a LIHP, both KMC and the LADHS conducted massive outreach efforts to educate patients with information on how to access the nurse advice line in outreach materials sent to patients who were new enrollees in LIHP. Due to this outreach effort, both DPHs reporting on this

project achieved more than a 10% increase over baseline in the number of patients who accessed the nurse advice line during the reporting period, exceeding their DY 7 target.

## 1.8 Enhance Coding and Documentation for Quality Data

The purpose of this project is to improve the accuracy and consistency of quality data used in the organization so that the data accurately reflects the care provided and patient outcomes, and can effectively inform quality improvement activities.

Five DPHs (two systems) completed four milestones related to enhance coding and documentation for quality data:

1. Los Angeles Department of Health Services (LADHS)
2. University of California San Diego Health System (UCSD)

### DY 7 Milestones Accomplished:

- ✓ Implemented HIPAA 5010 transaction sets to be able to communicate with other institutions (such as payors) who are able to receive such transitions
- ✓ Trained staff on changes in work flow with the transition to HIPAA 5010 and ICD-10
- ✓ Analyzed current information systems that house ICD-9 codes to determine conversion/upgrade needs
- ✓ Developed a project plan for the organization-wide transition

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- The number of facilities able to send and receive HIPAA 5010 transaction sets
- The number of staff formally trained on clinical workflow redesign

### Progress and Impact:

#### *ICD-10 Conversion*

The International Statistical Classification of Diseases and Related Health Problems (ICD) provides codes to classify diseases and a wide variety of signs, symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or disease. The United States currently uses obsolete ICD-9 codes which are 30 years old and do not reflect current medical knowledge or advances in technology. All other industrialized nations in the world use ICD-10, which provides additional granularity for diagnosis and inpatient procedure codes. As per federal requirements, all health care settings, physicians and other clinical providers are required fully adopt ICD-10 by October 2014.

In addition to the conversion of ICD-9 to ICD-10 codes, HIPAA 5010 transaction sets will need to be upgraded and is a pre-requisite to ICD-10 conversion. HIPAA 5010 is a new standard that regulates the electronic transmission of specific health care transactions. Covered entities, such as health plans, health care clearinghouses, and health care providers, are required to conform to HIPAA 5010 standards. HIPAA 5010 allows the ability to increase the number of diagnosis codes allowed on a claim and allows for ICD-10 reporting.

Conversion from ICD-9 to ICD-10 is critical for hospitals to evolve and be prepared for federal health care reform. Quality measures, typically driven through Medicare, will soon be applied to the Medicaid

program, and the scope of measures will be expanded to include hospital-acquired conditions and efficiency. Specific Medicare and Medicaid payments are being revised in an effort to align financing with quality so as to drive improved health outcomes and more efficient care through fiscal incentives and penalties. In addition, health care reform calls for the development of a national quality strategy that includes priorities to improve the delivery of health care services, patient health outcomes and population health. In order to accomplish this, hospitals will need to be able to generate quality measures data that will be used for reporting and payment under federal health programs. The conversion to ICD-10 codes provides the foundation for hospitals to collect more granular data for quality reporting that will be required under health care reform.

Both DPHs undertaking this project embraced an organization-wide transition towards ICD-10 codes in DY7.

As of the middle of DY 7, all LADHS hospitals were capable of sending and receiving 5010 transaction sets and were live with such transactions to the extent feasible by payer. LACDHS reports that the transition was smooth and that completing this work given an aggressive timeline required LADHS to work collaboratively its health information systems and billing clearinghouses. Further, LADHS conducted work to ensure that its system was updated to accept both HIPAA 4010 and 5010 transactions, as not all entities with which it conducts business have migrated to 5010 as of DY 7. As part of that work, LADHS implemented companion guides to ensure a seamless transition. In DY 7, LADHS also trained staff on the changes that will occur with the transition to HIPAA 5010 and ICD-10 and the associated workflows. LADHS also created an ICD-10 Program of Projects steering committee and charter to prepare for ICD-10 migration.

At UCSD, DY 7 was focused on developing a project plan for the organization-wide transition to ICD-10. UCSD has embarked on a system-wide effort to bring together key stakeholders across hospital and medical group financial systems, health information systems, and electronic medical records teams, compliance, coding and clinical documentation specialists to focus on the operational management of the conversion to ICD-10 system-wide. One such activity was a thorough assessment of all current information systems, to determine whether conversion or upgrade was needed. Based on those findings, a comprehensive action plan, documenting the tactics, owners and deadlines for each step necessary to deploy and code ICD-10, has been reviewed and finalized. One challenge noted by UCSD has been staffing changes in the form of the project manager and Chief Medical Informatics Officer both leaving the system. UCSD is working to fill those positions, and continues to meet monthly to move this project forward.

### 1.9 Collect Accurate Race, Ethnicity and Language (REAL) Data to Reduce Disparities

The purpose of this project is to collect patient demographic data—also known as Race, Ethnicity and Language (REAL) data—in a standardized and structured way so that data can be used to identify and address health care disparities.<sup>18</sup> These data are also being utilized to improve the timeliness and accuracy of interpreter services provided to limited-English proficient patient populations, as well as to boost the cultural competency of all care provided within the DPH system.

Three DPHs completed four milestones related to collecting patient demographic information:

1. Contra Costa Regional Medical Center (CCRMC)
2. San Mateo Medical Center (SMMC)
3. University of California Davis Medical Center (UCD)

#### DY 7 Milestones Accomplished:

- ✓ Establish processes for capturing accurate REAL data and linking it to quality data
- ✓ Collect accurate REAL data fields as structured data for at least 40% of patients
- ✓ Design and test a patient questionnaire about the experience of being asked about their race, ethnicity and preferred language

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Plans and processes developed
- The percentage of all registered patients who had complete REAL data fields recorded in the registration database
- Questionnaires designed and test implemented

#### Progress and Impact:

##### *Data Capture*

The three public hospitals with milestones for this project attended to the reliable capture, accuracy and utilization of their patients' demographic data on race, ethnicity and language.

- CCRMC had a DY 7 target of collecting REAL data on at least 40% of its patients, but exceeded that target and captured the data at 80%. They achieved this by training over one hundred registration staff to collect these data elements.

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<sup>18</sup> For DPHs, SNI developed REAL data collection and categorization standards utilizing the Institute of Medicine (IOM) report, "Race, Ethnicity and Language Data: Standardization for Health Care Quality Improvement" (2009), as the foundation while providing a list of ethnic and linguistic categories relevant to the local demographic profiles in California. SNI disseminated these standards and encouraged California public hospital systems to adopt them on a priority basis. For more information on the REAL data standards, please see <http://www.safetynetinstitute.org/content/REALDataInitiative.htm>. The standards following the mandate by the Affordable Care Act Section 4302 were announced after DY 6 came to a close. SNI will encourage DPHs to consider integrating the new Affordable Care Act Section 4302 standards into their current standards based on the IOM recommendations.

- UCD focused on obtaining the patients' perspective on the process of being asked about their race, ethnicity and language. They designed and implemented a telephone survey of patients throughout the organization, which informed modifications to the process, such as asking these questions in a private setting, offering an explanation of why these data are important, and providing written materials when asked.
- SMMC's REAL data registration system went "live" in DY7 after months of planning, testing and training work completed. Patients' self-reported data are inputted into the EHR by the registration staff. By the end of DY7 REAL data elements were recorded on over 18,000 patient visits, allowing the organization for the first time to obtain an accurate understanding of the race, ethnicity and preferred language of its patients. This information was used immediately to make improvements in provision of interpreter services by allowing patients the opportunity to indicate their level of English proficiency using a scale. Patients who rank below a determined threshold are offered interpretation services, thus ensuring that patients receive medical care instructions in a language they can understand.

#### *Using REAL Data to Reduce Disparities*

All three DPHs have plans to regularly stratify patient care quality and outcomes data in order to examine care for disparities. For example, UCD formed a steering committee and developed a strategic plan for eliminating disparities, which in its initial phase focuses on uncovering and eliminating disparities in care coordination, preventive health and at-risk population services.

#### *Challenges & Lessons Learned*

A challenge identified in this area is the discomfort by some staff in asking patients about this potentially sensitive information. To remedy the problem, CCRMC increased the support and education of targeted staff, and also conducted rapid PDSA cycles in the patient registration area through which the script being used by the staff in discussing this topic with patients was revised and made more respectful from the patient's perspective.



### 1.10 Introduce Telemedicine

The purpose of this project is to enable enhanced access to health care, particularly specialty care, through the use of remote technology, where appropriate.

Two DPHs completed three milestones related to telemedicine:

1. University of California Irvine Healthcare (UCI)
2. University of California San Diego Health System (UCSD)

#### DY 7 Milestones Accomplished:

- ✓ Designed a comprehensive Telemedicine team at the Senior Center to provide once a week sessions at two Skilled Nursing Facilities, including staff training
- ✓ Piloted telemedicine charting and communication tools for both consulting and referring practitioners within the Electronic Health Record (EHR) system
- ✓ Established a telemedicine triage unit for at least one selected specialty

The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- The number of remote telemedicine sites
- The number of telemedicine-established specialties/services

#### Progress and Impact:

The two DPHs that undertook this project were able to design and plan for new telemedicine services; develop and train telemedicine teams; create clinical protocols for telemedicine; pilot a charting and communication tools for consulting and referring practitioners implemented within the electronic medical record (EHR); and expand telemedicine into one additional specialty service (Anesthesiology – Pain Medicine Service).

#### *Expand Telemedicine Services*

The overall goal of the UCSD enterprise-wide telemedicine program is to provide care to more patients by using telemedicine services to link UCSD specialists (the hub) with community partners (spokes). UCSD had previously developed a centralized, optimized, telemedicine infrastructure for use with specialty departments' clinic operations and began the expansion of telemedicine in specialty clinics. For DY7 an additional service was established for Anesthesiology – Pain Medicine Service. For DY7 a total of 98 telemedicine consults occurred across the Tele-HIV Neurology, Hepatology and Anesthesiology-Pain Medicine specialties.

#### *Shared Learning*

The UCI Senior Center Telemedicine team has established collaboration with the UCSD Telemedicine team for training, exchange of ideas, and lessons learned, etc. UCI telemedicine staff and executives have received telemedicine program training at UCSD. UCSD provided telemedicine training to two UCI executives, covering practical applications and potential uses of telemedicine, and an overview of available telemedicine equipment options. Additional networking and support is being leveraged by the

UCI Information Services Telemedicine team through membership in the American Telemedicine Association, and participation in association educational events.

### *Challenges & Lessons Learned*

During UCSD's telemedicine deployment, sustainable reimbursement models have been a consistent challenge. Once third party insurers develop clear and consistent plans for telemedicine reimbursement, UCSD plans to transition the model to include insurance billing. The second major challenge is the continued need for spoke (community partner) and hub (UCSD specialty) training by a designated spoke clinical champion. They learned that each of the spoke sites must undergo detailed training before they begin providing telemedicine visits and intermittently as needed. Ongoing education is a part of future expansion plans. Although spoke site personnel are trained by us at time of deployment, the spoke sites do not always provide correctly signed consent forms, on time communication, or on time patient arrival, especially in the early phases of establishing the local telemedicine program.

A final challenge noted by UCSD as the system plans for greater use of telemedicine was the initial design of electronic note templates, which were generated as "smart text" templates. Use of these templates created a significant delay, due to programming time, between initial development and subsequent use and even more delay if modifications to note templates were desired by hub provider. To address this, UCSD has have modified their approach to develop these templates as "smart phrases", and now allow immediate modification by users. This has dramatically improved provider-specific customizable language, and creates relevant telemedicine templates for multiple types of patient encounters.

### 1.11 Develop Risk Stratification Capabilities/Functionalities

The purpose of this project is to develop the ability to identify high-risk patients, in order to direct these patients to appropriate health care in both a preventive and ongoing manner.

The University of California Irvine Healthcare (UCI) completed two milestones related to developing risk stratification capabilities/functionality.

#### DY 7 Milestones Accomplished:

- ✓ Using diabetes as a model, evaluated the proportion of patients in each risk stratum
- ✓ Implemented risk stratification pilot protocol using diabetes as a model

#### Progress and Impact:

##### *Risk Stratification*

Through focused efforts to risk stratify patients, DPHs can target services proactively towards the goal of preventing disease for well patients, help patients with disease improve rapidly, assisting patients with chronic disease manage their illness to optimize healthy outcomes, and focus extensive care management resources on those with the most complex health and psychosocial needs. By-products of risk stratification include: targeted prevention, the ability to allocate primary and specialty care resources appropriately and efficiently, and the ability to reduce unnecessary utilization of expensive emergency and inpatient care.

UCI undertook this project using diabetes as the target disease, leveraging their internal research capabilities. The first step was undertaking a statistical analysis of illness complexity within the disease of diabetes, which was presented to various audiences, including the UCI Diabetes Summit group, for consideration and input. The analysis will aid future planning and inform organizational strategies designed to improve care for patients with diabetes.

The second step was to use the Total Illness Burden Index (TIBI) survey for UCI patients with diabetes. The Total Illness Burden Index is a widely used, comprehensive summary measure of case mix, or severity of illness, that aggregates patients' conditions, problems, and diseases, weighting them by severity. Caregivers can utilize the assigned TIBI score to assist in setting care priorities and goals in situations that involve several simultaneous disease conditions or symptoms. This step was accomplished by UCI in DY7.

##### *Staff and Patient Engagement*

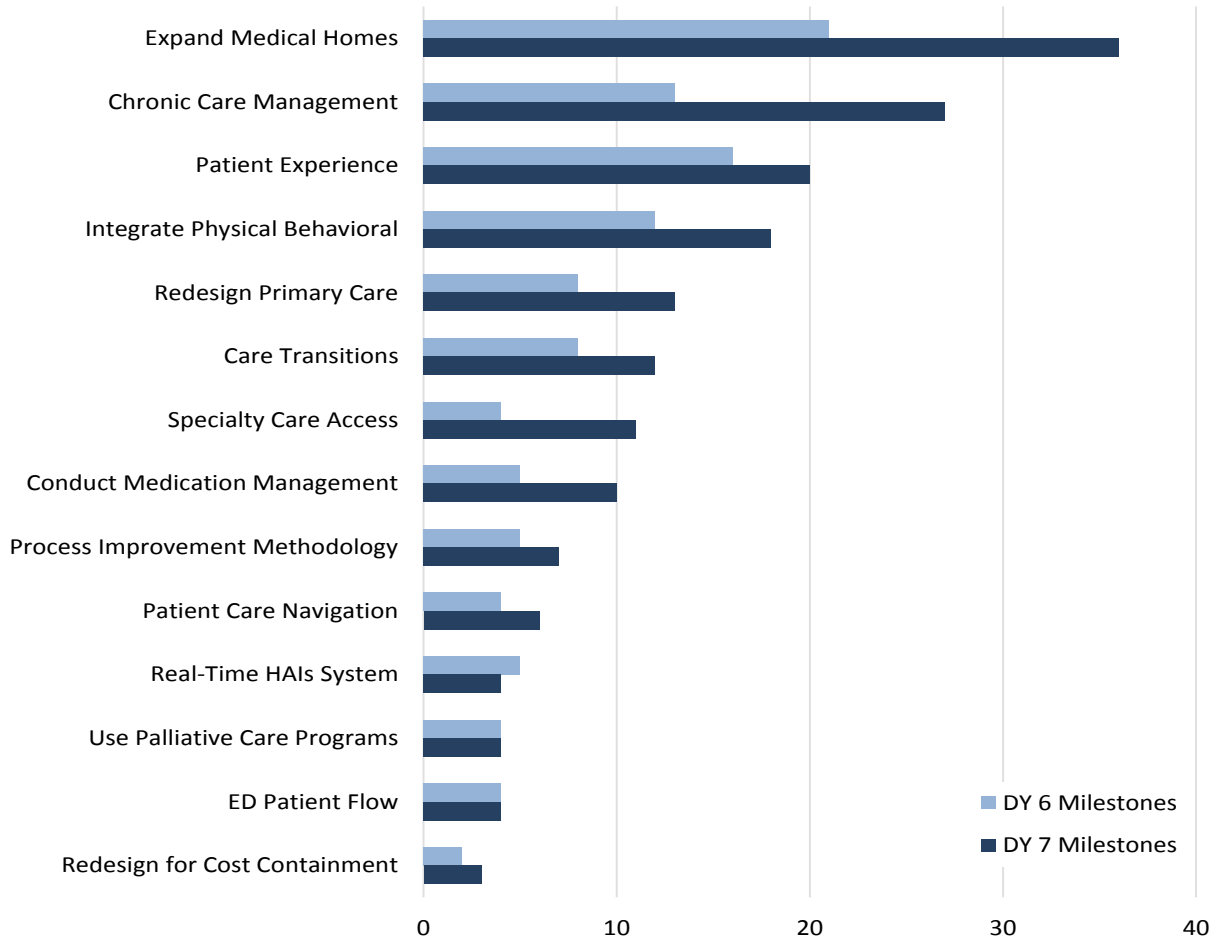
Engagement of physicians and patients was a critical component of this work, both in presenting the statistical analysis of illness complexity to various audiences, and in using the TIBI to directly survey UCI patients with diabetes to begin to stratify the patient population by risk severity.

### C. Category 2: Innovation & Redesign

Per the STCs, the purpose of Category 2: Innovation and Redesign is to make “investments in new and innovative models of care delivery (e.g., medical homes) that have the potential to make significant, demonstrated improvements in patient experience, cost and disease management.”<sup>19</sup>

Category 2 work completed in DY 7 built on work completed in DY 6, and included the piloting, testing and replicating of innovative care models, with a focus on redesigning care delivery in order to create a meaningful, high-quality experience for patients. This is reflected in the significant number of Category 2 projects taken on during DY 7 that emphasize innovative, meaningful expansion (e.g., expanding medical homes, expanding chronic care management models, increasing specialty care access through redesign of the referral process, and redesign of primary care). A comparison of DY6 and DY 7 milestones completed within each Category 2 project follows.

Figure 4: Number of Milestones Completed by Project in Category 2



<sup>19</sup> Please see Waiver II-WOO 193/9, Attachment Q: Categories 1-2, Section V, at <http://www.dhcs.ca.gov/Documents/Attachment%20Q.pdf>.

Key themes emerge from a review of Category 2 projects, indicating that a number of DPHs are using similar tools to deliver results. For Category 2 projects, steps taken by DPHs in DY 7 often included:

- Creating the necessary infrastructure to collect reliable performance data, and using data that is collected to guide innovation and redesign efforts (e.g., EHRs and registries)
- Staff training, particularly in support of new staff roles which have been defined (e.g., participation in physician/patient care team huddles on the day of visit before morning and afternoon clinic sessions)
- Engaging DPH leadership as champions to guide and build enthusiasm for delivery system improvement (e.g., quarterly CEO Forums, appointment of Chief Experience Officers to oversee patient experience improvements)
- Focusing efforts through identification of specific performance improvement opportunities or methodologies (e.g., analysis of use of spirometry to focus performance improvement efforts designed to increase access to pulmonary services)
- Standardizing approaches when possible (e.g., protocol-driven automatic patient reminders, inclusion of medication reconciliation upon admission and in preparation for discharge)
- Selecting and deploying a unifying performance improvement methodology (e.g., Lean, Six-Sigma) to redesign processes

Efforts to redesign and innovate within Category 2 are focused in a manner that supports overall system integration and coordination. For example, through efforts to expand medical homes, DPHs are creating opportunities for positive patient experiences, laying the groundwork for better quality and health outcomes, are providing more and better access to appropriate care, and are delivering care in a more efficient, cost-controlled manner.

Category 2 findings by project are summarized below.

## 2.1 Expand Medical Homes

The purpose of this project is to transform public hospital primary care clinics from physician-centered practices to patient-focused care teams. These efforts across the state of California are described below using the following six components, known to be critical to achieving high performing primary care: data driven improvement, empanelment and panel size management, team-based care, population management, continuity of care, and prompt access to care<sup>20</sup>.

Seventeen DPHs (thirteen systems) completed 36 milestones related to expanding medical homes in DY 7.<sup>21</sup>

1. Alameda County Medical Center (ACMC)
2. Arrowhead Regional Medical Center (ARMC)
3. Contra Costa Regional Medical Center (CCRMC)
4. Kern Medical Center (KMC)
5. Los Angeles Department of Health Services (LADHS)
6. Riverside County Regional Medical Center (RCRMC)
7. San Francisco General Hospital (SFGH)
8. San Joaquin General Hospital (SJGH)
9. San Mateo Medical Center (SMMC)
10. University of California Davis Medical Center (UCD)
11. University of California Irvine Healthcare (UCI)
12. University of California Los Angeles Medical Center (UCLA)
13. University of California San Francisco Medical Center (UCSF)

### DY 7 Milestones Accomplished:

- ✓ Data Driven Improvement:
  - Designed a seasonal influenza notification system using the EHR functionality to send message to patients on the importance of immunization
- ✓ Empanelment and Panel Management
  - Assigned patients to medical homes
  - Determined the appropriate panel size (i.e., total number of patients whose care is managed by the PCP/team) based on staff capacity, demographics and diseases
  - Planned and implemented activities related to assigning patients to medical homes, including establishing criteria/guidelines for medical home assignment
- ✓ Team Based Care
  - Expanded and redefined the roles and responsibilities of primary care team members
- ✓ Population Management

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<sup>20</sup> Willard, Rachel and Bodenheimer, Thomas, The Building Blocks of High Performing Primary Care: Lessons from the Field, prepared for the California HealthCare Foundation, April 2012

<sup>21</sup> For further information on how medical homes are defined for purposes of the DSRIP, please refer to Waiver II-WOO 193/9, Attachment Q: Categories 1-2, Appendix A: Evidence-Based Models, <http://www.dhcs.ca.gov/Documents/Attachment%20Q.pdf>.

- Developed training materials and trained panel managers, health coaches and care managers
- ✓ Continuity of Care
  - Identified patients seen within the DPH without a medical home
- ✓ Prompt Access to Care
  - Put in place policies and procedures to enhance patient access to medical homes

The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- The percentage of targeted individuals assigned to a medical home
- The average number of clinic visits
- The number of full-time equivalent providers per clinic
- The number of patients per year per primary care clinic
- The number of staff trained in the medical home model

Progress and Impact:

National expert on the Patient-Centered Medical Home, Dr. Thomas Bodenheimer identified six essential building blocks of transformed primary care, all of which are present in the highest performing health systems. The building blocks (listed below) are interrelated and essential.<sup>22</sup>

1. Data driven improvement
2. Empanelment and panel size management
3. Team-based care
4. Population management
5. Continuity of care
6. Prompt access to care

Review of DY7 reports reveal that DPHs have indeed been implementing these critical building blocks within their projects related to Expand Medical Homes. For example, in the aggregate, over 300,000 patients were assigned to a medical home and/or (PCP) in DY 7. This is significant statewide progress on the foundational building block of empanelment – one of the early and critical elements to have in place and hardwired as part of the patient-centered medical home model. *There have also been challenges and lessons learned; these are embedded within each sub-section below.*

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<sup>22</sup> Willard, et al.

### *Data Driven Improvement*

Many DPHs have been very focused on implementing an IT infrastructure (EHR and registries) that will allow them to understand their patient population, proactively manage their health, and engage in quality improvement. All DPHs engaged in this project are generating data but there is variation in: a) the ease with which the data is produced, b) the granularity of the data (whether it's clinic-level data or provider level data), and c) who sees and uses the data. DPH milestones related to Project 1.1, Implement and Utilize Disease Management Registry Functionality, is provided in Section II, pages 12 – 15. Hence, this section of the report will highlight other ways DPHs are enabling data driven improvement.

Broadly, the DPHs working on this project are using data generated from their respective systems to create provider reports, so that providers and care teams can have a better picture of the health of their panel of patients. For example, SMMC spent a significant amount of time working with their Information Services Department to create monthly automated reports that would generate a list of patients assigned and seen by specific primary care physicians (PCP) in the past year, as well as a list of patients seen by each provider for the same period that remain unassigned to a provider. The automated PCP reports are organized by clinic and published onto a shared site. Of note, the reports generated in DY7 provided the PCPs with their first-ever complete list of assigned (empanelled) patients. LADHS has developed and distributed Provider Profiles for their PCPs, with information regarding their empanelled population. These profiles include total number of patients assigned to them, a calculation of member-equivalents, a disease-burden adjusted measure of workload, and active patients. In addition, there is a demographic profile of gender and age distribution and measures for continuity of care. Most importantly, the provider profiles include key clinical quality measures including glycemic and lipid control for the empaneled population, not just the patients who see the provider.

*Challenges for multiple systems include simultaneous implementation of the EHR and Primary Care Medical Home model, or attempting to function as a PCMH with an inadequate registry in the absence of an EHR. This makes data driven improvement particularly challenging and leads to a significant amount of reworking of processes post-EHR implementation.*

### *Empanelment and Panel Size Management*

Empanelment—the process of ensuring that every patient has an assigned primary care clinician—is a critical building block of the medical home. Empanelment provides a systematic way to encourage patients to see their own primary care clinician, and enables the clinic system and clinicians to better measure performance, as well as manage supply and demand.<sup>23</sup> It is very apparent from review of the DPH reports, that empanelment and panel size management has been a very active area of work in DY7. Eleven of the thirteen DPHs participating in the Expand Medical Home project have milestones related to empanelment. The two systems without empanelment milestones (SFGH and UCD) have already standardized their empanelment and panel size management processes.

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<sup>23</sup> The Safety Net Medical Home Initiative. Empanelment Implementation Guide, Parts 1 and 2, March 2010 and June 2011, [www.safetynetmedicalhome.org](http://www.safetynetmedicalhome.org).



SMMC, RCRMC and LADHS are all actively working on empanelment, establishing mechanisms to maximize assignment to appropriate and convenient providers. Especially noteworthy is that LADHS has empaneled more than 240,000 patients to specific provider-led teams. The process of empaneling these patients has not been easy. Combining data from health plan assignment, with visit data to determine the right provider, ensuring those with special needs (e.g. HIV/AIDS) are matched with specially qualified providers, geocoding each patient address and linguistic preference to match with the most appropriate provider are all new activities to LADHS. CCRMC implemented Primary Care Provider (PCP) Central, a software system that uses complex algorithms to automatically assign a PCP to a patient based upon visit history, family member PCPs, proximity, language, age and patient preference. Each weekday, the PCP Central scans Contra Costa Health Plan's enrollment system to identify full-scope Medi-Cal and LIHP individuals without an assigned PCP. With implementation of PCP Central, 100% of newly enrolled patients are assigned a PCP upon enrollment and 98% of the patients keep the PCP assigned by the system.

ACMC came to consensus on a target provider panel size of 1350 patients per FTE provider and is now "cleaning" the panel data to accurately reflect provider panels and finalizing the panel assignment protocol. *The project has moved more slowly than they had planned as they have been challenged with their "Connecting to Care" plan to connect high priority (ED and specialty care) patients to a medical home given the multiple stakeholders (which includes a community wide group), the interdependence of the "Connecting to Care" plan on multiple other change efforts, and the need to establish both a pre-EHR risk stratification criteria and a post-EHR algorithm given the timing of their EHR implementation.* However, this milestone, while quite demanding on its own, represents only one aspect of ACMC's long-term goal of transforming their primary care centers into medical homes. ACMC is committed to doing this jointly with its community safety net partners (Community Health Center Network and the County Health Care Services Agency) and thereby building a "medical neighborhood,"

#### *Team-based Care*

The goal of this building block is to develop stable teams in which every team member—provider, medical assistant, Registered Nurse, and others—shares responsibilities for the health of their panel of patients and works to the top of their license and/or capabilities. This has been an area of focus for many DPHs. For example, through work supported by participation in SNI's Medical Home Collaborative, ARMC's McKee Family Health Center (FHC) procedures have changed to reorganize staff into primary care team pods and podlets. As a result, job descriptions have changed to reflect the new duties. The PCP is now held accountable for whether an assigned patient has "appropriate" outcomes for specific health conditions and whether they receive U.S. Preventive Services Task Force (USPSTF) recommended preventative services. PCPs are expected to track and know their rates and develop plans to continuously improve those rates. The Ambulatory Care Chronic Disease Case Manager will work with complex patients to set self-management goals and follow up with patients. Nurses will provide patient care via nurse visits in clinic as well as through phone and e-mail visits. LVNs will serve as panel managers for the pods monitoring panel size and quality metrics. Clinic Assistants will perform self-management support, patient education on basic conditions and medication reconciliation. Clerks will

coordinate referrals and help ensure compliance with evidence-based guidelines for preventative services by running reports and contacting patients in need of these services. As another example, to achieve team-based care, UCD also underwent restructuring of its workforce models and teams (optimizing the medical assistant role and increasing the use of senior LVNs in clinical practice), optimized the use of a central RN triage function, and developed a system of centralized care management. Furthermore, integration of PCMH model concepts into the UCD Medical Center's strategic plan helped refocus attention on the core features (like team-based care) of the PCMH model.

*As ARMC became more knowledgeable about the patient centered medical home, they realized they needed more panel managers than anticipated.* After testing some concepts on a small scale with one physician champion and the first panel manager, they adjusted their plan to include 2 panel managers for each pod. Furthermore, in order for this new staffing model to work, it also required hiring many more Clinic Assistants. Typically, it takes several months before a new staff member is hired through County Human Resources (HR). Notably ARMC's Administration played a crucial role in facilitating the implementation of pods and podlets at the FHC by working with County HR to push through the hiring of Clinic Assistants, which are critical to the medical home.

*For SMMC, it was challenging to find the time for staff to meet and develop a plan to reorganize and deliver team-based care.* In several clinics, significant scheduling and role definition changes were needed. This required weekly meetings with clinic leadership and staff for nearly a year to fully develop and implement the medical home delivery model.

#### *Population Management*

Population management involves the stratification of a patient population based on clinical needs so that appropriate resources may be deployed by the primary care team. There are three basic levels of population management: panel management, self-management support, and complex care management. Across all DPHs working on this project, there was ample evidence of engagement on all three levels (note ARMC in the Team-base Care section above). UCSF and SFGH have trained medical assistants/health workers in panel management and health coaching, and also hired and trained RNs to perform complex case management of high-risk patients. The training of these staff at both San Francisco institutions was conducted by Dr. Thomas Bodenheimer and his team from UCSF's Center for Excellence in Primary Care. For the medical assistants and health workers, the training consisted of teaching staff to: identify care gaps, use motivational interviewing techniques with patients, and perform health coaching to educate patients on why these tests are important for their health.

*One challenge encountered by UCSF was making the cultural and process changes to include the inreach portion of health care maintenance into the medical assistant and licensed vocational nurse workflow.* This requires a few extra minutes per patient visit and, at first, staff fell behind as their workflow has traditionally consisted of only rooming patients and obtaining vital signs. However, as the program has matured, the staff found ways of using the EHR to produce clinic schedule lists so that much of this work can be done the day before by identifying patients who are overdue for tests and preparing those orders for the physician. The health coaching could then be accomplished on the day of the patient visit. In

terms of how this project has informed other projects, there has been an enthusiastic response from UCSF physician leadership and staff, which prompted the Primary Care Strategies Steering group to decide to pursue NCQA PCMH recognition.

### *Continuity of Care*

Continuity of Care, which is defined as the ongoing relationship between a patient and a team-based clinician, is the 5<sup>th</sup> building block of high-quality primary care. High continuity is associated with improved preventive and chronic care outcomes, increased patient and provider satisfaction, fewer unnecessary hospitalizations and lower overall costs of care. The LADHS provider profiles now contain measures of continuity of care with near real-time feedback to providers. At RCRMC, clinic management is tracking continuity, which currently averages no greater than 40%. The continuity goal is that patients are seen by their assigned provider 60% of the time.

*One of the challenges to increasing continuity in residency-training clinics, such as the RCRMC Family Care Clinic (FCC) is that residents have a very limited number of appointment slots since they may only be in clinic one or two half days per week. Additionally, clinic schedulers do not always have access to empanelment information.* To address these challenges at RCRMC, a continuity field will be added to the clinic provider productivity reports. There are also plans to transition to a centralized scheduling system where schedulers designated to the FCC would have access to the physicians' panel information. Lastly, RCRMC is considering appointing a panel coordinator who will be responsible for monitoring continuity and panel size.

### *Prompt Access to Care*

For DPHs in California, primary care demand often exceeds capacity. Expand Primary Care is a category 1 project detailed elsewhere in this report that focuses more on increasing clinic space, hours and the number of providers. This section will highlight other ways that DPHs have tackled the primary care access issue in DY7.

KMC and ARMC have implemented policies and systems to improve patient access to the medical home. KMC has redesigned the patient appointment phone line to enhance telephone access. They have also implemented a primary care dashboard with key efficiency and access measures (cycle time, TNA, no-show rate, access to urgent appointments) at the clinic level, which is updated monthly and distributed to primary care providers, staff, Physician Board of Governors, and the Quality Council. RCRMC has been testing changes around access using the Plan-Do-Study-Act (PDSA) cycle. The team tested changes to decrease their no-show rate. Letters were sent and phone calls were made to patients to remind them of their clinic appointments and to complete necessary labs and/or diagnostic tests. These changes reduced their no-show rate from 30% to less than 10%. The team is in the process of standardizing this work and distributing the responsibilities amongst its members.

*For systems without an EHR (like ARMC and KMC), tracking access and time to first appointment has been extremely challenging and time-consuming.* For ARMC, it is a manual process where the information is determined by looking up each individual patient in the system to determine the date

they were seen in the clinic. Similarly at KMC, the reminder process for new patients (phone calls or letters) is still manual. Moving forward, both systems would like to automate the process.

### *Lessons Learned*

There are several lessons learned in DY 7 from hospitals who undertook efforts to lay the foundation for transforming to patient centered medical homes.

As noted in Bodenheimer's article, the sequence of the work matters. One cannot work on population management or care coordination if it is not clear which patients one is responsible for. The first step is to empanel patients to primary care providers/care teams. It has taken several systems the full year to figure out who their patients are, determine appropriate panel sizes (some based on risk stratification), assign patients to medical homes, and have the ability to produce monthly provider panel reports. Not all systems have achieved this at the end of DY7—one DPH in particular is working more broadly with other community stakeholders on this so its efforts have been slower.

The ability to track and manage patients assigned to medical homes ideally requires a sophisticated practice management system (PMS), an ambulatory EHR and functional registry. Public hospital systems are generally not known for their state of the art IT systems with all the bells and whistles. Some are still working with antiquated PMSs, several are not slated to roll out their ambulatory EHR until 2013, whereas others are still reliant on the use of CDEMS (a free, heavily manual registry system from 10 years ago) or have nixed their original registry plans to move forward with something more robust in the next DY.

The transition to team based care must happen before a clinic can truly begin to function as a medical home. In order for every team member to be held accountable for the health of their panel of patients and work to the top of their license in the medical home model, most traditional clinics will need to change their staffing models and ratios and the job descriptions for each system. For public hospital systems that need to work through County Human Resources, this can be a protracted process. Furthermore, to really get staff to buy-in to the changes, it can be helpful to engage them in the process. One DPH noted that the significant scheduling and role changes required weekly meetings with clinic leadership and staff for nearly a year to fully develop and implement the medical home delivery model.

## 2.2 Expand Chronic Care Management Models

The purpose of this project is to implement, and build upon, proven, innovative models of chronic care management.

Ten DPHs (seven systems) completed 27 milestones related to expanding chronic care management models:

1. Alameda County Medical Center (ACMC)
2. Arrowhead Regional Medical Center (ARMC)
3. Los Angeles Department of Health Services (LADHS)
4. Riverside County Regional Medical Center (RCRMC)
5. Santa Clara Valley Medical Center (SCVMC)
6. University of California, Irvine Healthcare (UCI)
7. Ventura County Medical Center (VCMC)

### DY 7 Milestones Accomplished:

- ✓ Developed business plan to expand the care management model beyond pilot populations
- ✓ Conducted utilization and financial analysis of DY6 disease-specific pilots
- ✓ Implemented and trained staff in the Chronic Care Model
- ✓ Formalized multidisciplinary teams
- ✓ Designated/hired a chronic disease case manager to provide case management services
- ✓ Improved the percentage of patients with self-management goals
- ✓ Implemented a comprehensive risk-reduction program for disease specific populations
- ✓ Expanded and documented interaction types between patient and health care team beyond one-to-one visits to include group visits, telephone visits, and other interaction types
- ✓ Implemented an outpatient diabetic medication titration program
- ✓ Implemented a glycemic control program
- ✓ Created ongoing performance improvement program and coaching networks

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- The number of staff trained in the Chronic Care Model
- The percentage of patients with documented self-management goals
- Routine blood sugar testing levels
- The number of interactions between patients and the health care team beyond one-to-one visits

### Progress and Impact:

Many of the infrastructure achievements referenced above, including training staff in the chronic care model and formalizing multidisciplinary teams, will ultimately help with the improvement of several of the Category 3 population health metrics in future DYs. This project builds on the Category 1: Implement and Utilize Disease Management Registry Functionality project, which is an important tool for chronic

care management, and connects to the project, Expand Medical Homes, since chronic care management is a component of the patient-centered medical home.

### *Multi-Disciplinary Care Teams*

DPHs have taken a comprehensive approach to expanding chronic care management programs, and in DY 7 the formation of multidisciplinary teams, a critical component of successful implementation of the Chronic Care Model<sup>24</sup>, was particularly emphasized across the DPHs. For example, ARMC hired an RN as a chronic disease case manager. The case manager works with patients to assess disease control, adherence and self-management status, assists patients with navigation through the health care system, assists patients in setting self-management goals, and provides intense follow-up with patients on a routine basis. At VCMC a multidisciplinary team consisting of a physician, a mid-level practitioner, a certified diabetes educator, a dietician, and a licensed clinical social worker. As evidenced by the DPHs work in this area, teams can vary in composition and size.

### *Expand Roles of Non-Physician Staff*

Using a different approach, other DPHs sought to find innovative ways to expand and document interaction types between the patient and the health care team beyond one-to-one physician visits. Throughout Los Angeles County DPH clinics, examples include the use of non-physician visits for issues previously performed by physicians, such as increased use of RNs to perform specialty services. For example, at the Roybal Comprehensive Health Center, RNs provide dermatology phototherapy.

One DPH has prioritized health coaching, a critical aspect of motivating patients to engage in their health. UCI created a Diabetes Coached Care Program, designed to provide ongoing health coaching for patients enrolled in the program. Similarly, RCRMC sought to improve the percentage of patients who select a self-management goal. As part of the improvement effort, RCRMC created a clinic note template within the registry to ensure clarity regarding whether or not a patient has set a self-management goal.

### *Targeted Interventions*

At LACDHS, work in this project area is directly connected to work in other DSRIP projects. For example, LADHS implemented a comprehensive risk-reduction program for patients with diabetes that includes glycemic, blood pressure and lipid control in primary care. Inspired by compelling data from Kaiser Permanente's A-L-L program which showed that a combination of three inexpensive medications resulted in a 60-80% cardiovascular risk reduction among diabetic patients 50 and older, LADHS piloted an electronic prompt integrated into the Disease Management Registry to promote the use of the A-L-L drug classes (an aspirin, an ACE-I/ARB and a statin) in all patients with diabetes over age 50. LADHS achieved strong results from the comprehensive risk reduction for patients with diabetes in the disease-focused intervention: of 3,551 patients screened, 2,931 (83%) are on the full complement of 3 drug classes. A protocol was designed and tested in conjunction with nurses and doctors from LACDHS. After

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<sup>24</sup> For further information on the Care Model, please refer to Waiver II-WOO 193/9, Attachment Q: Categories 1-2, Appendix A: Evidence-Based Models, <http://www.dhcs.ca.gov/Documents/Attachment%20Q.pdf>, or [http://www.improvingchroniccare.org/index.php?p=The\\_Chronic\\_Care\\_Model&s=2](http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2) for detailed information about the Care Model.

several rapid Plan-Do-Study-Act cycles, the protocol was reviewed and approved by the interdisciplinary practices committee, comprised of nurse and doctor representation from across LA's Ambulatory Care Network.

The early success of the pilot had system-wide impact, as expansion of the program to the broader Patient-Centered-Medical Home population using i2i Tracks disease registry became a compelling goal. LADHS reports that the lessons learned from the pilot will be applied to the far greater number of patients who will be impacted by this important preventive measure among the more than 25,000 patients with diabetes empanelled to a LADHS primary care clinic. Ensuring that EHR templates are able to capture relevant care management data is an ongoing area of focus for DPHs working in this area.

Another avenue of chronic care management taken by DPHs in DY 7 has been to create specialized clinics for patients with targeted chronic conditions who are at higher risk for complications (in addition to providing chronic care management within the medical home/primary care setting). ACMC has developed a business plan to open the HOPE Center, dedicated to improving the care of ACMC's most complex and vulnerable patients by replacing episodic high-cost interventions with longitudinal intensive outpatient care. The center intends to recruit patients over the next two years through a tiered approach of case identification through data and physician referral, and plans to establish the care model using interdisciplinary teams, personal care plans, care coordination, behavioral health integration, open access to and continuity of care. In planning for the HOPE Center, ACMC engaged numerous stakeholder groups including doctors, planners, nurses, administrators, pharmacist, nutritionists, and representatives from ambulatory services, quality, inpatient service, psychiatry, and hospital administration.

### 2.3 Integrate Physical and Behavioral Health Care

The purpose of this project is to integrate the inter-related components of physical and behavioral health care so that care can be better coordinated and the patient can be treated as a whole person, potentially leading to better outcomes and experience of care.

Ten DPHs (seven systems) completed 18 milestones of integrating physical and behavioral health care:

1. Contra Costa Regional Medical Center (CCRMC)
2. Kern Medical Center (KMC)
3. Los Angeles Department of Health Services (LADHS)
4. Santa Clara Valley Medical Center (SCVMC)
5. San Francisco General Hospital (SFGH)
6. San Mateo Medical Center (SMMC)
7. Ventura County Medical Center (VCMC)

#### DY 7 Milestones Accomplished:

- ✓ Developed and implemented co-location models (i.e., behavioral health services offered in primary care settings and/or vice versa)
- ✓ Trained primary care clinicians on primary care management of behavioral health conditions
- ✓ Established, implemented and distributed guidelines for referring to behavioral health care
- ✓ Developed a tracking mechanism for referrals from PCPs to behavioral health professionals
- ✓ Implemented a behavioral health screening for patients with chronic disease
- ✓ Increased the number of primary care patients who are provided behavioral health services
- ✓ Implemented a telemedicine program to connect patients to psychiatry services
- ✓ Piloted the Four Quadrant Model

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- The number of co-located clinics/providers
- The number of staff trained
- Ongoing caseload and direct service capacity

#### Progress and Impact:

##### *Co-Location of Services*

Building on work that started in DY 6, DPHs laid the groundwork to integrate physical-behavioral health services in order to enhance access to, and coordination of, physical and behavioral health care services for patients that need both. One of the approaches taken by several DPHs is the co-location of behavioral health and primary care services. One example is CCRMC, where they integrated family medicine and behavioral health at one primary care clinic in collaboration with the Wright Institute, a fully accredited school of psychology. Through the collaboration, post-doctoral psychology students, under the supervision of Institute faculty, provide mental health services to patients being seen in the ambulatory care setting. The post-docs provide onsite services to patients being seen in family medicine,



as well as group classes in substance abuse treatment and stress management, in addition to individual interventions to address behavioral health issues such as depression, anxiety, trauma, and substance abuse. In DY 7, the program provided services to 159 patients in group sessions, 189 consultations with Primary Care Providers, and 262 individual intervention visits for a total of 601 discreet patients. As a result of the early success of the pilot program, CCRMC plans to expand the services to other primary care sites within the system. In another example of co-locating services, SFGH integrated behavioral health personnel (behaviorists and behaviorist assistants) in 7 of San Francisco County's Community Oriented Primary Care clinics.

KMC's achievement of co-locating two behavioral health providers in its Family Practice clinic posed challenges. The Family Practice clinic had to consider multiple factors when placing the behavioral health staff in Family Practice, including arranging for office space, adjusting schedules, patient flow, and proper documentation, which including testing interventions and making refinements when necessary to ensure optimization of the arrangement. For example, the behavioral staff was originally given offices in the back of the clinic, but staff found that this arrangement restricted easy conversation, interactions and opportunities for education with providers/residents. As a result, the behavioral health staff was moved to the middle of the clinic to allow for information conversations and meetings with the providers and residents. As a result, there was an increase in the number of patients they were able to perform brief interventions with.

An important and continuing undertaking has been training the staff in behavioral health screening and brief intervention suited for the fast-paced, primary care clinic setting. A large part of the training has focused on evidence-based interventions for the wide range of issues they are asked to address in primary care, including substance abuse, chronic pain, depression, disease self-management, anxiety and pediatric issues.

#### *Fostering Relationships*

DPHs have also focused significant effort on fostering relationships with key county mental health departments in an effort to ensure coordinate services for mutual patients. At KMC, a Physical and Behavioral Health Integration Committee was created, composed of county/community experts, key stakeholders, and primary care, mental health and substance abuse providers that convene with the goal of creating an opportunity for collaboration, integration, coordination and continuity of care for patients transitioning between both systems. As part of this collaboration, a tracking mechanism was developed to track all mental health referrals.

#### *Referrals*

In another example, Los Angeles County Department of Health Services (LACDHS) built upon efforts in DY 6 to ensure a smooth referral process to the Department of Mental Health and the means by which to track this information. When LACDHS identified that a formal mechanism for referring patients to mental health services was lacking, efforts were focused to develop a joint referral process that ensures that patients needing mental health services would be guided from the Department of Health Services to the Department of Mental Health. Through a process that involved the input of front line clinicians and staff, the referral form was modified, and processes were put in place to allow basic information to

be shared electronically with referring providers, including patients who decline services or are ineligible, affording them the opportunity to decide next steps in their patients care. The improved referral process has yielded early results; during DY 7, 94% of patients enrolled in Healthy Way LA (Los Angeles County Low Income Health Program) seeking an initial behavioral health visit received in less than 30 business days. The visits occurred at a co-located site or another Department of Mental Health venue, the latter being facilitated by a patient navigator.

### *Models/Approaches*

Several DPHs also worked to implement existing behavioral health models. At SCVMC, the County Mental Health Department and Ambulatory Care Services continued work on the integration of newly embedded psychiatrists and clinical social workers within several clinics. Key activities included formalizing a contract with the University of Washington to use the IMPACT model<sup>25</sup> as the framework around which to integrate behavioral health care, as well as identifying policies that define the primary care based behavioral health practice. This included refining the internal referral protocol between primary care and behavioral health practitioners, as well as between the clinics and the Mental Health Department specialty system, as other DPHs mentioned above also did. At SMMC, the Medical Psychiatry service launched a Four Quadrant<sup>26</sup> weight management pilot, entitled “Less is More”. The program uses a multi-disciplinary team approach to weight management by augmenting a traditional weight loss program with psychiatric support to ensure ongoing success. “Less is More” integrates therapy and physician supervision in patient meeting and education. Early promising results of the program demonstrate a drop in average weight of participants in the program of 26 pounds, from pre to post program implementation.

In an innovative approach to integration of behavioral health services, SFGH completed a year-long pilot project in telepsychiatry with its first target primary care clinic. In DY 7, 23 provider-to-provider consultations were completed. Early successes have shown a high level of satisfaction from primary care physicians who have participated in the program. SFGH reports that it has fully implemented telepsychiatry as a routine clinical service at this first pilot clinic, and has completed the infrastructure and device placements in the next clinic, as it works to spread the gains achieved from the pilot.

As in other DSRIP project areas, the need for seamless integration of charting billing systems became readily apparent for DPHs working in this project area. As these system enhancements occur, prompt

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<sup>25</sup> For more information on the IMPACT model, visit the Impact website at the University of Washington at <http://impact-uw.org/about/key.html>

<sup>26</sup> The Four Quadrant model is a model for the proposed integration of clinical mental health and behavioral health services. The emphasis is on the prevalence of concurrent disorders (e.g., depression and alcoholism). The Four Quadrant model is based on the 1998 consensus document on mental health and substance abuse/addiction integration service. The severity for each disorder is divided into Four Quadrants: (1) Low mental health – low substance abuse, served in primary care; (2) High mental health – low substance abuse, served in the mental health system by staff who have substance abuse competency; (3) Low mental health – high substance abuse, served in the substance abuse system by staff who have mental health competency; and (4) High mental health – high substance abuse, served by a fully integrated mental health and substance abuse program. The Four Quadrant model is not intended to be prescriptive about what happens in each quadrant, but to serve as a conceptual framework for collaborative planning in each local system.

and accurate documentation will facilitate further integration of primary care and behavioral health services, and lead to integrated, whole-person care.

## 2.4 Redesign Primary Care

The purpose of this project is to increase efficiency and redesign clinic visits to be oriented around the patient so that primary care access and the patient experience can be improved.

Seven DPHs achieved thirteen milestones associated with redesigning primary care delivery:

1. Arrowhead Regional Medical Center (ARMC)
2. Kern Medical Center (KMC)
3. Riverside County Regional Medical Center (RCRMC)
4. San Joaquin General Hospital (SJGH)
5. San Mateo Medical Center (SMMC)
6. University of California, Irvine Healthcare (UCI)
7. University of California San Diego Health System (UCSD)

### DY 7 Milestones Accomplished:

- ✓ Trained staff on methods for redesigning clinics to improve efficiency
- ✓ Implemented patient visit redesign
- ✓ Implemented a practice management system
- ✓ Implemented patient-centered scheduling
- ✓ Achieved at least a 15% or lower patient no-show rate for a minimum of 4 months
- ✓ Implemented a protocol/bundle for two chronic conditions
- ✓ Developed a system for protocol driven automatic patient reminders

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Implementation of patient-centered scheduling in primary care clinics
- Implementation of patient visit redesign in primary care clinics

### Progress and Impact:

DPHs reporting on this project have been making strides towards redesigning and improving their primary care practices. Building the necessary infrastructure to undertake this project, a resource and time-intensive effort, has been a key component of work accomplished in DY 7.

#### *Systems Implementation*

Two DPHs, ARMC and KMC, have implemented practice management systems to help streamline registration processes and enable more robust reporting on metrics such as percentage of appointment slots used, cycle times and no-show rates.

#### *Process Redesign*

Three DPHs, ARMC, RCRMC, and SJGH undertook process redesign work using consultants through SNI's Medical Home Collaborative. ARMC has engaged the Camden Group to introduce and lead multidisciplinary meetings and trainings in this area. At RCRMC, nursing and non-nursing staff, residents, attending physicians, and other clinicians who are actively involved in patient flow processes

participated in redesign sessions where the processes involved in a clinic visit were studied, discussed and potential areas for improvement were identified. One such improvement was the inclusion of a process for physician/patient care team huddles to occur on the day of the visit before morning and afternoon clinic sessions. To sustain the improvements made, RCRMC's clinic management will reinforce the improved process by continually monitoring various measures, including cycle time, clinic start times in the morning and afternoon, patient no-show rates, and third next available appointment, and plan to share the results of these measures to the clinic staff at during regular staff meetings. SJGH has worked with both a consultant as well as the Safety Net Institute to train staff on the development of care teams, rapid Plan-Do-Study-Act cycles and morning huddles between members of the care team. For example, one rapid cycle focused on ensuring proper techniques were used when measuring patients' blood pressure, thus resulting in improved practices among the clinical staff.

As part of the redesign process, several DPHs developed protocols designed to standardize work using evidence-based practices. The University of California Irvine Healthcare implemented a Diabetes Management Protocol, designed to ensure that all diabetic patients receive the complete care. The University of California San Diego Health System (UCSD) worked to develop a system for protocol driven automatic patient reminders, in which patients enrolled in UCSD's EHR will receive an electronic notification when preventive care is due including the timeframe and specific care needed.

## 2.5 Redesign to Improve Patient Experience

The purpose of this project is to improve how patients experience care and the patient's satisfaction with the care provided.

Seven DPHs completed 20 milestones related to improving patient experience:

1. Alameda County Medical Center (ACMC)
2. Contra Costa Regional Medical Center (CCRMC)
3. Natividad Medical Center (NMC)
4. Riverside County Regional Medical Center (RCRMC)
5. Santa Clara Valley Medical Center (SCMC)
6. San Mateo Medical Center (SMMC)
7. University of California Irvine Medical Center (UCI)

### DY 7 Milestones Accomplished:

- ✓ Established a steering committee comprised of organizational leaders, employees, and patients and families to oversee improvements in patient and employee experience
- ✓ Developed sub-committees to implement plans to improve
- ✓ Wrote and obtained approval for patient/family experience strategic plan
- ✓ Selected appropriate patient experience tools
- ✓ Adopted a model for improved nurse-to-patient communication and design curriculum and education plan
- ✓ Developed a staff education plan to integrate the patient experience into employee education and training
- ✓ Developed plans to roll out regular inquiries of patient experience
- ✓ Piloted a patient experience survey tool
- ✓ Expanded use of patient experience surveys in ambulatory and Emergency Department settings
- ✓ Established baseline patient satisfaction performance
- ✓ Conducted focus groups to understand the patient experience and reported findings
- ✓ Developed regular organizational displays of patient experience data and improvement activities and provided quarterly updates to employees
- ✓ Achieved compliance with updating patient chart information
- ✓ Conducted assessments of disparities in patient experience primary care and chronic disease management

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Improved HCAHPS and other survey scores
- Increased survey response rates
- Improved staff engagement/experience scores
- Frequency of patient/staff satisfaction data communicated to staff
- Number of staff that attended patient experience trainings

## Progress and Impact:

### *Leadership Engagement and Accountability*

Many DPHs started by strengthening leadership engagement and accountability for patient experience, beginning with CEOs who have actively championed improvement efforts in patient experience. *This level of senior staff engagement is important, because it directly addresses one of the significant challenges facing staff with DPHs: the reality of the many competing priorities that are in play.*

For example, NMC's CEO holds a quarterly "CEO Forum" in which he provides updates to employees on the organization's performance in patient experience and the efforts to improve. Several CEOs have also been vitally engaged in supporting their teams who participated in SNI's PExT Action Collaborative, a 15-month effort to achieve measurable improvement in patient experience in a demonstration unit or service line. For example, the CEO from SCVMC has been engaged every step of the way in the progress of their project to improve patient experience in a large primary care clinic (Moorpark). The CEO attended experience design sessions, received regular updates by the project manager and gave frequent input on the project, played an effective cheerleading role, and helped to eliminate barriers throughout the duration of the project.

Several executive leaders have been appointed Chief Experience Officers (CXO) or Director of Patient and Family Centered Care, assuming overall accountability for organizational patient experience performance. At SCVMC, all executive leaders formally committed to increasing their one-on-one visits with the patients, consistently model good communication skills, and communicate with staff to identify barriers to patient and family centered care. ACMC has appointed a new position, Director of Patient and Family Centered Care, who is responsible for developing and leading a comprehensive organizational portfolio of improvement initiatives in patient experience.

In addition to individual appointments and engagement, many DPHs formed high-level steering committees to oversee and guide patient experience improvement efforts. For example, the Patient Experience Steering Committee at RCRMC consists of senior hospital administrators, physicians, quality management staff, nursing staff and the hospital's patient advocate. All steering committees monitor the organization's data on patient experience and coordinate various improvement efforts. Some have engaged in developing a comprehensive organizational Patient/Family Experience Strategic Plan.

Leadership engagement is also helpful in addressing staff resistance to change. In several DPHs such as SCVMC, NMC, and SMMC, leadership engagement and role modeling, empowering the front-line staff to participate in generating and implementing experience design solutions, and ramping up staff recognition and rewards for positive change have all been critical steps to ensure the success of patient experience project work.

### *Improvement Model Adoption*

DPHs endeavored to adopt an organizational patient experience improvement model. For example, ACMC adopted AIDET Model by the Studer Group and rolled it out organization-wide to affect nurse-patient communication, paying close attention to HCAHPS scores as a trending measure over time. SCVMC adopted the model of Experience Mapping and Design for organization-wide use, after the

model was proven successful in a primary care clinic participating in SNI's Patient Experience Transformation Action Collaborative. NMC adopted a comprehensive healthcare customer service training model by Developmental Dimensions International (DDI), and via an internal "master trainer" and six internal facilitators the organization completed the 8-hour training of 654 employees by the end of DY-7. In follow-up, department managers have been trained to conduct quarterly Service Booster exercise with their staff.

#### *Patient Surveys*

As described within the summary for project 3.1 Patient/Care Give Experience, all DPHs rolled out an ambulatory care patient experience survey, CG-CAHPS, during DY 7. In addition, some have worked to roll out patient experience surveys in other new areas. For example, CCRMC and SMMC rolled out the patient experience of care survey in their Emergency Departments. Based on the survey results, SMMC developed plans to improve in two main areas: keeping the patient better informed, and reducing the patient length of stay in the ED.

Others have supplemented vendor-based surveys with separate internally-developed surveys to hone in on particular areas of improvement that were not otherwise being adequately captured. For example, RCRMC developed its own written survey tool to administrate in Family Care Clinic in addition to the CG-CAHPS survey, which at RCMRC is being implemented at the system-level of sampling. The clinic leaders wanted to use a survey tool that could provide more direct feedback on the patient's experience and identify areas for improvement specific to the clinic.

#### *Communication and Staff Engagement*

DPHs made various advances in communicating patient and staff experience data throughout their organizations. APMC, CCRMC and SCVMC use organizational internal website (Intranet) to post detailed reports by service line. SMMC trained its department managers on the use of their vendor's portal, which allows them direct and frequent monitoring of patient experience data, which they can then, in turn, disseminate to their staff in a timely manner. Among the more innovative displays of data dashboards and organizational improvement updates have been NMC's "Potty Postings," which were seen as effective and popular with the staff.

*Noting a potential "data overload" among the employees due to large amounts of data presented in a sometimes uncoordinated fashion, SCVMC is currently developing a patient experience dashboard in order to clearly and consistently communicate the data across the organization.* Recognizing the strong connection between staff experience and the experience of patients and their families, several DPHs (SCVMC, APMC, and SMMC) have rolled out employee experience and engagement surveys

One DPH stratified the patient experience data by race and ethnicity. UCI conducted a custom-made patient experience survey for their diabetes patients and stratified the findings by race and ethnicity, noting significant disparities in patient experience. Latino patients, for example, reported greater satisfaction with interpersonal care, but reported poorer overall quality of care, and greater diabetes management burden than non-Hispanic white patients.

#### *Staff and Family Engagement*



Finally, DPHs are aware that engaging patient and families in improvement work is one of the most important strategies to ensure that any action to improve is on target from the perspective of patients and their families, and ultimately results in the survey score increase. SCVMC is among the DPHs that have had initial successes in this regard. Two patients with extensive history at the Moorpark Clinic were invited and joined the two PExT experience design sessions. Their involvement affected greater buy-in and commitment from the leaders and staff, and they provided invaluable input about the improvement needs in the clinic.

#### *Improvement Efforts*

In DY7 most DPHs focused on building the foundational elements for patient experience improvement work, such as those described above. However, several went ahead and undertook major organizational initiatives focused on improving specific aspects of patient care and operations that were found from their data to have major impacts on how patients and their families experience care.

For example, SCVMC set out to improve experience of patients around “first patient contact,” “noise reduction,” and “staff recognition” organization-wide. Each of these improvements was operationalized through a series of steps/tactics. Among the tactics to improve the “first patient contact” was a video contest in which departments were asked to make videos demonstrating best customer service practices. The finished videos were shown to various internal staff audiences and “top ten” videos were posted on the Intranet for staff viewing. One video was awarded the “People’s Choice” award. This was an effective way to engage staff from the ground up in messaging and reinforcing positive customer service practices for the organization.

#### *Challenges and Lessons Learned*

For some DPHs, the improvement action has not been immediately reflected in the increase of patient experience survey scores. There are many potential reasons for this, including long time lapses between the patient service dates and the arrival of the survey data. For example, SCVMC noted that their HCAHPS scores are coming back to them with a 9-18 month delay. They are working with their survey vendor to reduce this delay as much as possible, but they are also aware that large-scale CAHPS surveys are best used for monitoring of progress at regular intervals, e.g., quarterly, and have limited utility in quality improvement, where quicker data turn-around is required to inform the ongoing processes of improvement. As a solution, DPHs such as SCVMC and RCRMC utilized additional, alternative methods of inquiry more conducive to quality improvement such as internal, custom-made surveys, patient interviews, and focus groups.

## 2.6 Implement/Expand Care Transitions Programs

The purpose of this project is to better coordinate care from the hospital to the ambulatory care setting, to ensure that patients' conditions are managed so that they stay healthy and out of the hospital.

Six DPHs (five systems) completed 12 milestones related to implementing/expanding care transitions programs:

1. Alameda County Medical Center (ACMC)
2. University of California Davis Medical Center (UCD)
3. University of California Los Angeles Medical Center (UCLA)
4. University of California San Diego Health System (UCSD)
5. University of California San Francisco Medical System (UCSF)

### DY 7 Milestones Accomplished:

- ✓ Planned the construction of tethered registry to EHR to identify and manage high risk patients
- ✓ Expanded ED case management to seven days per week
- ✓ Demonstrated the integration of information systems by stratifying patient demographic data by process, clinical, and/or quality data
- ✓ Developed a staffing and implementation plan to accomplish the goals/objectives of the care transitions program
- ✓ Established a baseline percent of medical surgical inpatients discharged to home setting assigned to a medical home or PCP
- ✓ Improved discharge summary timelines
- ✓ Piloted care transitions processes, including post-discharge phone based care management, and patient/family communication and interdisciplinary rounds
- ✓ Created patient stratification systems designed to identify patients requiring care management, and to accommodate a quicker allocation of resources to those patients with high-risk health care needs
- ✓ Implement standard care transition process in one additional patient population

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- 30-day readmission rates
- Improved post-discharge follow-up attendance
- The number of patients with a PCP/medical home assignment at the time of discharge
- The number of patients with discharge summaries completed within 48 hours of discharge
- Expanded case management services in the ED

### Progress and Impact:

There are a variety of models and methods in use across California's DPHs to implement or expand care transitions programs. As DPHs work to create strong care transition programs throughout their systems, several approaches have been taken to test, refine and improve upon specific interventions, in the spirit of Plan Do Study Act learning cycles.

### *Redesign of Staff Roles*

For example, ACMC piloted a program where patients receive care from a transitional care pharmacist. In this role, the pharmacist conducts medication reconciliation, while also providing medication education to high-risk patients, their families and caregivers. When compared to the control group, ACMC found that patients receiving care from the transitional care pharmacist had fewer readmissions at 30-days post discharge as well as improved post-discharge follow-up attendance. As a result, funding for a transitional care pharmacist position was approved through ACMC's DSRIP Oversight Committee.

In another example, UCSD implemented a pilot program to improve care transitions on two hospital wards. As part of the pilot, UCSDHS defined the role of the RN Discharge Advocate (RNDCA) to focus on providing more intensive education, patient preparation, and care coordination for high-risk patients. Two RNDCA's were selected to pilot interventions on four nursing wards; post pilot data reveals a reduction in readmission rates in the pilot units compared to DY6 baseline data. UCSDHS used the insights gleaned from the pilot to develop UCSDHS Transitions of Care protocols, and plans to share the lessons learned through participation three projects: (1) Partnership for Patients Readmissions collaborative through the University Health Consortium, (2) partnering in the Community-based Care Transitions Program (CCTP), and (3) being an active member of the SNF/Hospital Readmission Forum.

DPHs are using insights from this work to inform the scaling up of other projects. An example is observed at UCSF where the development of a staffing and implementation plan for the care transitions program has led to an evaluation of UCSFMS' admission-to-discharge process with the ultimate goal of standardizing the processes of all providers during admission and discharge.

### *Other Performance Improvement Efforts*

DPHs have indicated the importance of data in testing these various implementation methods. At the UCLA examination of early data showed that a substantial number of patients in the test population were missed by requiring that only patients with a principle diagnosis of heart failure on admission were included in the implementation group. As a result, the UCLA expanded the program inclusion criteria to include all patients who are actively being treated for heart failure, and have used this experience to scale up their approach for other chronic diseases, such as chronic obstructive pulmonary disease.

In working on care transitions programs, DPHs engaged front-line clinicians and staff. For example, at UCSF, service line physicians, Patient Care Managers, Case Managers, Pharmacists, and staff nurses are involved in the implementation of the work, in analyzing the data, and in designing changes to the process. While patients are not yet incorporated into the work, a future goal is to establish a patient advisory council.

## 2.7 Conduct Medication Management

The purpose of this project is to manage medications so that patients receive the right medications at the right time across the DPH system in order to reduce medication errors and adverse effects from medication use.

Five DPHs (four systems) completed 10 milestones related to medication management in DY 7:

1. Contra Costa Regional Medical Center (CCRMC)
2. University of California Davis Medical Center (UCD)
3. University of California Los Angeles Medical Center (UCLA)
4. University of California San Diego Health System (UCSD)

### DY 7 Milestones Accomplished:

- ✓ Piloted a medication refill process in the ambulatory care setting
- ✓ Completed planning for implementation of bedside bar-code scanning of medications
- ✓ Implemented the use of smart infusion pumps
- ✓ Implemented safeguards in the EHR to ensure compliance with criteria for safe use of Black Box Warning medications
- ✓ Implemented services to improve continuity of medication use for high risk populations

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Documentation of a program, including people, processes and technologies
- The availability of written medication plans
- Implementation of smart infusion pumps

### Progress and Impact:

#### *Care Coordination*

Overall, DPHs worked on this project both in the inpatient and outpatient settings, with some focus on coordinating medication management between the two settings. One example is the UCSD's development of a plan to provide medication reconciliation (the process of reviewing the patient's complete medication regimen at the time of admission, transfer, and discharge and comparing it with the regimen being considered for the new setting of care<sup>27</sup>) as part of the transition from acute care to ambulatory care. Included in the plan is the inclusion of medication reconciliation upon admission and in preparation for discharge. Patients receive medication counseling and patient friendly medication tools prior to discharge, as well as phone calls within 72 hours post discharge and/or during face to face visits within 7 days.

#### *Verification*

On the inpatient side, UCD's Barcode Scanning Project Team gathered data from a pilot project conducted in DY 6 and developed a plan to establish hospital-wide electronic verification of the five

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<sup>27</sup> Agency for Healthcare Research and Quality, Patient Safety Network, [www.psnet.ahrq.gov](http://www.psnet.ahrq.gov)

medication rights – right patient, right medication, right dose, right route, and right time. To build upon early successes in DY 6 to initiate smart pumps for patient-controlled analgesia (PCA), in DY 7, a two-step training process was initiated for PCA pumps, including a mandatory online training that was required for entrance to the hands-on training. UCD reports that the smart pump capabilities, specifically the drug library, have reduced medication errors. Scaling up the project with extensive training of registered nurses who work in the inpatient care units will commence in the first quarter of DY 8.

### *Staff Engagement*

There were also innovative approaches among the DPHs to test and study new methods of conducting medication management. One example is CCRMC who took an innovative approach to monitoring patients with impaired kidney function through the use of clinical pharmacists. In this program, clinical pharmacists were trained to manage patients receiving a Erythropoietin Stimulating Agent (ESA) through the use of standardized clinical protocol. The pharmacists are charged with ordering appropriate labs and effectively communicating complex information to both patients and clinic nurses. They also schedule patients for their next injection appointment. As of CCRMC's submission of the DY 7 report, there have been no negative clinical events since the program began.

Another example of innovation was seen at UCLA who piloted a medication management program centered on use of clinical pharmacists, through a PharmD consult. As part of the process of developing the program, through the use of rapid Plan-Do-Study-Act cycles, it was discovered that each participating clinic had a different format outlining the medications that patients were currently prescribed and how and when to take them, and therefore a lack of standardization across the system. The team working on this project created a standardized medication booklet that was patient friendly, comprehensive, and easily stored because it was wallet-sized. Patients were encouraged to fill out the medication booklet with the help of the pharmacist and to keep it with them at all times. In the spirit of continuous improvement, the team is collecting feedback regarding the booklet, and will make enhancements to it accordingly.

## 2.8. Increase Specialty Care Access/Redesign Referral Process

The purpose of this project is to increase access to specialty care through increased efficiencies, increased capacity and investment in systems so that patients in need of specialty care can receive that care in a timely manner.

Four DPHs completed ten milestones related to increasing specialty care access and redesigning referral processes.

1. Riverside County Regional Medical Center (RCRMC)
2. San Francisco General Hospital (SFGH)
3. San Mateo Medical Center (SMMC)
4. University of California San Francisco Medical System (UCSF)

### DY 7 Milestones Accomplished:

- ✓ Develop, train on and implement standardized Referral processes and Guidelines and train staff and physicians on new guidelines
  - Create a plan to redesign the specialty referral process that will address: 1) development of standardized criteria, 2) preliminary work-up/assessment guidelines, and 3) prioritization of specialty care referrals.
  - Train 50 staff in Riverside County-based primary and specialty clinics, plus staff in referring clinics on new referral guidelines
- ✓ Implement electronic referral process
  - Develop the technical capabilities to facilitate electronic referrals.
  - Utilize electronic referral to measure the wait time for specialty care
  - At least 65% of all eReferral consultation request submissions are reviewed and responded to by a specialist within 3 business days of submission
  - Expand e-referrals to include bidirectional communication such that 50% of specialty referrals originating from a SMMC PCP will be made utilizing bidirectional electronic referral systems
- ✓ Pilot telemedicine real-time video consultation in 1 specialty service line and image store-and-forward telemedicine in 1 specialty service line

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Number of referring primary care physicians educated on the new referral guidelines
- Number of staff in primary and specialty clinics, as well as in referring clinics, trained on new referral guidelines
- Plan to redesign the specialty referral process completed
- Implementation of Pilot telemedicine real-time video consultation in 1 specialty service line and image store-and-forward telemedicine in 1 specialty service line
- Percent of specialty care referrals that were seen within 30 days that could be documented via electronic referral process.

- Percent of eReferral consultation request submissions that are reviewed and responded to by a specialist within 3 business days of submission.
- Number of specialty clinics brought online on eReferral
- Percent of specialty referrals originating from a SMMC PCP will be made utilizing bidirectional electronic referral systems
- Development of technical capabilities to facilitate electronic referrals/consults completed.
- Planning process to implement electronic referrals completed and plan submitted
- Standardized referral evaluation and processing guidelines for four specialty clinics developed and implemented.

#### Progress and Impact:

As DPHs work to ensure appropriate and timely access to specialty care, several approaches have been taken to analyze data, determine root causes for limited access, identify inefficiencies, and test, refine and improve upon specific interventions. The interventions include telemedicine, e-consults, and e-referrals.

#### *Use of Telemedicine*

SFGH's project to use telemedicine to increase access to pulmonary services began with an analysis of the reasons that a prior program to increase the use of spirometry to evaluate patients with respiratory symptoms did not sustain. Their analysis revealed issues such as a lack of testing quality control, decline of testing coach skills, lack of specialty-level test interpretation, and absence of integrated results reporting. This DPH designed the new San Francisco Community Primary Care Spirometry Program to ameliorate these barriers by providing: a comprehensive spirometry training program, store-and-forward spirometric flow-volume and volume-time loops and data, test screening against American Thoracic Society (ATS) acceptability and reproducibility criteria, direct coaching feedback, and full pulmonary interpretation with posting of results.

While the program is in its development, SFGH is already seeing results for patients. Since implementing the Program, SFGH's Pulmonary Function Testing laboratory experienced a 42% decrease in average wait times.

*Challenges & Lessons Learned* As UCSF is implementing its e-consult program, they are using the data gathered from their two pilot specialties to determine workflow issues or usage errors with regard to the smart-phrases and e-Consults. These will redefine how they design the smart-phrases/e-Consults in the future. Staff are pilot-testing smart-phrases and e-Consults before rolling the system out on a larger scale.

In the transition from paper to electronic referral systems, some DPHs are encountering challenges in accurately documenting specialty care referrals. For example, as SMMC reviewed its data on specialty care referrals, they could only document that 13 percent were seen within 30 days. Of the remaining 87 percent, SMMC lacked the systems (paper and electronic) necessary to capture the time of arrival. Since most of the paper referrals were from the ED, it is likely that the rest of the patients were seen within 30 days, but not yet documentable. This problem will be resolved as the system becomes fully electronic.

Once a DPH goes fully electronic, challenges remain to integrate specialty care referrals with new ambulatory EHRs. For SMMC, in DY 7 the ambulatory care electronic medical record system does not communicate with the warehouse system. The short-term workaround is to contract for reporting assistance and data extractions from the electronic medical record vendor to obtain reliable, reportable data for the electronic access to specialty care milestones.



## 2.9 Apply Process Improvement Methodology to Improve Quality / Efficiency

The purpose of this project to implement continuous performance improvement in order to improve efficiencies, improve quality, improve experience, reduce inefficiencies, and eliminate waste and redundancies.

Three DPHs achieved seven milestones in DY 7 associated with applying process improvement methodologies:

1. Natividad Medical Center (NMC)
2. San Mateo Medical Center (SMMC)
3. University of California Davis Medical Center (UCD)

### DY 7 Milestones Accomplished:

- ✓ Utilized the Model for Improvement framework
- ✓ Trained staff in improvement methodologies
- ✓ Implemented LEAN performance events
- ✓ Developed early warning systems within the Electronic Medical Record (EHR)

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Train staff in process improvement
- Implement a Lean/Kaizen improvement rapid improvement project
- Development of early warning systems within EHR to act upon identified problems

### Progress and Impact:

Each of the three DPHs undertaking this project implemented a different performance improvement approach to accelerate delivery system transformation. NMC has adopted the Model for Improvement, SMMC is embedding Lean as its performance improvement and management methodology, and UCDCM is utilizing Lean Six Sigma.

They have all achieved their milestones, which relate to training significant numbers of staff, clinicians and executives on their chosen performance improvement methodology, and applying improvement methodologies to implementing targeted improvement events. The DPHs achieved significant results related to their training goals, necessary to lay the groundwork for system-wide improvement, as well as early delivery system changes and clinical outcomes as a result of targeted improvement events.

Also key to fully adopting a unifying approach to performance improvement is centralizing the support for that adoption. The Lean work at SMMC is supported by a leader in their Kaizen Promotion Office (KPO), a half-time Nurse Educator, and the close involvement of the Executive Team. The Kaizen Promotion Office is supported by a two-year consulting arrangement with Rona Consulting Group, which began on July 1, 2011. The goal of this partnership is to execute a full Lean transformation of SMMC; to date, the team has collaboratively developed a two-year transformation roadmap and successfully implemented 100% of the year one planned activities.

### *Staff Training*

Over 283 executives, administrators, managers, medical staff leaders, supervisors and charge nurses across the 3 DPHS have completed training in one of the three performance improvement methodologies. The level of intensity and length of trainings varied. One DPH required all executives to participate in three waves of intensive, in-person 7-day trainings on Lean spread over 4-6 months. Another DPH required over 170 staff and leaders to participate in four 2-hour courses, a mix of in-person and online videos, on the Model for Improvement. All DPH's utilized a train-the-trainer approach to spread the learning most efficiently and ensure spread of the content across the institutions and over time.

### *Early Results in Delivery System Improvement and Clinical Outcomes*

Using the Model for Improvement, NMC has already achieved breakthrough results in reducing ventilator-associated pneumonia (VAP), focusing on maintaining the head-of-the-bed at >30 degrees. Using baseline data from 2009 of 5 infections and 12-month rolling rate of 10.5 areas for improvement were identified and addressed using the Model for Improvement Framework. By DY 7, NMC had improved their rate to 0 infections, and a rolling rate of 0, —which meant going 430 days without an infection since first starting this improvement work.

SMMC implemented four Lean Kaizen events in inpatient psychiatry, with one goal being reduction of non-acute days in the Psychiatric Inpatient Unit. A significant result of one of the kaizen events was the creation of an online patient treatment tool, a workstation on wheels, which is used widely today. Patients, especially the shy and reluctant, have responded so well that the tool is being incorporated into the electronic health record, and SMMC is beginning to see reduction in inpatient psychiatry days.

Also at SMMC, the Pharmacy team executed its Kaizen workshop over a weekend, so as not to interfere with patients waiting for prescriptions. The team conducted a Lean process called “5 – S” and redesigned the workspace to be much more well-organized. The changes implemented have already cut in half the wait time for patients filling a prescription.

A key result thus far for UCDMC's application of Lean Six Sigma is the design of an electronic screening alert for the identification and management of severe sepsis/septic shock to aid in early identification of at-risk patients based on a “trigger” in the patient's documented physiological findings and/or lab results.

### *Challenges & Lessons Learned:*

A critical challenge for DPHs is setting the pace at which these organizations can successfully launch, monitor and sustain gains from improvement events and implement the resultant work plans. A related challenge is establishing the right pace for the training schedule. For SMMC, with a sizable pool of trained leaders, they have more people interested in training than available Kaizen participant slots, in order to keep the right mix of staff participating in the event. SMMC's leaders regard this as a good problem; the broad enthusiasm in the organization and the burgeoning cadre of trained leaders only suggests that SMMC will continue its transformative work to become a LEAN healthcare provider.

DPHs in the process of adopting a uniform approach to performance improvement have learned that this effort facilitates a culture of improvement, one improvement event at a time. As stated by SMMC's leadership: "Improvement isn't a project, it's a process. Doing a high-quality job is more important than massively scaling without confidence that the work is having sustainable impact. LEAN empowers the staff, better ideas flow, and buy-in is built-in."

DPHs are also learning that patients are essential partners in any improvement process. By inviting and supporting patients and family members to participate on Lean improvement teams, SMMC has tapped into a critical source of knowledge, and has seen that staff, clinicians and executives engage in the improvement work in a much deeper way and have more commitment to seeing the change through to system-wide transformation.

## 2.10 Establish / Expand a Patient Care Navigation Program

The purpose of this project is to help and support patients who are especially in need of coordinated care “navigate through the continuum of health care services so that patients can receive coordinated, timely services when needed with smooth transitions between health care settings.”<sup>28</sup>

Two DPHs completed six milestones related to establishing and/or expanding a patient care navigation program:

1. Kern Medical Center (KMC)
2. University of California Irvine Healthcare (UCI)

### DY 6 Milestones Accomplished:

- ✓ Expand program to include ED Navigator, who educates patients on importance of primary care; connects patients to a new Primary Care Clinic and/or assists patient in getting following appointment with established PCP.
- ✓ Train coaches in Care Navigation module
- ✓ Develop Care Navigation training material for coaches
- ✓ Increase number of referrals/patients served. Create database to track participants. Create patient satisfaction survey. Identify process improvement initiatives as a result of implementation of program.

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Number of patients without a PCP who received education about a PCP in the ED
- Number of patients referred for financial screening and/or KMCHP application started in ED
- To evaluate the impact of program on IP/ER utilization: Quarterly, request list of all ER visits for that quarter and flag patients who have received some level of EDCC intervention. Compare rates of: ER re-utilization, ER re-use within 72 hours of last visit, IP admissions.
- Number of coaches trained
- Care Navigation training materials for coaches developed, made available and used
- Increase number of patients served by the Patient Care Navigation program “Care Connect”

### Progress and Impact:

UCI’s patient navigation program focused on helping diabetes and heart failure patients, while KMC’s focused on emergency department (ED) care.

UCI has identified and trained 13 coaches to work with diabetes and heart failure patients. The coaches, who represent a mix of paid staff and volunteers, have been educated on disease-specific topics, as well as coaching techniques. Patient enrollment in the Patient Care Navigation program “Care Connect” has increased 192% between Jan 2011 (n=188) and Jan 2012 (n=550). Patient tracking databases have been

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<sup>28</sup> Please refer to Waiver II-WOO 193/9, Attachment Q: Categories 1-2, Section V, at <http://www.dhcs.ca.gov/Documents/Attachment%20Q.pdf>.

created and are maintained. Patient satisfaction surveys for Care Connect were created and administered, and 93% of the enrolled patients responded that the program “exceeded their expectations.” Finally, targeted improvement initiatives undertaken include:

- Transfer of records, test, and lab results
- Pathology reports prior to patient ambulatory visits
- Expedited appointment scheduling and targeted service training of key staff and units

KMC developed the ED Navigator Program and hired the ED Care Coordinator in December 2011 to help ED patients, particularly those seen for non-urgent conditions, better navigate the health care system. The ED Care Coordinator educates patients on the importance of primary care and actively works with primary care clinics to connect the patients to either new – or their existing – PCPs . Looking forward, KMC has not yet provided any data, but has outlined a comprehensive battery of metrics by which the success of this program will be evaluated (see “Metrics” above.) As data becomes available, KMC will undertake a rigorous evaluation of multiple program aspects, including chart reviews, stakeholder interviews and patient surveys to determine the effectiveness of these ED interventions.

## 2.11 Improve Patient Flow in the Emergency Department/ Rapid Medical Evaluation

The purpose of this project is to reduce wait times in the ED so that patients in need of care are triaged in a timely manner, receive care in a timely manner and that fewer patients leave the ED without being seen.

Two DPHs completed four milestones in DY 7 related to improving patient flow in the ED:

1. Alameda County Medical Center (ACMC)
2. University of California San Diego Health System (UCSD)

### DY 7 Milestones Accomplished:

- ✓ Identified and implemented improvement interventions and monitored and reported their impact on flow
- ✓ Implemented a health information exchange link with pre-hospital care providers to make patient information available prior to patient arrival
- ✓ Decreased the percent of patients who left the ER without being seen
- ✓ Reduced overall ED wait time for admitted patients

### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Overall ED wait time for admitted patients over baseline
- Percentage of patients who leave the ER without being seen

### Progress and Impact:

#### *Targeted Interventions*

ACMC applied process improvement methodologies to conduct four improvement interventions, and to use the findings from these interventions to scale up other efforts system-wide. ACMC's interventions focused on triage, registration and efficient use of limited hospital beds.

- One such project was replacing a registered clerk with a nurse to serve as the patient's first point of contact in the Emergency Department (ED). The nurse conducts a brief assessment of the patient to identify acuity and then directs them to the appropriate area of care.
- A second improvement project, Mini-Registration, aimed at decreasing the average length of ED stay for all patients by reducing the time it takes for them to be entered into the ED's database and assigned to a provider. With mini-registration, patients entering the ED are immediately seen by the Intake Nurse and triaged into either a Fast Track, or, for low acuity patients, a Non-Fast Track.
- In yet another project, with the aim to make more efficient and timely use of available ED beds and reduce wait time for patients, the SWAP project distinguishes patients between level 3 "horizontal" patients (need to be lying down) and level 3 "vertical" patients (do not need to be lying down). Vertical patients, who are typically waiting for lab results, or other services, that do

not require them to be in a bed, can be moved out of an ED bed and into a designated SWAP waiting room so that the bed can then be used by another patient. When the patient needs to be seen by a physician again, they are moved back into a bed, or into a SWAP consultation room if only a brief assessment, education or follow-up is needed.

As a result of these improved processes, ACMC reports a decrease in the patient “walk away” rate from 9% to 5%.

#### *Care Coordination*

At UCSD, an interdisciplinary ED flow committee has focused on establishing and implementing action plans aimed at reducing obstacles for admitted patients. Interventions included automation and bar coding of lab specimens to reduce turnaround times, as well as the immediate transport of admitted patients to available inpatient beds. In one such project, the use of template admission holding orders by ED physicians was made possible through information technology improvements that sought to reduce the obstacles that delayed admissions and increased boarding of admitted patients in the ED. Additionally, the transition of the ED’s EHR to be seamless with the inpatient EHR allowed for the development of template admission orders that could be initiated by either the ED or admitting service physicians.

In another example, UCSD partnered with the city Emergency Medical System to implement electronic transmission of electrocardiograms (ECG) from pre hospital care providers to the ED. The technology facilitates ‘door-to-balloon’ times (interventional cardiac catheterization) for heart attack patients by allowing Emergency Medicine physicians early access to diagnostic clinical information prior to patient arrival. In early results, in DY 7 UCSD achieved ‘door-to-balloon’ times within 90 minutes in 95% of cases.

## 2.12 Use Palliative Care Programs

The purpose of this project is to promote use of palliative care programs so that patients with terminal illnesses receive dignified, and culturally appropriate, end-of-life care in a manner that prioritizes pain control, social and spiritual care, and patient/family preferences.

Two DPHs completed four milestones toward using palliative care programs in DY 7:

1. University of California San Diego Health System (UCSD)
2. Ventura County Medical Center (VCMC)

### DY 7 Milestones Accomplished:

- ✓ Establish the baseline of patients who died in the hospital and received a palliative care consult
- ✓ Increase the number of palliative care consults by 25%
- ✓ Develop a plan to identify patients who will have the option of being enrolled in the palliative care program
- ✓ Implement a palliative care program and develop consultative service so that palliative care consultation will be available for inpatients. This includes education to the resident physicians

The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Increase in the number of palliative care consults over baseline
- Implementation/expansion of a palliative care program

### Progress and Impact:

Over the past 4 years, through a collaboration between SNI and the California Health Care Foundation, palliative care has been embraced by California public hospitals on an unprecedented scale. Currently 100% of all public hospitals have functioning palliative care services to offer their patients, compared to 53% among other California hospitals<sup>29</sup>.

The two DPHs that had DY7 milestones in this area have different starting places. UCSD has a well-established palliative care program, which is expanding in order to respond to the increasing patient needs. VCMC is in the beginning stages of the path, having recently assembled the team and began offering palliative care services.

UCSD established a baseline of 24% of patients who die in the hospital received a palliative care consult. They attribute this rate to the implementation of ICU triggers, which automatically lead to a palliative care consult, as well as continuous staff education regarding the benefits and purpose of palliative care. UCSD exceeded its second palliative care milestone to increase the number of consults by 25%. In DY 7 they achieved and exceeded that goal. In fact, the consults increased by 55% over DY 6.

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<sup>29</sup> "When Compassion Is the Cure", CHCF report, 2012



VCMC developed a pathway to identify and refer the patients who could benefit from the palliative care program, and began offering services in August 2011. After the first nine months of service, the team developed and administered surveys to assess the success of the program from the perspective of its patients/family members, and the referring colleagues. Both surveys revealed significant praise for the palliative care program (e.g., 95% of the patients/family members and 100% of the referring physicians indicated that they “would recommend/use palliative services again”), along with some ideas identified for improvement such as expanding hours of service and providing enhanced staff education on palliative care.

### *Staff Training*

In order to achieve the growth they did in palliative consults, the UCSD team added multidisciplinary staff. One issue that has surfaced is a general shortage of healthcare providers trained in palliative care, and UCSD is currently undertaking concerted efforts to attract trained specialists to join their team.

As part VCMC’s educational/training effort, the team developed and rolled out a comprehensive palliative care educational curriculum for resident physicians in the Family Residency program. This training, the first of several, is intended to develop the appropriate infrastructure to make palliative care services available for patients throughout VCMC. In DY 8, VCMC is planning to further develop consult services so that palliative care consultation will be available for outpatients, which will include education to staff physicians and community providers. The metric that will be used to assess progress is documentation of a training program for primary care and specialty physicians as well as community providers.

### *Lessons Learned*

Having the appropriate staffing resources in place to implement the palliative care program is important. UCSD attributed their ability to achieve growth in the number of palliative care consults to aggressive resource investments, including increasing physician coverage and nurse practitioner time at both the inpatient service and outpatient clinics.

### 2.13 Implement Real-Time Hospital-Acquired Infections (HAIs) System

The purpose of this project is to pilot a first-of-its-kind technology that can identify and prompt interventions for HAIs.

Two DPHs completed four milestones related to implementing a real-time HAI system:

1. University of California Irvine Healthcare (UCI)
2. University of California San Diego Health System (UCSD)

#### DY 7 Milestones Accomplished:

- ✓ Development of daily nursing prompts to identify presence of each medical device
- ✓ Implemented prompts for prevention and risk identification necessity to CLIP and daily line necessity
- ✓ Developed an electronic system for real-time education on HAI prevention to clinicians
- ✓ Expanded real-time intervention systems to identify and track patients at high risk for HAIs in the electronic medical record

The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Electronic data entry fields for nursing staff
- Percent of patients detected

#### Progress and Impact:

##### *Use of Systems to Track Performance*

This project is being piloted by DPHs with electronic medical records already in place, and utilizes that technology to track and target patients at-risk of HAIs. At UCI, the electronic nursing acuity system was revised to include prompts for the presence of medical devices, including: central lines, foley catheters, and ventilators. The prompts are intended to aid in risk identification and ultimately prevent HAIs. Early results at UCI show a documentation rate of 83%.

##### *EHR Enhancements*

At UCSD, several enhancements were made to the EHR in DY 7. A prompt was built into the EHR directing providers to evaluate patients for urinary catheter necessity or discontinuation on a more frequent basis. Before fully implementing the prompt, several small test of change were conducted, based on input from the front line staff, the Infection Control Committee, Patient Safety Committee, Critical Care Committee, and the Quality Council of the Medical Staff. Based on feedback received, changes were made, followed by implementation and education using screen shots and educational sessions to the necessary staff.

UCSD also enhanced the EHR to include a banner visible on each patient's medical record, containing an embedded link to the Infection Control website where education and important information for specific organisms, as well as the infection control policies and procedures are available at all times. Upon admission, or at the time of an outpatient visit, the attending physician must address all identified

precautions before room assignment can occur. Given these enhancements, UCSD has expanded its HAI system from its original pilot site to all ambulatory care and inpatient settings, including the Intensive Care Unit, non-Intensive Care Units and specialty care areas.

## 2.14 Redesign for Cost Containment

The purpose of this project is to develop the capability to test methodologies for measuring cost containment that may be applied to other projects or efforts so that the ability to measure the efficacy of these initiatives is in place.

Santa Clara Valley Medical Center (SCVMC) completed three milestones in DY 7 pertaining to redesigning for cost containment.

### DY 7 Milestones Accomplished:

- ✓ Establish a baseline for cost
- ✓ Develop/identify a cost accounting methodology to quantify the financial impact of quality and efficiency improvement interventions

### Metrics:

- Implement a cost/account system to measure intervention impacts
- Established baseline for cost

### Progress and Impact:

#### *Developing Relevant Metrics*

SCVMC chose to use DY 6 as the baseline year, and conducted work to develop baseline cost information through the second half of DY 7. SCVMC also conducted work to develop the metrics by which the financial impact of quality and efficiency improvement interventions will be measured.

Metrics will be focused on diabetes care, the top 20 MS-DRGs (Diagnosis-Related Group), and measures associated with Category 3 and 4 projects. Specific metrics were developed in conjunction with the leads from Santa Clara's inpatient safety teams.

SCVMC also continued implementation of a cost accounting system to measure intervention impacts. To do so, a cost accounting system was designed in the first half of DY 7, and implementation of the system began in the second half of the year. Early tasks included putting in place the appropriate technology infrastructure to complete the work in future DYs. This also included training the appropriate staff on cost accounting concepts.

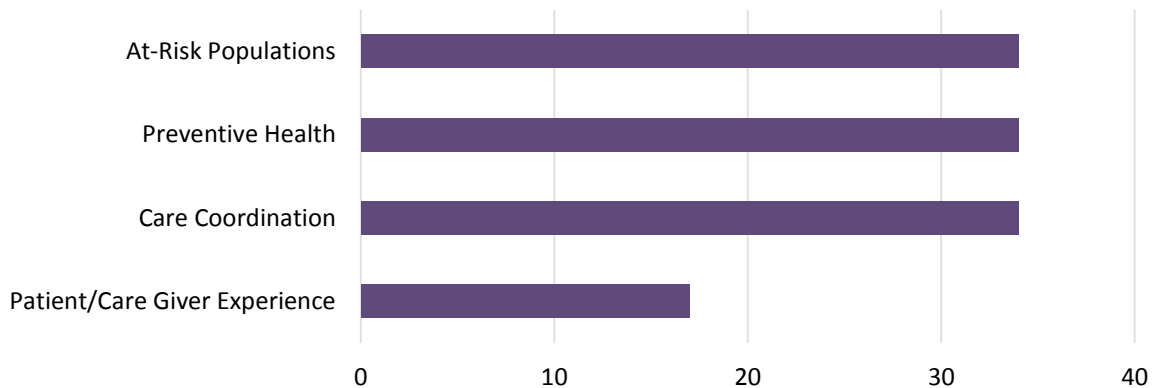
### D. Category 3: Population-Focused Improvement

Per the Waiver Terms and Conditions, the purpose of Category 3: Population-focused Improvement is to make “investments in enhancing care delivery for the 5-10 highest burden (morbidity, cost, prevalence, etc.) conditions in DPHs for the population in question. Examples of such initiatives drawn from the hospitals’ proposals are: A. Improved Diabetes Care Management and Outcomes; B. Improved Chronic Care Management and Outcomes; C. Reduction of Readmissions; and D. Improved Quality (with attention to reliability and effectiveness, and targeted to particular conditions or high-burden problems).”

As defined by the DSRIP, Category 3 projects will run for four of the program’s five years; no Category 3 project work was slated for completion in DY 6. As such, DY 7 represents the first year of the reporting period that includes specific projects and milestones for Category 3. For a details on Category 3 measures and the years in which they will be reported by all DPHs, please refer to Appendix C.

Unlike projects within Category 1 and 2, which are optional for DPHs, all Category 3 projects are required. Further, DPHs are required to report on and utilize the same milestones, and metrics, within this Category. A summary of DY 7 milestones completed by project in Category 3 follows.

Figure 5: Number of Category 3 Milestones Completed by Project in DY 7



Category 3 projects are process and outcome-oriented, and reflect processes to prevent or address high-burden conditions and the health of populations. In DY7, the first year of work in Category 3, the focus of DPH's work has involved significant investment in creating necessary capacity to extract and report data on population health. Data provided for Category 3 likely reflect both variations in HIT system capabilities among the different DPHs, and early results from other Category 1 and 2 improvements in care processes.

A review of Category 3 reports submitted by DPHs in DY 7 indicate that most systems focused efforts in the following areas:

- Investing in necessary infrastructure (e.g., implementation of EHRs and reliable disease registries, contracts to administer patient experience surveys)

- Ensuring accurate data collection (e.g., standard guidance for CG-CAHPS administration, investigating questionable data to ensure accurate coding and documentation)
- Staff and provider training (e.g., panel management training).

Though Category 3 milestones are reporting-only, the investments and focus in the above areas, many of which include projects DPHs are working on in Categories 1 and 2, will impact DPH systems' ability to capture, report and gather meaning from the data referred to in these milestones.

Category 3 findings by project are summarized below.

### 3.1 Patient / Care Giver Experience

The purpose of this project is to develop the capacity to collect and utilize information from patients and providers in order to guide performance improvement efforts.

As a required project for all DPHs, all 21 DPHs participated in this project during DY7. A total of 17 milestones were completed during this reporting period.

#### DY 7 Milestone Accomplished:

- ✓ Undertake the necessary planning, redesign, translation, training and contract negotiations in order to implement Clinician and Group – Consumer Assessment of Healthcare Providers and Services (CG-CAHPS) in DY 8

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Established contracts with vendors for rolling out CG-CAHPS survey
- Co-developed and adopted a consensus-based standardized approach to survey implementation
- Decided on sampling level (system-wide, clinic, or provider)
- Began the roll-out of the CG-CAHPS survey or determined the date roll-out will begin

#### Progress and Impact:

##### *Standard Guidance for CG-CAHPS Administration*

DPHs work on this milestone began in June 2011 when, under the Safety Net Institute's (SNI) guidance and supported by national CAHPS consultants, through two in-person convenings, all DPHs developed and endorsed a consensus-based, standardized guidance for administering CG-CAHPS. This was a critical step in developing a common platform for DPHs to report and benchmark comparable data and collaborate on quality improvement activities. The outcome, *Recommendations for a Standardized Measurement Strategy* document, was disseminated by SNI to all DPHs in August 2011, and a separate sampling guidance was disseminated in November 2011. These recommendations preserve considerable flexibility for each public hospital, while promoting survey administration in a manner that will enable reliable and comparable measures of data describing the ambulatory patient experience.

During DY7, all DPHs adopted these guidelines and communicated them to their vendors, who prepared to administer the CG-CAHPS survey accordingly.

The following is a summary of the adopted guidelines, which represent a minimum baseline of standardization, and do not prevent DPHs from conducting additional survey activities above and beyond baseline.

| Baseline Recommendations at a Glance |  |
|--------------------------------------|--|
| Survey Vendor                        | Each hospital selects own vendor   |
| Survey Type                          | Modified CG-CAHPS Visit Survey*  |
| Survey Mode                          | Mail, telephone, or email invitation to online survey with mail/phone follow up  |
| Survey Languages                     | English and Spanish  |
| Source of Sample Frame               | Hospital system/Clinic records   |
| Population to be Surveyed            | Adult patients of all payer types with at least one primary care clinic visit in the previous 12 months  |
| Public Reporting Unit                | Data will be reported to DHCS/CMS at the hospital system level, as opposed to the individual clinic or provider level  |
| Sampling Unit                        | Organizations will have two sampling options: <i>Option 1</i> ) hospital system-level only, or <i>Option 2</i> ) sampling at the clinic level or individual provider level before rolling up to a representative system-level sample for reporting to DHCS/CMS. Organizations are encouraged to consider sampling at the clinic or provider level so they can engage in quality improvement and additional benchmarking activities. The organizations sampling at the clinic or provider level need to survey patients from <u>all</u> their adult primary care clinics in order to achieve a representative sample for the whole system. A separate Sampling Guidance document discusses sampling issues in greater detail. |
| Sample Size                          | Sample size depends on the sampling unit selected. At a minimum, if sampling at the system level for reporting to the state and CMS, each DPH must sample a sufficient number of patients to obtain at least 300 completed surveys per year that reflect system-level performance.   |
| Timing                               | At a minimum, a system level 12-month sample will be drawn once per year in April and results reported to DHCS the following September. The exception is DY-8, where a 6-month sample will suffice for the first mandatory report, due to be reported in September 2013. In DY-9 and DY-10, a system level 6-month sample may be drawn twice per year in October and April and results reported to DHCS the following March and September. Hospitals have the option to sample and survey on a more frequent basis.  |
| Aggregation and Reporting            | In addition to reporting to DHCS, organizations are encouraged to submit raw data to SNI and the CAHPS Database to facilitate benchmarking.  |

*\*The CG-CAHPS Visit Survey has been modified to add the shared decision-making questions required by the DSRIP*



### *Local Data Collection Efforts*

Towards the end of DY 7 (and in some cases in early DY 8), DPHs began implementing the CG-CAHPS survey<sup>30</sup>. While all DPHs will report on their system-level data, 12 DPHs are going above and beyond DSRIP requirements and have decided to also sample at the clinic or provider level in order to achieve the sampling power necessary for reliable local performance estimates<sup>31</sup>.

For example, at ACMC, SMMC, and SJGH, DPH leaders have been trained on how to use the customer web portal to access the Press Ganey database, their CG-CAHPS vendor, in order to generate customized data reports at various levels and timeframes. At those systems, staff at all levels (executives, managers and quality leaders) are taking advantage of this direct access to comprehensive patient experience data to review and use the CG-CAHPS data for improvement.

Some DPHs elected to add customized questions to the CG-CAHPS survey. For example, LADHS added three questions that assess nurse communication, clinic cleanliness and likelihood of a patient returning to the clinic should he/she become insured. A number of DPHs intend to add additional, more granular questions in future years in order to further target quality improvement efforts.

Among the challenges identified is that some vendors do not have all useful member data fully integrated with the user portals to allow clinics to have access to their own reports. Going forward, SNI will support members in their efforts to engage their vendors to develop more user-friendly portals.

### *Early Results of Data Analysis*

Even though the focus for DY 7 was on building the foundation for successful survey implementation, some DPHs have begun conducting data analysis and score reporting. Several, such as RCRM, SFGH and SJGH, identified Access to Care (including providing timely appointments, care and information) as an improvement priority. An illustrative improvement action, the results of which will be measured using CG-CAHPS data, is occurring at SJGH: senior medical residents on call are also available to take clinic calls from the operator after clinic hours.

Within DPHs, the data have been reported and discussed with leaders and employees in a variety of ways. At SFGH and ACMC, data are reported at a variety of leadership, management and quality committees. At ACMC, the data are additionally posted on the organization's internal website (Intranet). At UCSD, data are reported at the Ambulatory Quality Committee, which reports to Quality Council of the Medical Staff. UCSF has disseminated the initial data via monthly management meetings, as well as through an e-mail sent to all UCSF employees showing aggregate results.

### *Challenges & Lessons Learned*

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<sup>30</sup> In the fall of 2011, CMS approved a technical clarification which increased from 3 to 6 months the period between the end of service dates included in sampling and the deadline for reporting results on the CG-CAHPS measure. As a result, some DPHs may have begun implementing the CG-CAHPS survey in April 2012, while others began implementation in October 2012.

<sup>31</sup> The DPHs sampling at the clinic or provider level: ACMC, ARMC, NMC, SCVMC, SFGH, SJGH, SMMC, UCD, UCSD, UCSF, UCI, VCMC

Gaps in accurate data surfaced as a challenge for some DPHs. An example included the delay experienced at SCVMC, due to difficulties compiling an accurate patient list to send to the vendor. In another example, initial surveys at SFGH were not reliably distributed in appropriate languages, which resulted in multiple calls from patients requesting new surveys. Urgent improvements were made to boost the accuracy of patient language data capture in the SFGH information systems, which remedied the accuracy of the sent surveys.

### 3.2 Care Coordination

The purpose of this project is to understand DPH performance within specific areas of care coordination; DY 7 work is focused on developing necessary capacity and reporting standard care coordination information for diabetic patients to the State.

As a required project for all DPHs, all 21 DPHs participated in this project during DY7. A total of 34 milestones were completed during this reporting period.

#### DY 7 Milestones Accomplished:

- ✓ Report results of uncontrolled Diabetes measure to the State
- ✓ Report results of the Diabetes, short term complications measure to the State

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- Percentage of patients 18-75 years with diabetes who have visited the DPH system's primary care clinic two or more times in the prior demonstration year who have received an inpatient discharge with an ICD-9 principle diagnosis code for uncontrolled diabetes, without mention of a short-term or long-term complication within the current demonstration year
- Percentage of patients 18-75 years with diabetes who have visited the DPH system's primary care clinic two or more times in the prior demonstration year who have received an inpatient discharge with an ICD-9 principle diagnosis code for short-term complications within the current demonstration year

#### Progress and Impact:

The rates of inpatient discharges for uncontrolled diabetes or diabetes with short-term complications were very low across all DPHs in DY7. The rate of inpatient principal diagnosis code of uncontrolled diabetes ranged from 0% to 3.6%. The rate of inpatient principal diagnosis code for diabetes, short-term complications ranged from 0.1% to 2.1%. Only five DPHs reported a rate greater than 1% on either milestone. See Figures 6 and 7 below for specific data reported for each DPH.

Figure 6: Inpatient Principle Diagnosis Code of Uncontrolled Diabetes

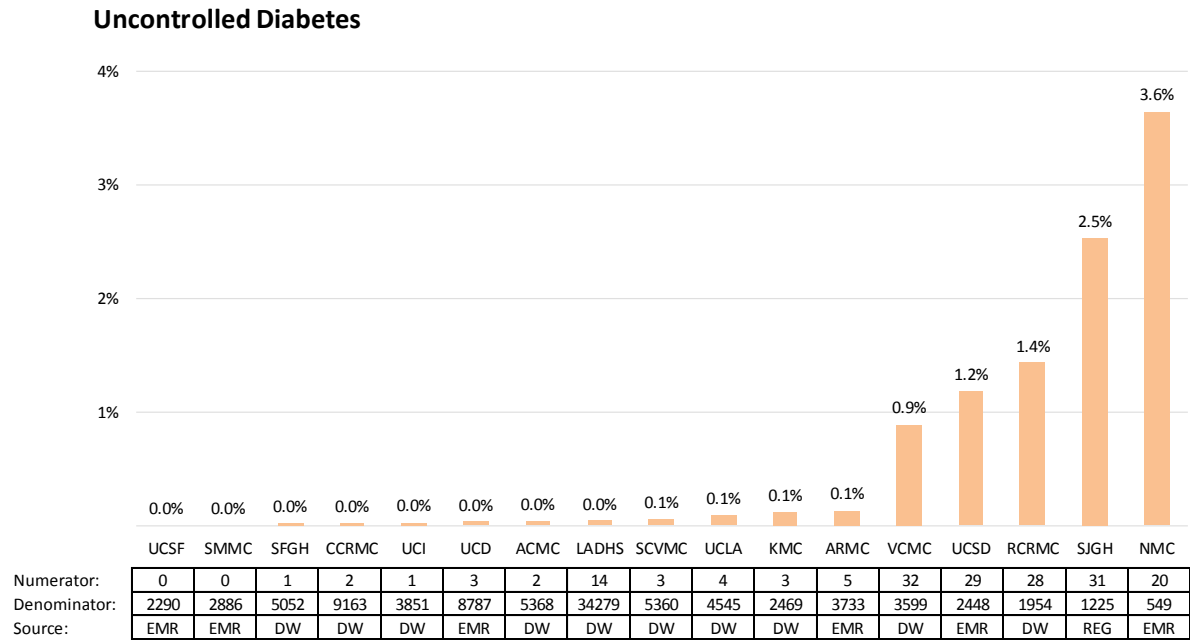
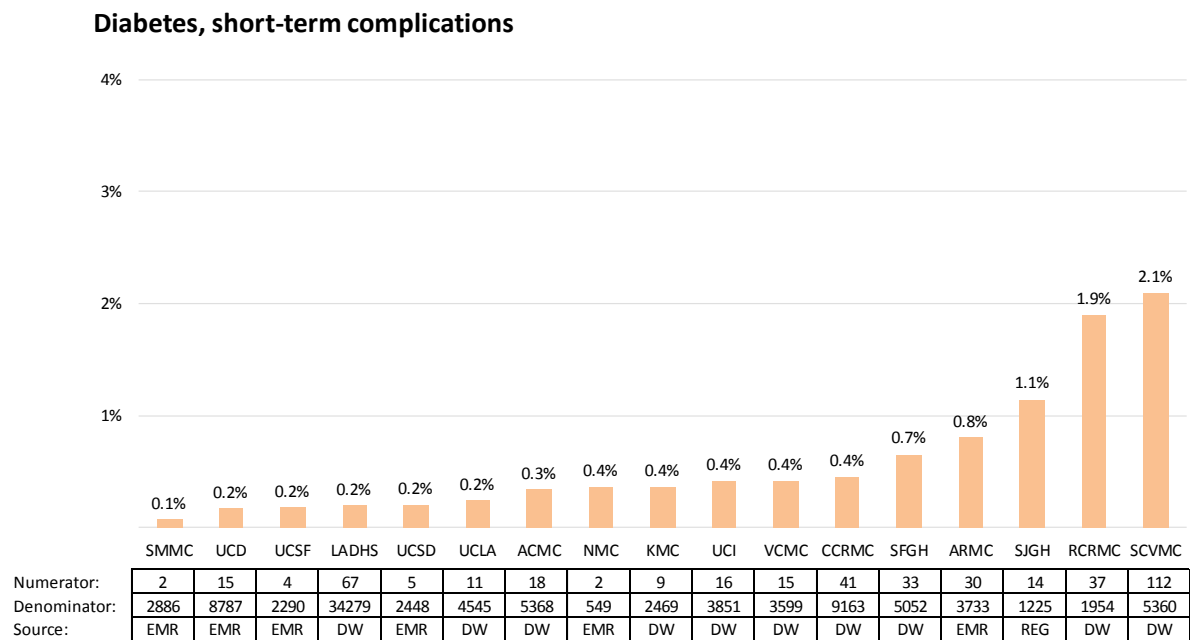


Figure 7: Inpatient Principle Diagnosis Code of Diabetes, Short-term Complications



### *Data and Reporting Capacity*

A few systems (KMC, VCMC) reported challenges with data reporting due to transitioning to an Electronic Health Record (EHR). Some DPHs are scrutinizing their low rates on this measure to determine if incomplete or inaccurate coding and documentation is resulting in underreporting. SFGH, which reported 0% on the uncontrolled diabetes milestone, noted the data for this metric warrants additional analysis as part of the organization's program to improve documentation and coding. They feel there may be additional patients who were hospitalized with this diagnosis but whose coding was not supported by clinical documentation. As a result, during DY8 they will embark on a documentation and coding improvement effort with the addition of two clinical documentation specialists whose charge is to ensure that all regulatory required metrics are accurately captured and reported. Similarly, UCI and LADHS have both undertaken initiatives to improve physician coding and documentation. It is important to note that with these coding and documentation efforts, more patients will be identified which would result in higher rates in future DYs.

### *Improvement Activities*

Most systems attributed their low rates of admissions attributable to uncontrolled diabetes and diabetes short-term complications to the intensive work they have been doing in building medical homes. Implementation of registries, the use of panel management to close care gaps, optimization of the care team, pharmacist-directed medication titration clinics, focus on self-management and patient education, and complex care management of poorly controlled diabetics are important examples of the delivery system transformation occurring to improve chronic disease care in the medical home model across the DPHs. Much of this work is part of DSRIP Categories 1 and 2.

For SFGH, management of diabetes within the primary care setting is an organizational strategy to prevent hospitalizations attributable to this chronic disease. SFGH has a diabetes management program in place, which includes:

- Use of the i2iTracks disease registry which allows providers and clinic staff to manage panels of diabetic patients, conduct outreach to impact visit and medication compliance, and track outcomes such as hemoglobin A1c results
- Accreditation as a recognized Diabetes Program by the American Diabetes Association—this includes assuring availability of diabetes education sessions by certified diabetes educators
- Inclusion of diabetes metrics as part of SFDPH's Primary Care Data Wall, which highlights quality and safety metrics in a visible format for each primary care clinic. This provides timely, accurate, and actionable data for clinic staff to discuss on a regular basis and incorporate into diabetes care improvement efforts

Several systems plan to refer the patients identified in the hospital with uncontrolled diabetes and/or diabetes complications for more intensive treatment. VCMC will refer these patients to their new Diabetic Center. SJGH will refer patients to their new Primary Medicine Clinic Diabetes Titration Clinic where patients are seen by a team consisting of a physician, pharmacist, medical assistant and care coordinators. SCVMC plans to link these patients to a diabetes care manager with the goal of reducing the risk of admission.

### *Review of Technology and Data Capture Mechanisms*

Interestingly for UCSF, feedback from the State on their first DY7 semi-annual report suggested that their rates for these two measures were extremely low. As a result, in the current DY7 report, UCSF expanded their report from all inpatients with a **principal** diagnosis of uncontrolled diabetes to **any** diagnosis of uncontrolled diabetes (increased from 0/2290 patients to 2/2290 patients); and likewise for diabetes short-term complications (increased from 4/2290 patients to 5/2290 patients). Given this insignificant change, they believe their low rates are suggestive of the high quality diabetes care their patients are receiving in their primary care practices.

It is clear from the DY7 narrative reports on these milestones that DPHs across the state are very focused on implementing the foundational building blocks in their medical homes, which will ultimately drive down inpatient utilization rates. It is also apparent that these milestones, like most others, have prompted and informed other projects to improve the accuracy of data, quality of care, transparency of results, and accountability of all staff required to achieve true delivery system transformation.

### 3.3 Preventive Health

The purpose of this project is to understand DPH performance within specific areas of preventive health; DY 7 work is focused on developing the necessary capacity to report standard preventive health utilization information to the State.

As a required project for all DPHs, all 21 DPHs participated in this project during DY7. A total of 34 milestones were completed during this reporting period.

#### DY 7 Milestones Accomplished:

- ✓ Report results of mammography screening for breast cancer to the State
- ✓ Report results of the influenza immunization measure to the State

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

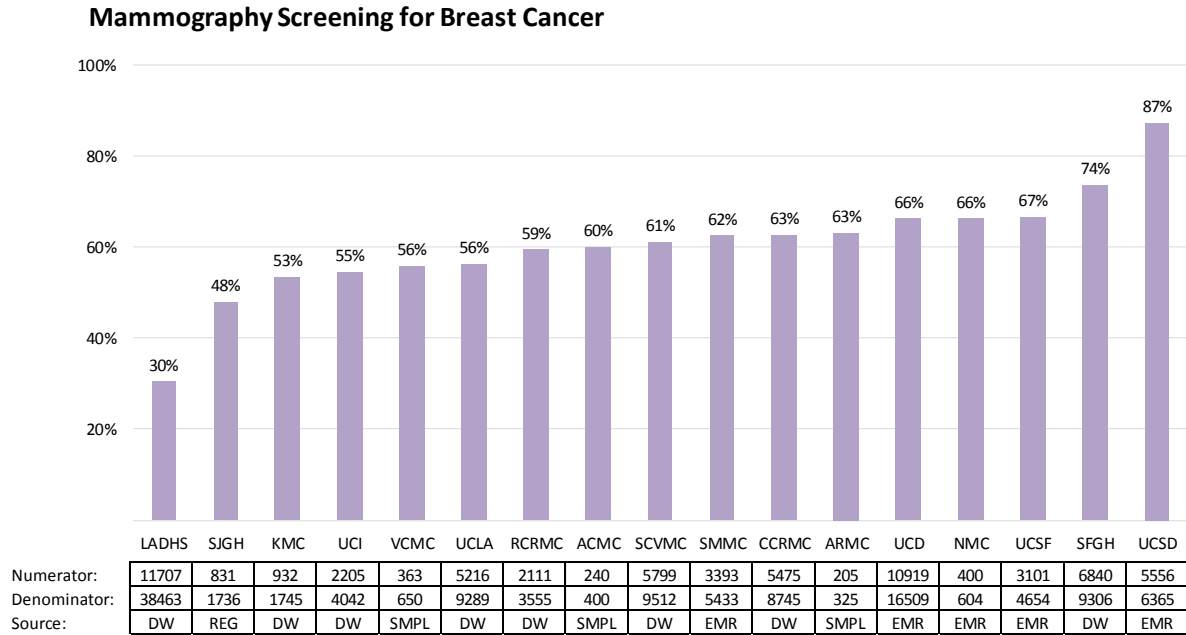
- Percentage of female patients age 50-74 who have visited the DPH system's primary care clinic two or more times in the prior demonstration year who had a mammogram screening for breast cancer within 24 months
- Percentage of patients age 50 and older who have visited the DPH system's primary care clinic two or more times in the prior demonstration year who received an influenza immunization during the flu season of the current demonstration year

#### Progress and Impact:

##### *Mammography Screening*

Upon review of the DPH DY7 reports, mammography screening rates ranged from 30% to 87%. Details by DPH are provided in Figure 8: Mammography Screening for Breast Cancer on the following page.

Figure 8: Mammography Screening for Breast Cancer



*Data and Reporting Capacity*

UCSD has the highest mammography screening rate of all DPHs, with an impressive 87%. Reporting on this measure is made seamless, and likely very accurate because of a robust IT system, including an EHR. UCSD reported that the biggest challenge for reporting on this measure was correctly identifying the denominator since different regulatory agencies use different population definitions. However, once the inclusion criteria were clarified, the reporting was straightforward because of the design of their EHR.

*Improvement Activities*

SFGH has the second highest mammography screening rate at 74%. An increase in mammography screening rates is an ongoing goal for all SFGH primary care clinics, as part of a set of Health Care Maintenance measures for adults that are ongoing indicators within the primary care Performance Improvement program. Improvement initiatives undertaken in DY7 which focused on health maintenance included panel management trainings for care team members, uniform monitoring and reporting of health maintenance measures through San Francisco Primary Care Data Wall, and participation in the San Francisco Health Plan Strength in Numbers Performance Improvement incentive program. Similarly, UCSF (67%) is focusing on using panel managers to increase screening and has created an ambulatory care quality dashboard that measures population health at both the clinic and provider level and is shared with clinical and operational management. These top performers have streamlined/automated their quality measurement processes, are transparent about their outcomes, and hold physicians and care teams accountable for their outcomes.

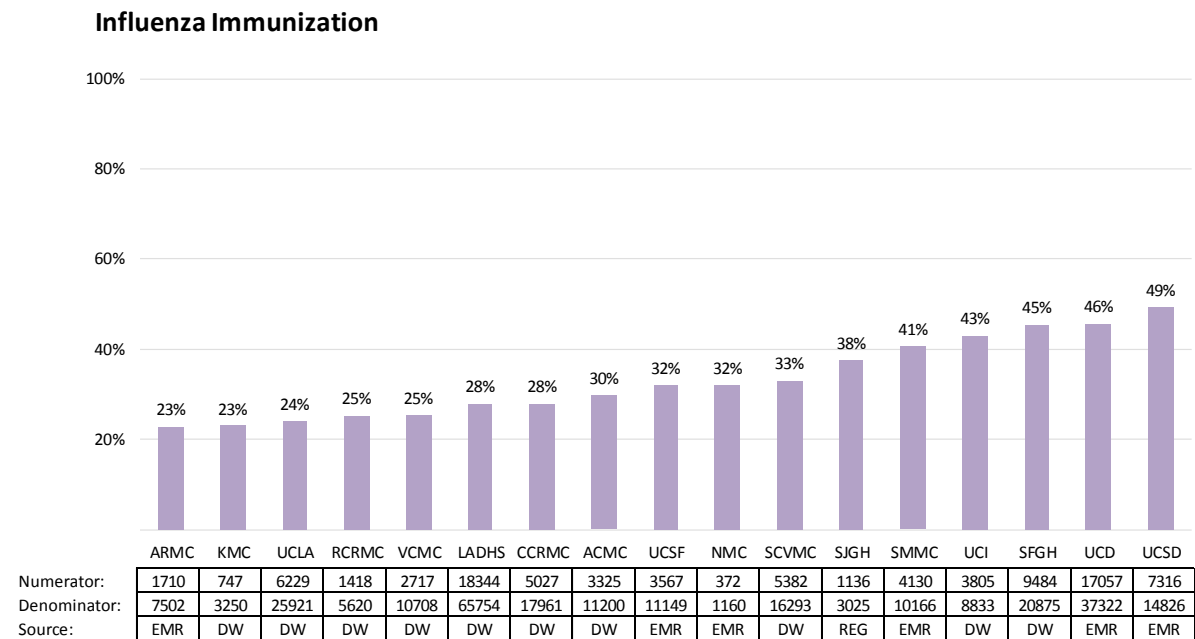


LADHS (30%) has struggled to capture 100% of their mammogram data in their Enterprise Data Repository as completeness of coding was a problem. Patients also frequently obtained free mammograms in the community via mobile mammogram vans, which, while good for access, were not always captured in the data. This information was not previously able to be systematically collected in the past; however, with the roll-out of the disease registry, i2iTracks, providers may enter information on mammograms obtained outside the system which will likely result in more accurate mammogram reporting. The i2i Tracks registry will also serve as an auto-reminder for providers when patients are due for this service. As part of their quality improvement efforts, LADHS ensures that all category 3 data is shared routinely with facility leadership, outpatient medical directors, and quality directors. This is to both encourage providers to increase compliance with needed preventive care as well as identify opportunities for system-level improvements. As one specific lesson learned thus far, LADHS learned that one of their facilities (Rancho Los Amigos) has challenges in accessing mammogram services due to the processes through which patients are referred for the test. LADHS is now working to rectify this issue. Hence, their low reported rate on this metric is driving changes at the system level.

*Influenza Immunization Measure*

Upon review of the DPH DY7 reports, the influenza immunization rates ranged from 23% to 49%. Details by DPH are provided in Figure 9: Influenza Immunization Measure below.

Figure 9: Influenza Immunization Measure



### *Data and Reporting Capacity*

As with mammography screening, UCSD is the top performer in this preventive measure with an influenza immunization rate of 49%. The ability to use their EHR for data reporting and their registries to improve preventive services are the two main factors credited for this achievement. UCD has the second highest influenza immunization rate at 46%. As detailed in their DY7 narrative for the Category 2.1 project Expand Medical Homes, UCD designed a seasonal influenza notification system using the EHR MyChart launching page to provide a blanket announcement to all MyChart subscribers about the importance of influenza vaccination during flu season. Additionally, telephone reminder calls were made to patients outside the MyChart system to maximize the spread of the immunization message. UCD also designed a MyChart influenza action report or census list to be reviewed during the team huddle. Staff were also trained to ask about vaccine received outside the UCD system as the ability to capture and record information on patients receiving a flu shot outside their system continues to be a challenge.

SFGH has an influenza immunization rate of 45%. They report the following challenges in being able to capture a true vaccination rate:

- Many patients receive the influenza vaccine at private pharmacies, unknown to SFDPH providers
- Their drop-in flu clinics do not require a visit and documentation of all immunizations in the medical record is inconsistent

In an effort to track a more accurate immunization rate, SFGH clinics plan to build in a more reliable documentation system to capture immunizations provided.

ARMC (23%) relied on patient billing reports to capture the data for this milestone. ARMC reports that it is very likely that this is an under-representation of their true rate because of coding omissions/errors and the inability to capture flu shots given outside of the ARMC system. As their electronic systems are enhanced and a means of more comprehensive data capture is attained, timely preventive care reports should improve this measure. KMC used a multi-pronged approach to encourage patients to get their influenza vaccine. They implemented a hospital-wide public relations campaign and included information on where patients could get the vaccine around the county. They also hosted their own evening flu shot clinic free of charge to patients. Despite these efforts, their influenza immunization rate was only 23%. The factors they suspect may have contributed to their low rate include:

- Patients received their influenza immunization outside the KMC campus
- KMC's campaign targeted the whole population, not specifically those age 50 and older
- Poor documentation during the flu shot clinics (documentation was scanned into the patient medical record but not keyed into a reportable field)
- Flu shots were given outside the September-February timeframe

KMC plans to implement a dialog box for capturing influenza immunization information, which will create a reportable health factor on the medical record. Once the interface between the disease registry and EHR is complete, KMC will be able to use the disease registry to target select patients.

### *Necessity of Accurate Data Capture*

Both Preventive Health milestones demonstrate that an EHR and/or registry is essential to producing

accurate and actionable reports that can then be acted on by panel managers or other members of the care team. A universal challenge for all DPHs, regardless of EHR or registry, was the ability to capture and record influenza immunizations received outside of the DPH's system. Many DPHs are establishing workflow process to capture and document this information.

*Improvement in tandem with long term goals*

DPHs are indeed focused on making other delivery system improvements, in addition to enhancements to data infrastructure, to move the bar on population health measures such as the above preventive health measures. For example, several DPHs noted an increased focus on panel management activities in DY 7, designed to bring patients in for necessary services that are due. Further, as systems move towards becoming medical homes and providing proactive, team-based, patient-centered care, it is likely they will observe improvements in preventive health measures.

### 3.4 At-Risk Populations

This purpose of this project is to understand DPH performance in support of specific at-risk populations; DY 7 work is focused on developing necessary capacity and reporting standard metrics for at-risk patients to the State.

As a required project for all DPHs, all 21 DPHs participated in this project during DY7. A total of 34 milestones were completed during this reporting period.

#### DY 7 Milestones Accomplished:

- ✓ Report results of the Diabetes Mellitus: Low Density Lipoprotein (LDL-C) control measure to the State
- ✓ Report results of the Diabetes Mellitus: Hemoglobin A1c Control measure to the State

#### The metrics referenced in the DY 7 reports as potential indicators of improvement included:

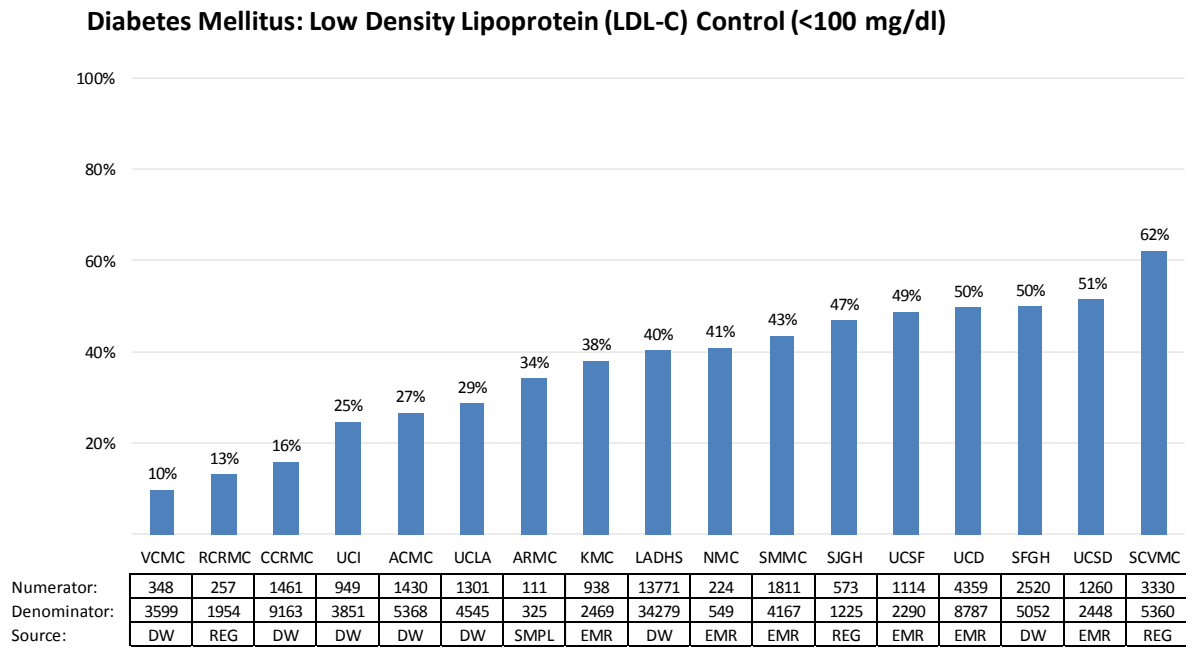
- Percentage of patients age 18-75 years with diabetes who visited the DPH system's primary care clinic two or more times in the prior demonstration year who had their most recent LDL-C level in control (<100mg/dl) during the current demonstration year
- Percentage of patients age 18-75 years with diabetes who visited the DPH system's primary care clinic two or more times in the prior demonstration year who had their most recent HbA1c level in control (<8%) during the current demonstration year

#### Progress and Impact:

##### *Diabetes Mellitus: LDL-C Control (<100 mg/dl)*

Upon review of the DPH DY7 reports, the rate of LDL control (<100 mg/dl) ranged from 10% to 62%. See Figure 10: Diabetes Mellitus: LDL-C Control (<100 mg/dl) on the following page for DPH-specific performance on this metric.

Figure 10: Diabetes Mellitus: LDL-C Control (<100 mg/dl)



**Data and Reporting Capacity**

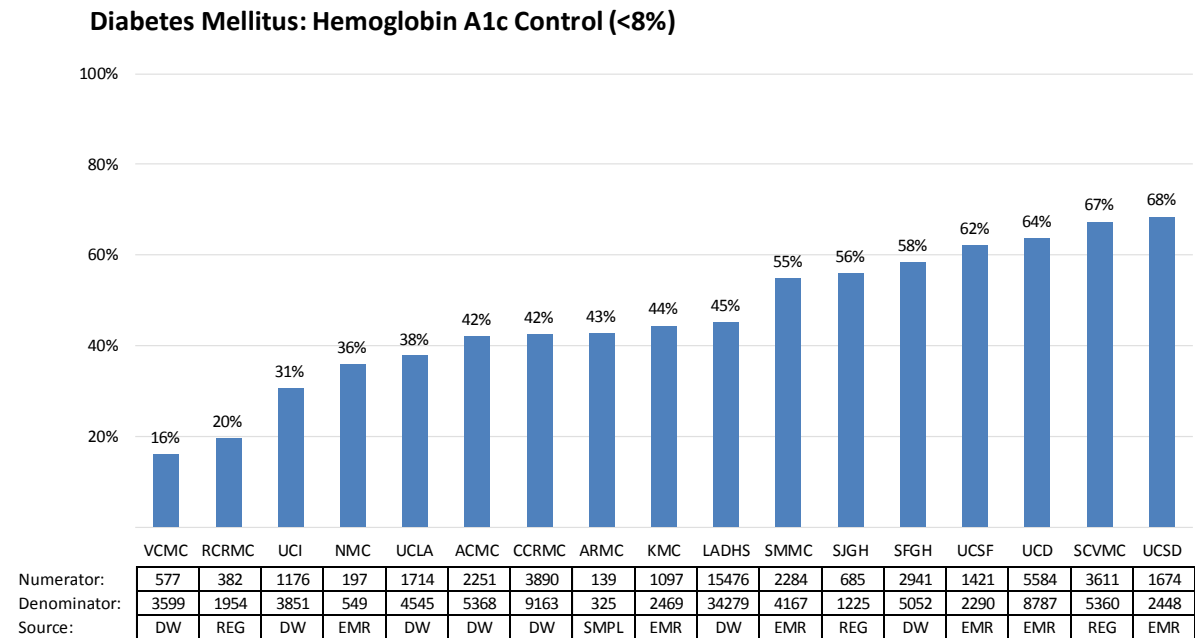
With the highest reported rate of 62%, SCVMC's information is derived from their laboratory data system, which feeds data into their registry. They have been working for the past year on several strategies to improve both LDL screening and control, including developing and distributing "exception" reports in their registry to identify patients due for LDL screening and establishing processes for diabetes care management teams to outreach to these identified patients. UCSD, at 52%, has a robust IT system for data collection. Discrete data elements in EPIC are available for reporting. They have made great strides in setting up disease registries for patient with diabetes and cardiovascular disease (as detailed in their category 1 Implementing Disease Management Registries for Improving Clinical Care project). For SFGH with a rate of 50%, all of their DPH primary care clinics have established improvement in LDL control as a performance improvement goal. To move this metric, they have focused medical home efforts on panel management of all diabetic patients, team building and care coordination trainings for nursing staff, adding health coaches to their care teams. SFGH primary care clinics have also facilitated interdisciplinary, collaborative approaches to continued performance improvement through: 1) Formation of a QI Advisory Panel to monitor and support clinics' QI work and reduce variation and set baseline level of skill requirement for all clinics, and 2) Continued tracking chronic disease outcomes on Primary Care Data Wall. Hence, the high performers have streamlined/automated their quality measurement processes, are transparent about their outcomes, and hold physicians and care teams accountable for their outcomes.

The DPHs with the data showing the lowest percentage of diabetic patients in control lack a disease registry and/or EHR. VCMC relied on manual sampling for this measure because they do not yet have a registry or EHR in place throughout their vast clinic network. RCRMC is using the CDEMS registry with a SQL back-end. Although a major effort to update the registry was undertaken, it requires manual data entry of clinic visit data, lab results, and other information on new and existing patients. This is so labor intensive that it has proven extremely challenging to ensure that the registry information is current. Fortunately, RCRMC plans to purchase and implement the i2iTracks registry and they are currently rolling out the EHR in both their Family Care and Internal Medicine Clinics. These systems demonstrate that if you can't measure it, you can't improve it.

*Diabetes Mellitus: Hemoglobin A1c control (<8%)*

In DY 7, the rate of A1c control (<8%) ranges from 16% to 68%. Details by DPH are provided in Figure 11: Diabetes Mellitus: Hemoglobin A1c control (<8%) below.

Figure 11: Diabetes Mellitus: Hemoglobin A1c control (<8%)



*Data and Reporting Capacity*

UCSD and SCVMC reported the highest rates on this milestone, as they did for the diabetic LDL control milestone. UCSD reported 68% of diabetics with most recent A1c <8%. As noted for diabetic LDL control, UCSD has the benefit of a robust IT system that captures data on a nightly basis and they have also directed significant effort toward setting up their diabetes and cardiovascular registries. At SCVMC, 67% of diabetic patients' most recent A1c is <8%. They have achieved this rate by using their registry to support panel management for patients with care gaps and poorly controlled disease. UCD at 64%

utilizes its EHR, registry, IT team and Knowledge Management Team to capture the data and then perform rigorous data validation.

The DPHs showing the lowest percentage of diabetic patients in control lack an EHR and/or registry, or rely on a registry that requires manual data entry. Other systems, like LADHS at 45%, have been challenged by validation of lab data.

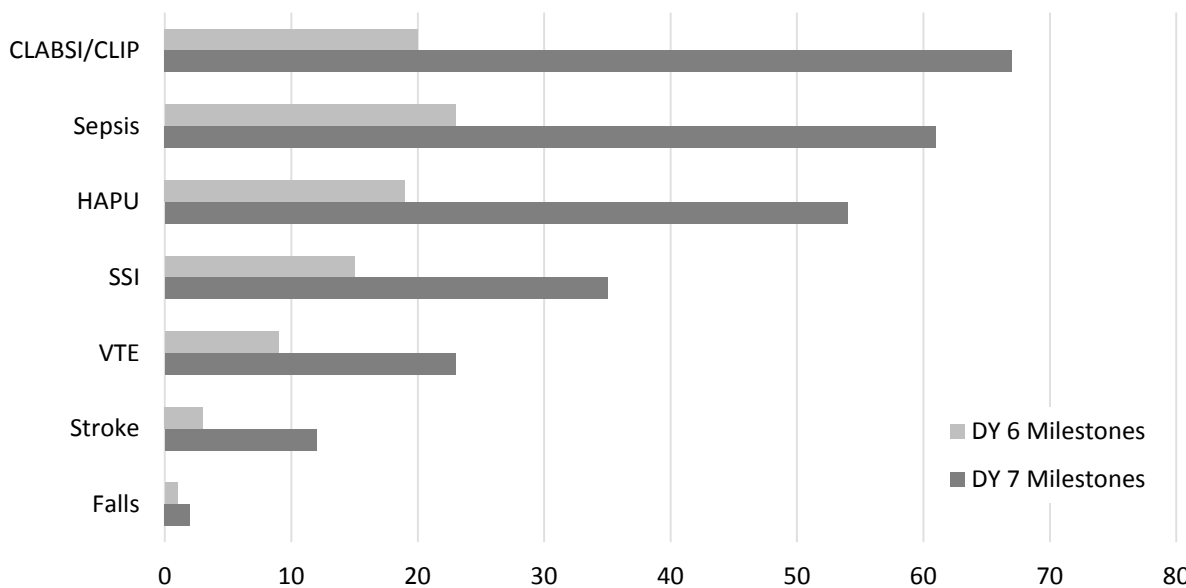
Hence, both milestones in the At-Risk Populations domain reinforce the fact that a robust IT infrastructure is absolutely required to be able to generate timely, accurate data to report on population health metrics and to drive quality improvement.

## E. Category 4: Urgent Improvement in Care

The goal of Category 4 is to “make urgent improvements in care that: (1) Has a Promised Impact on the Patient Population, including interventions that have been demonstrated to produce measurable and significant results across different types of hospital settings, including in safety net hospitals; (2) Has a Strong Evidence Base, meaning interventions that have been endorsed by a major national quality organization, with reasonably strong evidence established in the peer reviewed literature, including within the safety net; and (3) Is Meaningful to Populations Served in California’s DPHs because, without significant improvement in this intervention, California DPHs' patients are at risk of harm, needless suffering, or premature/preventable death.”<sup>32</sup>

DY 7 work in Category 4 was designed to lay the groundwork for significant improvements in care, with a strong focus on clarifying measurement and data collection issues, and developing capacity to collect and report accurate and timely data. DY 7 work builds upon what was completed in DY 6, but reflects a significant increase in the number of projects undertaken by DPHs within six of the seven categories. A comparison of DY 6 and DY 7 milestones completed within each Category 4 project follows.

Figure 12: Number of Milestones Completed by Project in Category 4



The ultimate aim of Category 4 projects is to dramatically improve patient outcomes. In order to deliver outcome improvements in later years of the DSRIP, much of the Category 4 project work completed by DPHs in DY 7 was focused on developing the required infrastructure, processes, and staffing to drive change. With these changes as the groundwork, DPHs expect to begin demonstrating improvements within the Category 4 interventions starting in DY 8.

<sup>32</sup> Please see Waiver II-WOO 193/9, Attachment Q: Category 4, at <http://www.dhcs.ca.gov/Documents/CAHPG%20031711%20scan.pdf>.



Specific steps taken by DPHs in DY 7 to support staff and providers in ways that will reduce morbidity and mortality across identified Category 4 interventions include:

- Using available data to focus and guide performance improvement efforts (e.g., ongoing data review and drill-down to determine cause of patient falls and preventive actions that could be taken)
- Increasing staffing, clearly defining staff roles and accountabilities, particularly in relation to performance improvement efforts (e.g., increase in number of staff monitoring CLABSI efforts)
- Conducting rigorous staff training, and engaging front-line staff in problem-solving efforts (e.g., hospital-wide sepsis education, “back-to-basics” training on pressure ulcers)
- Creating standard approaches to deliver consistent, high-quality, care to all members (e.g., standard processes for central line insertion); using technology to support standardization when possible (e.g., use of electronic CLIP form to allow rapid data compilation and intervention)
- Participating in cross-DPH collaboratives designed to quickly share insight and spread innovation (e.g., Safety Net Institute (SNI)’s Sepsis Collaborative, Southern California Patient Safety Collaborative, SNI’s CLABSI collaborative)

Category 4 findings by project are summarized below.

#### 4.1 Severe Sepsis Detection and Management

CMS indicated its interest in using this Sepsis project as a learning laboratory. Therefore, the emphasis of this intervention is focused on learning, testing, and innovation. Insights from this project will inform ongoing DPH system efforts to reduce sepsis mortality and, hopefully, contribute to the national dialogue regarding sepsis harm reduction.

The purpose of this project is to improve compliance with elements from the sepsis resuscitation bundle and to report sepsis mortality. Sepsis is a time sensitive intervention, like heart attacks or stroke, and early detection and treatment are critical in achieving a positive outcome.

As a required project for all DPHs, all 21 DPHs participated in this project in DY 7. A total of 61 milestones were completed during this reporting period related to improving compliance with the sepsis resuscitation bundle.

##### DY 7 Milestones Accomplished:

- ✓ Report data on sepsis resuscitation bundle to both the State and to the Safety Net Institute (SNI)
- ✓ Review internal policies and procedures on sepsis resuscitation bundle implementation
- ✓ Hire additional staff
- ✓ Join a sepsis collaborative
- ✓ Training and education on sepsis resuscitation bundle elements and protocols
- ✓ Implement sepsis screening
- ✓ Define operational definitions for sepsis and define data collection methodology
- ✓ Integrated solutions into EHRs

##### The metrics referenced in the DY 7 reports as potential future indicators of improvement included:

- Implementation of the Sepsis Resuscitation Bundle
- Reduction in Sepsis mortality

##### Progress and Impact:

Given the lack of national consensus on sepsis protocols, defining sepsis, and measuring compliance with the sepsis resuscitation bundle, CMS indicated strong interest in DPHs using sepsis as a learning laboratory. CMS suggested that this intervention be used to learn, test and innovate in an effort to reduce sepsis mortality.

In DY7, in order to be able to measure, report and improve on this intervention, the Safety Net Institute (SNI) and all DPH's, together with California Department of Health Care Services (DHCS), utilized national experts, reviewed literature and facilitated multiple convenings and conference calls to work through data collection and measurement issues. In May 2012 SNI hosted a Sepsis Expert Convening to bring all DPHs together to identify the specific issues that were the most challenging and hindering their ability to come to consensus on sepsis data collection, measurement and practices. This expert convening was lead by an outside facilitator and a nationally recognized expert in the field of sepsis, Sean R. Townsend, MD, one of the original authors of the 2008 Surviving Sepsis International Guidelines.

SNI continued to facilitate multiple conversations across all DPHs to find a common set of agreed-upon metrics in order to support DPHs to collect data that would be useful for comparison.

An example of one of the issues DPHs wrestled with is the clinical definition of severe sepsis and septic shock. The international community of sepsis experts does not agree on the clinical definition of severe sepsis or septic shock and this directly impacts DPHs' ability to collect comparable data<sup>33</sup>. There are general parameters used by the clinical community to delineate when a patient has systemic inflammatory response syndrome (SIRS), severe sepsis or septic shock. The conclusions reached by international sepsis experts at the International Sepsis Definitions Conference<sup>30</sup> indicated that sepsis definitions “do not allow precise staging or prognostication” and that SIRS criteria are “overly sensitive and non-specific.” The International Sepsis Definitions Conference provides a list of diagnostic criteria that can be used to identify different stages of sepsis. After much deliberation, all DPHs agreed to use only the parameters provided by the International Sepsis Definitions Conference in clinically defining sepsis within their own organization.

With a framework for sepsis measurement and data collection in hand, the DPHs worked on defining their own operational definitions for the sepsis resuscitation bundle elements and their individualized data collection methods. The lack of nationally recognized protocols created ambiguity and/or variation in how certain elements were defined and, as a result, DPHs had to develop their own internal policies and procedures related to sepsis that clearly articulated definitions and data collection methodologies.

#### *Shared Learning*

Given the above challenges, it was critical for DPHs to work together to learn and contribute to the field. Nearly all DPHs participated in SNI's Sepsis collaborative that began in June 2011 and ends in June 2013. In addition, other hospitals such as RCRM, ARMC, CCRM, and SMMC are participating in other collaboratives including the Surviving Sepsis Campaign, Beacon, and the Southern California Patient Safety Collaborative. With great diversity of opinion on sepsis amongst the expert community, it became crucial for DPHs to share data and best practices with other hospitals. Participation in collaboratives, such as those named above, allowed DPHs to accelerate their ability to identify effective ways to improve compliance with the sepsis resuscitation bundle and reduce sepsis mortality.

#### *Staffing*

A few DPHs elected to increase their staffing to enhance their Sepsis program. ARMC hired LVNs and staff analysts to assist with data collection and report writing. SCVMC committed dedicated sepsis nurses to perform retrospective and concurrent chart reviews of all septic, severely septic and septic shock patients. The increase in staffing resources allowed these hospitals to identify cases of sepsis more quickly and to analyze their data for improvement opportunities.

#### *Improvement Activities*

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<sup>33</sup> Levy, M. M., Fink, M., et al. 2001 SCCM/ESICM/ACCP/ATS/SIS International Sepsis Definitions Conference. *Intensive Care Medicine*(4) 530-538  
Retrieved 5/17/2012 from <http://www.ncbi.nlm.nih.gov/pubmed/12682500>

*Increased awareness to screen for sepsis*

Some DPHs went beyond the required elements of the sepsis resuscitation bundle, as defined in the DSRIP, and included screening of patients to identify septic patients (the early identification and treatment of septic patients is critical in improving sepsis outcomes). UCD and VCMC recognized the need for early intervention and incorporated milestones into their DSRIP plans to address this. For example, UCD developed and implemented Best Practice Alerts within the UCD EHR for early sepsis recognition targeting all adult patients in the emergency department (ED), acute care critical care units. In addition, electronic order sets were also incorporated into their EHR to help improve compliance with elements of the resuscitation bundle and their recommended time to administer. VCMC also proactively screens all patients in their ED and ICUs. By identifying potentially septic patients earlier, UCD and VCMC have the opportunity to speed treatment for these patients and potentially improve their outcomes.

*Increased awareness of Sepsis*

In DY7, all DPHs implemented the elements of the sepsis resuscitation bundle. All DPHs reviewed their internal policies and procedures related to the sepsis resuscitation bundle and conducted training and education for staff. Hospitals developed different ways to spread information about sepsis to their clinical teams. SFGH developed and distributed pocket reference cards and sends personalized emails with patient outcome and process measure data to all physicians and nurses responsible for that patient's care at time of presentation for sepsis. ACMC developed hospital-wide education and created a video called "Sepsis: The Highland Way" which received accolades from its public hospital peers and over 26,000 views on YouTube. ARMC developed an online sepsis education module that is posted on their intranet. SCVMC completed training and education among its physician, nursing and pharmacy staff, which remains ongoing for new employees.

#### 4.2 Central Line Associated Blood Stream Infection Prevention

The purpose of this project is to improve compliance with the central line insertion practice (CLIP) bundle and reduce the rate of central line blood stream infections in patients receiving care in DPHs. The CDC estimates that 41,000 CLABSIs occurred among hospitalized patients in 2009, 18,000 of them in intensive care units (ICUs). CLABSIs are among the most serious hospital-acquired conditions (HACs), resulting in death for 12% to 25% of affected patients.

As a required project for all DPHs, all 21 DPHs participated in this project in DY 7. A total of 67 milestones were completed during this reporting period related to reducing CLABSIs and improving CLIP compliance.

##### DY 7 Milestones Accomplished:

- ✓ Report CLIP compliance to both the State and to SNI
- ✓ Report CLABSI rates to both the State and to SNI
- ✓ Review and revise internal CLIP policies and procedures (develop standardized processes for CLIP adherence)
- ✓ Hire additional staffing
- ✓ Provide training and education to clinical staff on CLIP compliance
- ✓ Perform internal review of CLIP data and analyze results
- ✓ Participation in CLABSI collaborative

##### The metrics referenced in the DY 7 reports as potential future indicators of improvement included:

The metrics for CLIP compliance and CLABSI rates are as follows:

- Process Measure: Compliance with Central Line Insertion Practices (CLIP)
  1. Metric:
    - a. **Numerator:** Number of patients with central lines that occur in all intensive care units (ICUs) including adult, pediatric and NICUs within the facility for whom all elements of the CLIP are documented
    - b. **Denominator:** Total number of patients with central lines that occur in all intensive care units (ICUs) including adult, pediatric and NICUs within the facility
- Outcome Measure: Central Line-Associated Bloodstream Infections (CLABSI)
  1. Metric:
    - a. **Numerator:** Laboratory-confirmed primary bloodstream infections that are not secondary to another infection and that occur in critical care units or inpatient ward patients in whom a central line was in place at the time of, or within 48 hours before, onset of infection

- b. **Denominator:** Device days, i.e., number of critical care units or inpatient ward patients with one or more central lines or umbilical catheters enumerated daily and summed over the measurement interval

Progress and Impact:

*Data Collection and Baseline Development*

During DY7, DPHs submitted data to both the State and to the Safety Net Institute (SNI) in order to develop a baseline and to identify an improvement target for future years, for both the rate of CLIP compliance and CLABSIs.

DPHs such as SFGH and UCLA are leveraging their (HIT) to better track where central lines are placed within their facility and electronically document the elements of the CLIP form (which are largely paper-based in most health systems). For example, at UCLA, they have an electronic CLIP form on their internal forms portal. The CLIP form allows UCLA staff to rapidly compile CLIP data and intervene on outliers in near-real time; it also allows nurses and other staff to complete the form easily, using their bedside computers as they assist with the procedure itself.

*Staffing and Workflow Redesign*

DPHs looked internally to identify opportunities for improvement in how they allocated their staffing and resources to address central line infections. Hospitals took different tactics in how they augmented their staff to more effectively monitor CLABSI efforts within their facility. ACMC expanded their in-house peripherally inserted central catheter (PICC line) nurse team from 1 to 3 permanent nurses, which greatly expanded their ability to monitor and reduce CLABSIs. ACMC also hired a project assistant and critical care outcomes nurse coordinator who is an expert in central lines who is able to provide increased capacity for monitoring and maintaining best practices. ARMC hired staff analysts and LVNs to abstract clinical data, perform data analysis and perform report writing.

Many of the DPHs focused on reviewing their internal policies and procedures related to CLABSI prevention. As a result, many hospitals now have developed standardized processes on to implement the central line insertion practices. Hospitals such as NMC, LADHS, ACMC, and SFGH have implemented specific improvements to help ensure uniform adherence to the CLIP protocols such as:

- Creation of central line insertion kits or carts to hold all the necessary supplies needed to perform central line insertions aseptically
- Ensuring daily necessity of central lines are reviewed during rounding
- Developing an electronic process for identifying all patients who have a central line placed throughout the facility
- Standardizing physician documentation that addresses all the components of the central line insertion bundle measures
- Developing educational materials in multiple languages for both in- and outpatients on central line care and maintenance

As noted above, many DPHs developed a kit or cart containing all the necessary supplies necessary to perform central line insertions aseptically. Several DPHs noted performing several PDSA cycles until the

kits or carts contained all the information and supplies needed and were organized to match clinical workflow. This is intended to help clinicians adhere to CLIP compliance by providing them with the right tools and information to make it easy to comply with evidenced-based best practices.

### *Staff Training*

With the many process improvements implemented in DY7 by public hospitals, training and education was necessary to provide up-to-date information to clinicians to help ensure adoption and spread of identified best practices. To support this effort, DPHs implemented multi-faceted approaches to training and educating their clinicians on the importance of adhering to the CLIP bundle, as well as on central line infections. Most health systems developed formalized training and education programs to systematically disseminate this information. In addition, nearly all DPHs participated in SNI's CLABSI collaborative, which allowed them to share insights and best practices.

### 4.3 Surgical Site Infection Prevention

The purpose of this project is to reduce surgical site infections. Surgical site infections can be successfully prevented by implementing preventative peri-operative practices such as: optimizing use of antimicrobial prophylaxis, proper hair removal techniques, and control of serum glucose levels which are some of the elements of the Surgical Care Improvement Project (SCIP)<sup>34</sup>.

Sixteen DPHs (twelve systems) completed 35 milestones related to reducing surgical site infections:

1. Alameda County Medical Center (ACMC)
2. Los Angeles Department of Healthcare Services (LADHS)
3. Riverside County Regional Medical Center (RCRMC)
4. Santa Clara Valley Medical Center (SCVMC)
5. San Francisco General Hospital (SFGH)
6. San Joaquin General Hospital (SJGH)
7. San Mateo Medical Center (SMMC)
8. University of California Davis Medical Center (UCD)
9. University of California Los Angeles (UCLA)
10. University of California San Diego (UCSD)
11. University of California San Francisco (UCSF)
12. Ventura County Medical Center (VCMC)

#### DY 7 Milestones Accomplished:

- ✓ Report surgical site infection rates to both the State and to SNI
- ✓ Improve compliance with elements of the Surgical Care Improvement Project (SCIP)
- ✓ Develop preprinted order sets and include in preoperative packets
- ✓ Provide educational models for attending, house, and perioperative staff as well as medical/surgical unit nursing on current evidenced-based SCIP guidelines
- ✓ Implement quality checklists on formatted inpatient notes
- ✓ Leverage HIT to better track surgical site wound infections
- ✓ Examine environmental factors that may affect SSIs
- ✓ Identify best products on market to help reduce SSIs

#### The metrics referenced in the DY 7 reports as indicators of improvement included:

- Rate of surgical site infection for Class 1 and 2 wounds

#### Progress and Impact:

Twelve DPHs members elected to work on reducing surgical site infections. Figure 13 below illustrates which surgeries were selected by each DPH for the SSI project.

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<sup>34</sup> For more information, please see [http://www.jointcommission.org/surgical\\_care\\_improvement\\_project/](http://www.jointcommission.org/surgical_care_improvement_project/)



Figure 13: SSIs tracked by DPHs and Aggregated Baseline Rates by Procedure

| Procedure   | NHSN Code | UCD | UCSD | LACDHS | UCSF | SFGH | SCVMC | ACMC | RCRMC | SIGH | UCLA | SMMC | VCMC | # of DPHs working on Procedure |
|---|-----------|-----|------|--------|------|------|-------|------|-------|------|------|------|------|--------------------------------|
| Colon surgery   | COLO      | ✓   |      | ✓      | ✓    |      | ✓     | ✓    |       | ✓    | ✓    |      | ✓    | 8                              |
| Hip prosthesis  | HPRO      | ✓   | ✓    | ✓      |      | ✓    |       | ✓    | ✓     |      |      |      | ✓    | 7                              |
| Knee prosthesis   | KPRO      | ✓   |      | ✓      | ✓    | ✓    |       | ✓    |       |      |      | ✓    |      | 6                              |
| Abdominal hysterectomy  | HYST      | ✓   |      |        |      | ✓    |       | ✓    |       | ✓    |      |      |      | 4                              |
| Cesarean section  | CSEC      | ✓   |      |        | ✓    | ✓    |       |      | ✓     |      |      |      |      | 4                              |
| Coronary artery bypass graft with chest incision only                 | CBGC      |     | ✓    | ✓      |      |      | ✓     |      |       |      |      |      |      | 3                              |
| Coronary artery bypass graft with both chest and donor site incisions | CBGB      |     | ✓    | ✓      |      |      | ✓     |      |       |      |      |      |      | 3                              |
| Small bowel surgery   | SB        | ✓   |      |        | ✓    |      |       |      |       |      | ✓    |      |      | 3                              |
| Spinal fusion   | FUSN      |     | ✓    |        |      |      |       |      |       |      | ✓    |      |      | 2                              |
| Rectal surgery  | REC       | ✓   |      |        | ✓    |      |       |      |       |      |      |      |      | 2                              |
| Herniorrhaphy   | HER       | ✓   |      |        |      |      |       |      | ✓     |      |      |      |      | 2                              |
| Vaginal hysterectomy; includes that by laparoscope                    | VHYS      |     |      |        |      | ✓    |       |      |       | ✓    |      |      |      | 2                              |
| Gallbladder surgery   | CHOL      |     |      | ✓      |      |      |       |      |       |      |      | ✓    |      | 2                              |
| Laminectomy   | LAM       |     | ✓    |        |      |      | ✓     |      |       |      |      |      |      | 2                              |
| Gastric surgery   | GAST      | ✓   |      |        |      |      |       |      |       |      |      |      |      | 1                              |
| Cardiac surgery   | CARD      |     |      | ✓      |      |      |       |      |       |      |      |      |      | 1                              |
| Neck surgery  | NECK      | ✓   |      |        |      |      |       |      |       |      |      |      |      | 1                              |
| Prostate surgery  | PRST      | ✓   |      |        |      |      |       |      |       |      |      |      |      | 1                              |
| Liver transplant  | LTP       |     | ✓    |        |      |      |       |      |       |      |      |      |      | 1                              |
| Appendix surgery  | APPY      |     |      |        | ✓    |      |       |      |       |      |      |      |      | 1                              |
| Kidney transplant   | KTP       |     | ✓    |        |      |      |       |      |       |      |      |      |      | 1                              |
| # of Procedures by DPH  |           | 11  | 7    | 7      | 6    | 5    | 4     | 4    | 3     | 3    | 3    | 2    | 2    | 57                             |

### *Evidence-Based Review*

Many DPHs noted that their first step towards reducing SSI was to review current evidence-based SCIP guidelines with their surgical staff. The Surgical Care Improvement Project (SCIP), a national partnership of organizations committed to improving the safety of surgical care primarily through implementing specific pre-operative and post-operative processes, has also shown promising results, especially when all elements of the SCIP bundle of processes are implemented<sup>35</sup>. Elements of the SCIP bundle include:

- Giving recommended antibiotics at the right time before surgery and stopping antibiotics within the right timeframe after surgery
- Maintaining beta blocker usages before and after surgery for heart patients
- Hair removal for surgery using electric clippers or a hair removal cream
- Removing urinary catheters on the first or second day after surgery
- Maintaining surgical patient's body temperature and blood glucose at normal levels
- Surgery patients whose doctors ordered treatment to prevent blood clots after certain types of surgeries

### *Technology Support for Performance Improvement*

In order to promote consistent compliance with the SCIP bundle elements, SCVMC created order sets that reflect current SCIP guidelines and including it in their preoperative packets in an effort to improve staff compliance.

Like many of the other Category IV interventions, DPHs working on SSI reduction are incorporating use of HIT in an effort to improve data collection and validity, as well as to improve their ability to perform SSI surveillance. For example, SJGH worked with their information technology department to capture patients with surgical site wound infections who did not have their wound cultured or were not readmitted to their hospital. To achieve this, SJGH is actively working on implementing a health information exchange (HIE) in San Joaquin County that would allow SJGH to track post-operative patients who receive their follow-up care elsewhere within the county. UCD installed TheraDoc software to streamline surgical site infection surveillance. TheraDoc is considered a gold standard data mining system that allows for the transfer of specific SSI data elements into coded fields for analysis. This software allows UCD to more accurately capture and track SSI information across its health system and improves SSI surveillance.

### *Other Interventions*

Another quality and process improvement effort includes a thorough review current processes and environmental factors that affect SSI rates. SMMC reviewed their overall operating room (OR) practices and launched quality improvement projects around improving sterilizer function and technique, as well as ventilation cleaning and updating OR cleaning protocols. The OR was also assessed to provide better control over ambient temperature and humidity. All of these process improvements contribute to best practices, beyond SCIP guidelines, that have been identified as measures hospitals can take towards

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<sup>35</sup> [http://www.jointcommission.org/surgical\\_care\\_improvement\\_project/](http://www.jointcommission.org/surgical_care_improvement_project/)

reducing SSI. SMMC's efforts in going above and beyond the SCIP guidelines demonstrate striking results early on: their SSIs decreased from 8.9% to 5.0%, an impressive 56% decrease.

#### 4.4 Hospital-Acquired Pressure Ulcer Prevention

The purpose of this project is to prevent hospital acquired pressure ulcers (HAPU) in patients receiving care in DPHs. Pressure ulcers are among the most frequent of hospital-acquired conditions, but the harm that they cause varies widely. Stage I pressure ulcers that are identified early, and responded to appropriately, result in very little cost or patient harm. Pressure ulcers that progress beyond Stage I are a much more serious problem causing significant pain and compromise of activities of daily living. Pressure ulcers in Stages III and IV put patients at significant risk for infection that can potentially result in death.

Thirteen DPHs (twelve systems) completed 54 milestones related to preventing hospital acquired pressure ulcers:

1. Alameda County Medical Center (ACMC)
2. Arrowhead Regional Medical Center (ARMC)
3. Contra Costa Regional Medical Center (CCRMC)
4. Kern Medical Center (KMC)
5. Natividad Medical Center (NMC)
6. Santa Clara Valley Medical Center (SCVMC)
7. University of California Davis Medical Center (UCD)
8. University of California Irvine (UCI)
9. University of California Los Angeles Medical Center (UCLA)
10. University of California San Diego Health System (UCSD)
11. University of California San Francisco Medical System (UCSF)
12. Ventura County Medical Center (VCMC)

#### DY 7 Milestones Accomplished:

- ✓ Report hospital acquired pressure ulcers to the State
- ✓ Share data, promising practices, and findings with SNI to foster shared learning and benchmarking across California DPHs
- ✓ Clinician training and education on HAPU prevention
- ✓ Hiring additional staff
- ✓ Preparing to use HIT to document HAPU data
- ✓ Developing and implementing standardized tools HAPU tools
- ✓ Identifying Champions on adult inpatient units
- ✓ Sharing HAPU data internally with staff
- ✓ Development of internal policies and procedures related to HAPU

#### The metrics referenced in the DY 7 reports as potential future indicators of improvement included:

- Outcome Measure: Pressure ulcer prevalence
  - A. Metric:
    - a. Numerator: Patients with Category II, III, IV or unstageable pressure ulcers
    - b. Denominator: All patients 16 years or older assessed on the day of the study

## Progress and Impact:

### *Staff Training and Education*

A common theme among the twelve public hospitals working on pressure ulcer prevention included training and education among clinical staff. The training and education spanned a wide area of topics related to pressure ulcer prevention, including: utilization of new pressure ulcer prevention equipment (mattresses, chairs, commodes), hospital-specific policies and procedures related to HAPU, “back-to-basics” training on pressure ulcer prevention bundles, how to appropriately stage and document pressure ulcers, methods to preserve skin integrity and wound care. Hospitals deployed training and education via multiple methods including lunch and learns, in-services, and written materials.

DPHs also adopted, developed, and implemented tools to help identify and prevent pressure ulcers. These tools were both borrowed from existing toolkits, like the Agency for Healthcare Research and Quality (AHRQ) Pressure Ulcer Prevention Toolkit and created individually a specific DPH system tailored to their unique needs. Visual aids were a common tool that was developed to post in all adult inpatient units. These visual aids reminded and reinforced staff training on the importance of turning patients on a regular schedule. Some visual aids were permanently incorporated into the whiteboards in patient rooms. Another tool was developed by NMC: a Bed Choice Flow Sheet/Decision Process “Support Surface” algorithm to assist nursing staff in selecting the appropriate bed for each patient in an effort to minimize skin breakdown. Other tools developed include:

- High Risk Skin Tracking Condition Tracking Form
- Photo Form
- Turn Log and Turn Clock
- Admission sheet with daily documentation of Braden Score and a more extensive skin care assessment
- Pressure Ulcer Quick Reference Tool

### *Technology Integration*

The integration of HIT was also prevalent in many DPH plans. NMC designed and implemented a new care plan for pressure ulcers and incorporated it into its electronic medical records (EHR) system. Many others, like SCVMC, are preparing to electronically document pressure ulcer information in their health information systems, which will facilitate pressure ulcer tracking and make future data collection easier for these DPHs.

### *Staffing and Equipment*

DPHs reported that the identification of pressure ulcer champions also helped to spread education and awareness among staff and provided a specific resource to other clinicians to help reduce HAPUs. Whether it was a Pressure Ulcer Prevention (PUP) nurse, a Skin Care Team Champion, or HAPU Harm Reduction Team, these pressure ulcer champions provided services such as hourly rounding, ongoing education, and wound assessment and care. These champions provided a specialized resource that the rest of the clinical staff could tap for additional support and expertise.

Several DPHs added additional staff and to purchase new equipment to help reduce pressure ulcers in their health system. ARMC hired staff to assist with data collection, analysis, and abstraction, as well as perform medical record reviews. Other hospitals such as ACMC and UCI purchased equipment such as mattresses, positioning aids, chairs and commodes to help alleviate pressure on patient's skin.

#### 4.5 Venous Thromboembolism (VTE) Prevention and Treatment

The purpose of this project is to better prevent and treat VTE in patients. VTE is a common, preventable cause of health care-associated morbidity and mortality. Approximately 1.15% of hospitalized patients undergoing surgery experience a VTE. This amounts to over 100,000 cases per year annually in the United States<sup>36</sup>.

Nine DPHs (six systems) completed 23 milestones related to VTE prevention and treatment:

1. Contra Costa Regional Medical Center (CCRMC)
2. Kern Medical Center (KMC)
3. Los Angeles Department of Healthcare Services (LADHS)
4. Natividad Medical Center (NMC)
5. San Francisco General Hospital (SFGH)
6. University of California Irvine (UCI)

#### DY 7 Milestones Accomplished:

- ✓ Report compliance with the 5 VTE process measures to the State
- ✓ Report at least 6 months of data collection on VTE process measures to SNI for purposes of establishing the baseline and setting benchmarks
- ✓ Develop and implement a VTE prevention program
- ✓ Form a VTE prevention collaborative
- ✓ Develop internal goals and timeline for implementation of internal VTE protocols
- ✓ Allocate resources to provide expert support and data collection/analysis
- ✓ Provide education program for medical, surgical and nursing staff on assessing, ordering, and discharge education for inpatient population
- ✓ Implement pharmacy management of patients on Unfractionated Heparin
- ✓ Implementation of electronic solutions

The metrics referenced in the DY 7 reports as potential indicators of improvement included:

- VTE Prophylaxis  
Metric:
  - i. **Numerator:** Patients who received VTE prophylaxis or have documentation why no VTE prophylaxis was given:
    1. the day of or the day after hospital admission
    2. the day of or the day after surgery end date for surgeries that start the day of or the day after hospital admission
  - ii. **Denominator:** All patients except as outlined by the Specifications Manual for National Hospital Inpatient Quality Measures
- Intensive Care Unit VTE Prophylaxis  
Metric:

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<sup>36</sup> <http://www.healthcare.gov/compare/partnership-for-patients/safety/vte.html>

- i. **Numerator:** Patients who received VTE prophylaxis or have documentation why no VTE was given:
      1. The day of or the day after ICU admission or transfer
      2. The day of or the day after surgery end date for surgeries that start the day or the day after ICU admission or transfer
    - ii. **Denominator:** Patients directly admitted or transferred to ICU
- Venous Thromboembolism Patients with Anticoagulation Overlap Therapy  
Metric:
  - i. **Numerator:** Patients who received overlap therapy
  - ii. **Denominator:** Patients with confirmed VTE who received warfarin
- Venous Thromboembolism Patients Receiving Unfractionated Heparin with Dosages/Platelet Count Monitoring by Protocol  
Metric:
  - i. **Numerator:** Patients who have their IV UFH therapy dosages and platelet counts monitored according to defined parameters such as nomogram or protocol
  - ii. **Denominator:** Patients with confirmed VTE receiving IV UFH therapy
- VTE Discharge Instructions  
Metric: VTE patients with documentation that they or their caregivers were given written discharge instructions or other educational material addressing all of the following:
  - i. Follow-up monitoring
  - ii. Compliance issues
  - iii. Dietary restrictions
  - iv. Potential for adverse drug reactions/interactions
  - v. Activity requirements or restrictions
- Number of staff completing VTE education course
- Development and use of data collection forms and methodology
- Use of electronic VTE order sets
- Hiring of additional staff

Progress and Impact:

To reduce VTEs in their health systems, California DPHs are addressing VTE in multiple ways. Several DPHs implemented formalized internal programs to develop protocols and policies as well as develop data collection methods and reporting forms to accurately capture data. DPHs are also dedicating resources to put systems in place that would help facilitate the collection of VTE data. Nursing time was often used for data abstraction and analysis.

*Use of Technology*

Another common element among the hospitals working on VTE was the integration and use of electronic HIT to help them collect and analyze VTE data. LADHS developed a computerized database that was installed on the laptops of their Quality Improvement staff to facilitate VTE data collection. NMC utilized a third party resource, Truven Health (formerly Thomson Reuters Care Discovery Quality System), as the repository to store and analyze their VTE data. UCI re-designed their order set for VTE



assessment and prophylaxis to guide clinicians through the assessment and appropriate selection of prophylactic measures. This order set was electronically incorporated into their health information systems to ensure that the assessment and prophylaxis is completed on every eligible patient upon admission.

#### *Shared Learning*

Given that LADHS is a multi-hospital system, they were able to develop a system-wide VTE collaborative, which included a VTE champion from each LADHS facility and a representative from the pharmacy. The collaborative kicked off in DY6 with its first face-to-face meeting. The goal of their collaborative is to share best practices for VTE prevention and treatment across their system. They learned that there was significant variation among the facilities in compliance with recognized prevention and treatment practices. Like other DPHs working on VTE, LADHS used the collaborative to identify evidenced-based practices and to standardize them across the system via internally developed protocols. A significant benefit realized by LADHS in their collaborative was their ability to leverage economies of scale to centralize data collection and share VTE expertise housed within their system.

As with all the other Category 4 interventions, all six DPHs reported their compliance with individual VTE process measures to both the State and with the Safety Net Institute (SNI). SNI analyzed data and provided participating DPH members with aggregate and individual feedback. SNI also maintained a shared repository for members to share VTE-related tools online and maintained an email ListServ to facilitate communication among DPHs working on this intervention.

#### 4.6. Stroke Management

The purpose of this project is to reliably implement the seven elements of the Stroke National Hospital Inpatient Quality Measures. Stroke is the No. 4 cause of death, a leading cause of disability, and is treatable.

Three DPHs completed 8 milestones related to Stroke Management:

1. Arrowhead Regional Medical Center (ARMC)
2. Riverside County Regional Medical Center (RCRMC)
3. San Joaquin General Hospital (SJGH)

#### DY 7 Milestones Accomplished:

- ✓ Report stroke process measures to the State
- ✓ Report at least 6 months of data collection on stroke process measures to SNI for purposes of establishing a baseline and setting benchmarks
- ✓ Hire 2 LVNs to assist with medical record review and data abstraction (shared amongst all 4 Category IV interventions)
- ✓ Hire Staff Analyst to perform report writing, data collection and analysis (shared amongst all 4 Category IV interventions)
- ✓ Train at least 25 multidisciplinary staff on stroke program protocols
- ✓ Designate personnel to establish the multidisciplinary Acute Stroke Team
- ✓ Develop uniform practice standards and protocols to effectively manage and coordinate the stroke program
- ✓ Designate physician(s) to provide 24/7 program coverage

The process metrics referenced in the DY 7 reports as potential future indicators of improvement include:

- Discharged on Antithrombotic Therapy
- Anticoagulation Therapy for Atrial Fibrillation/Flutter
- Thrombolytic Therapy
- Antithrombotic Therapy By End of Hospital Day 2
- Discharged on Statin Medication
- Stroke Education
- Assessed for Rehabilitation

#### Progress and Impact:

##### *Addition of Staff Resources*

California DPHs working on this project have taken diverse approaches in how they address stroke management in their health care systems. Yet, a common thread among the approaches included hiring additional staff to provide additional support and resources in this area. ARMC hired 2 Licensed Vocation Nurses (LVNs) to perform retrospective chart abstraction on stroke patients using CMS

specifications and to prepare reports for the internal Stroke Committee and for internal informational distribution. ARMC also hired a Staff Analyst to collect and analyze data for the DSRIP.

RCRMC also hired staff as part of a multi-faceted plan to change its organizational response to stroke. A stroke coordinator was hired to facilitate the development of RCRMC's stroke program policies and procedures, as well as to train hospital staff on the stroke program's protocols. By hiring a stroke coordinator, RCRMC was able to achieve its milestone of developing uniform practice standards and protocols, which were approved by the Medical Executive Committee.

To address the health system's ability to provide 24/7 stroke program coverage, RCRMC reassessed its contractual relationship with its neurological medical group. After review, a decision was made to contract with a different neurology group that could better meet the needs of their stroke program. As a result, during normal business hours on weekdays, for all hyperacute stroke patients, consults are now occurring within 15 minutes of the emergency or internal medicine physician's request.

#### *Staff Training and Education*

In addition, RCRMC reorganized and trained its internal staff to address stroke. RCRMC trained approximately 300 multidisciplinary staff on its newly developed stroke program protocols, including: physicians, nurses, certified nursing assistants, clinical pharmacists, physician assistants and social workers. This far exceeded their milestone goal of training a minimum of 25 staff. Topics for staff training on stroke included the following:

- Stroke recognition and triage, including neurological assessment using the National Institute of Health Stroke Scale (NIHSS)
- Stroke pathophysiology
- Stroke diagnostic studies
- Early stroke treatment, including the administration of tissue plasminogen activator (tPA)
- Recognition, assessment and management of acute stroke complications
- Stroke dysphagia training to minimize patient risk of aspiration.

As a result of training and educating its staff, RCRMC is now able to provide patients who arrive with stroke symptoms an assessment within 10 minutes of arrival, diagnostic testing within 25 minutes of arrival, and results within 45 minutes. RCRMC plans on expanding training and education on its stroke program by developing a self-study packet, including tests and competencies, which will be given to all new clinical staff. Completed tests will be required within one week of hire. Also, to reinforce training efforts, future plans include providing stroke education information on the hospitals intranet so it is accessible, at any time, by anyone.

All DPHs who are working on stroke have reported their data to both the State and to the Safety Net Institute (SNI). SNI received at least 6 months of data from all three DPHs on the 7 stroke management process measures. This allowed SNI to establish a baseline and work with hospitals on setting improvement targets.

#### 4.7. Falls with Injury Prevention

The purpose of this project is to prevent serious falls with injuries and immobility. Falls are among the most frequently reported incidents in hospitals. Unlike some other types of adverse events, many inpatient falls cause little, or no, harm, but the high overall rate of falls means that they are a significant cause of hospital-acquired injury<sup>37</sup>.

One DPH completed 2 milestones related to reducing falls with injury prevention: San Mateo Medical Center (SMMC)

##### DY 7 Milestones Accomplished:

- ✓ Report falls with injury to the State
- ✓ Share data, promising practices, and findings with SNI to foster shared learning among California public hospitals

##### The outcome metric referenced in the DY 7 reports as indicators of improvement included:

- Improvement in the prevalence of patient falls with injury will be measured by the number of falls with injury per 1000 patient days.

##### Progress and Impact:

San Mateo Medical Center (SMMC) is the only California public hospital to select Prevention of Falls with Injury as a focus of urgent improvement in care in the DSRIP program. SMMC joined the National Association of Public Hospitals (NAPH) National Safety Network Collaborative to learn from, and contribute to, the safety net community in advancing initiatives to reduce patient falls. SMMC is currently testing evidenced-based practices to reduce falls with injuries to patients.

Specific fall reduction strategies implemented by SMMC in DY7 include:

- Ongoing review of Unusual Occurrence Report (UOR) and the practice of drilling down on a case-by-case basis to determine the cause of the patient fall and what might have prevented it from occurring.
- Regularly sharing the findings from these reviews in staff meetings.
- Posting patient falls data in Medical Surgical Unit staff areas to heighten awareness and focus on the issue of patient safety and falls; updates are posted weekly.
- Fielding a pre-intervention survey to assess staff understanding of fall prevention strategies. The survey was designed to enable the future measure of the efficacy and adoption of new interventions and knowledge of current practices. A follow-up survey is scheduled for this fall. Open-ended questions provided insight into areas of staff concern, and gaps in knowledge and practice. This information is helping to guide the fall prevention team's improvement work.
- Adopting the Morse Fall Risk Assessment tool to align current practice with the electronic medical record (EHR) that will be implemented at SMMC in spring 2013. The Morse Fall Risk

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<sup>37</sup> <http://www.healthcare.gov/compare/partnership-for-patients/safety/injuries.html>

Assessment tool is embedded into the new EHR software. The team is planning to rollout a paper version of the new risk assessment this fall. In-service training for all nursing staff will be conducted and audits scheduled to test adoption.

- Training in the use of bed alarms that are a standard feature of the newly acquired beds in the Medical/Surgical unit was provided.
- Creating 5-minute shift change huddles to ensure that staff was exchanging information about patients who are at risk of falling and/or particularly vulnerable to injury if they were to fall. An internal survey indicates the staff highly values this practice.
- Installing two patient alert boards in the Medical/Surgical unit to give all staff an “at-a-glance” look at the patient mix on the floor at any moment in time. Color-coded icons were developed to denote patients most at risk for falls and patients most vulnerable to injury from a fall.

### III. Shared Learning & Innovation Activities

A key goal of the DSRIP is to innovate and test care improvement models and processes and, by doing so, help to identify best practices that can be replicated. As noted by one DPH in their year-end report, one of the “most important contributions of the DSRIP program has been the catalyzing of shared learning.” This section includes the compiled shared learning and innovation activities reported by the DPHs in their DY 7 DSRIP reports.<sup>38</sup>

In DY 7, shared learning and innovation activities occurred simultaneously at multiple levels:

1. Each DPH shared internally within various teams/departments/clinics, both through development of DSRIP plans and work toward the identified DY 7 milestones. Many report deliberate efforts to create oversight structures and communication pathways which engage providers and staff at all levels in DSRIP work.
2. The Safety Net Institute (SNI), created a set of forums for collaboration, where participating DPHs share best practices and performance improvement insights with one another<sup>39</sup>. SNI utilizes existing collaborative forums to support collaboration and, as needed, has created new collaborative forums to support DSRIP projects. DPHs took significant advantage of the collaboratives offered by SNI during DY 7 (e.g., all DPHs participate in the Sepsis/CLABSI collaborative, and all seven DPHs with milestones for project 2.5, Redesign to Improve Patient Experience, participated in the PeXT collaborative). A complete listing of collaboratives offered by SNI during DY 7 follows.

#### a. Participation in SNI Collaboratives:

- Lean Improvement Learning Community: focused on supporting the 8 DPHs that have adopted Lean system-wide by collecting and disseminating key results, lessons learned and case studies from the experience of public hospital systems that have embedded Lean as a unifying approach to performance improvement
- Spreading Palliative Care in Public Hospitals Initiative: The Spreading Palliative Care in Public Hospitals Initiative began in 2008 as a collaborative of SNI, the California HealthCare Foundation and the University of California San Francisco Palliative Care Leadership Center with the aim of spreading palliative care services in the 17 county owned and operated public hospitals in California. The Initiative has been a resounding success, having to date spurred and supported the development of palliative care teams in a full 100 percent of the eligible hospitals.
- Building Medical Homes and Improving Chronic Care: Starting in 2012, this program aims to move all public hospital primary care clinics closer to achieving the medical home components by providing a tailored approach to each participant’s needs. To achieve this, each hospital system was assigned to a medical home “tier” based on

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<sup>38</sup> Please note that there may be other shared learning and innovative activities completed by the DPHs during the same timeframe that they did not report through the DSRIP.

<sup>39</sup> For more information, please visit: <http://www.safetynetinstitute.org>.

their results thus far in integrating the Care Model into their primary care clinics, their use of disease registries and their ability to generate and use data for improvement. Tier I DPHs participated in a Medical Home Collaborative, focused on using data for improvement through the use of the Model for Improvement. Tier II consisted of DPHs that are further along with chronic care improvement and the use of registries at the point-of-care and for population health management. Tier II was offered a variety of resources and ambulatory care leader peer group convenings with local and national experts.

- Patient Experience Transformation Initiative: The Patient Experience Transformation (PEXT) Initiative is a 15-month collaborative conducted by SNI, in partnership with Experia Health, which aims to ensure that public hospital systems achieve measurable advances in the patient and caregiver experience. PEXT has three main program components: To date, 20 DPHs have participated in the PEXT Learning Community, a broad-based program of educational and mentoring support for organizational patient experience champions; 10 DPHs are taking part in the PEXT Action Collaborative, a demonstration project in which improvement teams work to rapidly transform patient and staff experience in a specific service line over the course of nine months; and all DPHs have taken part in the CG-CAHPS Implementation Network, which works to roll out the CG-CAHPS survey (per Category 3) following the development of a standardized consensus-based implementation strategy.
  - CLABSI and Sepsis Collaborative: Launched in July 2011, this 18-month collaborative includes all the DPHs and four learning sessions with expert faculty focused on data issues, implementing the Sepsis Resuscitation bundle and CLIP and trainings on performance improvement techniques; monthly webinars on specific topics; aggregation of data for benchmarking and to drive quality improvement; an IHI Improvement Advisor to train and coach teams on performance improvement and to provide individualized feedback on progress and coaching; and deployment of an expert "SWAT Team" to provide more intensive individualized support for DPHs who need further assistance.
  - CAPH/SNI DSRIP Technical Assistance: Ongoing statewide collaboration led by CAPH/SNI to provide DPHs with technical assistance with achieving DSRIP milestones. The first year and a half focused on resolving measurement and reporting issues, in collaboration with DHCS. Beginning in DY 8, this forum will be used to share best practices and challenges among DPHs participating in DSRIP, to maximize DPH success in attaining milestones and achieving true system-wide transformation.
3. Many of the DPHs also report participation in regional, statewide and national efforts with other hospitals, clinics and/or providers regarding education on best practices and lessons learned, including:
- Publishing information about HealthCare Interpreter Network implementation via the **Agency for Healthcare Research and Quality (ARHQ)'s Innovation Exchange**

- Utilizing the **American Heart Association (AHA)**'s **"Get with the Guidelines"** program to guide creation of guidelines, protocols, policies, best practices and outcome data for acute stroke patients
- Participating in the **Avoiding Readmissions Collaborative (ARC)**, a partnership between the Center for Quality System Improvement (CQSI) and the California Quality Collaborative (CQC), with the aim of reducing 30 and 90 day all cause readmission rates by 30% by December 2013
- Participating in the **Bay Area Patient Center Collaborative (BEACON)** quality initiative, that includes collaborative learning, common goals and measurement and public presentation of results of sepsis, HAPU and stroke
- Participating in **Beyond SCIP Clinical Impact Interest Group**, a 15-month Bay Area initiative focused on reducing surgical complications through in-person meetings, site visits by faculty, webinars, and peer-to-peer calls
- Participation in the California HealthCare Foundation (**CHCF**) **Healthcare Leadership Program**, teaching leaders to be effective change agents within the healthcare delivery system
- Visiting **CareOregon**, a model for patient-centered medical homes, to observe interdisciplinary teams and coordinated care, and inform efforts to create similar medical homes within DPHs
- Participating in the **Collaborative Alliance for Nursing Outcomes (CalNOC)** designed to build a dynamic nursing database and reporting system which will drive evidence-based quality improvement
- Participation in the **End-of-Life Nursing Education Consortium (ELNEC) Public Hospital Project**, a 2-year collaborative supporting palliative care nursing funded by the California HealthCare Foundation in collaboration with the California Health Care Safety Net Institute and UCSF's Palliative Care Leadership Center
- Participating on the **Healthcare Infection Control Practices Advisory Committee**, a 14-panel federal advisory committee providing advice and guidance to the Department of Health and Human Services on the practice of infection control, including CLABSI
- Participating in **HealthCare Interpreter Network (HCIN)**-sponsored discussions to share best practices and experiences with the video/voice interpreter call center
- **Healthcare Quality and Equity Action Forum**, where the opportunities to use targeted interventions to improve outcomes for vulnerable patients were discussed
- Participating in the **Health Home Innovation Fund**, a two-year collaborative supported by the California Endowment and the Center for Care Innovation, seeking to foster partnerships among safety net institutions to build integrated systems of care, propose policy changes and payment reforms, and position themselves to become providers of choice in the rapidly evolving health care marketplace.
- **HOPE Center Charrette**, to discuss best practices and models of care in care management clinics with both regional and national experts



- Creating partnerships with **Hospital Engagement Networks, such as the National Association of Public Hospitals Safety Network**, with focused efforts to reduce preventable hospital-acquired conditions and hospital readmissions
- Attending a 2-day **Infection Control workshop** sponsored by the California Department of Public Health
- Participating in the **Institute for Healthcare Improvement's (IHI) Sepsis Expedition**, a virtual collaborative with regular webinars, e-mail exchange, and a web portal to share strategies for sepsis detection and management
- Attending IHI's "**The Patient Experience: Improving Safety, Efficiency, and HCAHPS through Patient-Centered Care**", gathering information which has been used to redesign processes in order to improve patient experiences
- Participation in the **Just Culture Certification Course**, designed to support employee engagement efforts
- Ongoing partnership with **Kaiser Permanente** in the area of diabetes management, sharing information on case management practices, clinical outcomes data and process improvement projects
- Participating in an 8-hour "**Wound Care Boot Camp**", sponsored by **Medline** designed to share information about wound care best practices
- Chairing the **Metrics Group for California HAI Reporting**, with a major focus on data submission for CLABSI
- **National Association of Public Hospitals (NAPH) Fellowship program**, an interactive learning experience designed to equip senior clinicians and managers with tools to boost care efficiency within their organizations
- Sharing information about language access services at Interpret America's third **North American Summit on Interpreting**
- Participating in the **Safety First Collaborative**, an Anthem Blue Cross partnership with California regional hospital associations and the National Health Foundation in a groundbreaking collaborative to save lives, improve the quality of care and reduce spiraling health care costs for HAPU, sepsis and CLABSI
- Creating partnerships through the **UC Health Lean Six Sigma / Performance Excellence Collaborative**, with participation from all five UC medical centers
- The **University Healthsystem Collaborative (UHC)**, an alliance that fosters collaboration among more than 110 academic medical centers and 250 affiliated hospitals including 37 public hospitals, and facilitates data collection and benchmarking
- Participating in the **University Health System Consortium (UHC) Sepsis Management Improvement Collaborative**
- Attending training with **UC San Diego** on telemedicine implementation
- Attending and hosting collaborative events focused on race/ethnicity data collection (University of Massachusetts Disparities Leadership Program, Snively Lectureship Series on Improving Health Equity, California HealthCare Foundation webinars, and a California Office of State Health Planning and Development series on accurate data collection)

- Convening University of California and external healthcare professionals for an all-day colloquium and discussion of how DSRIP has brought focus and resources to advancing care delivery expansions of service, and overall improved performance
- Collaborating with other systems to share technical and operational insights related to technology implementation (EHR, business objects, disease registries, etc.)
- Participating in regular meetings with regional partners and affinity groups (e.g., local chapters of Association for Professionals in Infection Control and Epidemiology) to share guidelines, practices, policies and metrics designed to improve performance and identify opportunities for cross-entity collaboration (e.g., UCSF collaboration with Stanford and San Francisco General Hospital on complex care management)
- Sharing best practices with external stakeholders and policy experts, including making several presentations at State conferences and national conferences

As described above, these shared learning and innovation activities encompassed project work in all four categories during DY 7, and provided all DPHs with substantive support across multiple areas, including the use of data, provision of culturally competent care, team development and the use of multi-disciplinary teams to drive improvement, as well as specific work in areas of quality improvement, patient experience, patient safety, and outcomes improvement.

## IV. Conclusion

When examined as a whole, DY 7 reports from all 21 DPHs demonstrate significant progress across both the elements designed to support needed change and the elements designed to drive needed change for milestones that were defined for DY 7. This level of progress is important, as work in DY 7 was both deeper (more projects were addressed), and broader (work occurred within four Categories vs. three Categories) than in DY 6.

A review of year-end reports reveals that DPHs were largely successful in meeting their DY 7 milestones, demonstrating their commitment to making the large-scale investments and extensive changes needed to achieve results in later years of the DSRIP. The ability to demonstrate significant early progress underscores the commitment by DPHs to take full advantage of the funding and support provided through the Waiver program.

In order to drive the ambitious systems change envisioned by the DSRIP, significant cultural change must occur within DPHs. DPHs across the state recognized that health reform will bring new accountabilities and new expectations, and have devoted considerable time and effort in DY 7 to preparing physicians, administrators and staff and setting up the necessary structures for change. By investing in new organizational structures and approaches, such as ACMC's Systems Transformation Center or SFGH's Learning Center, DPHs are creating structured methods to plan, manage, align and prioritize projects within their medical centers. As stated by ACMC, "the impact of DSRIP is not limited to the specific milestones; each project is a lever to move us toward a larger goal."

The importance of DSRIP was also acknowledged by UCSD in their annual report, which states, "at a time when resources are scarce, without DSRIP, some of the additional resources required to achieve our DSRIP goals might not have been provided and we could have easily lost focus and commitment." Because of DSRIP, many DPHs were able to add necessary capacity to analyze data, review business intelligence, manage projects and support project teams, capabilities that most organizations consider critical to the success of transformation projects.

In addition to developing these basic organizational and administrative supports, DPHs invested time and energy during DY 7 to train staff on new systems and approaches. For example, Service Excellence training was initiated at SFGH in order to create an environment where patients and staff are always valued and respected. More than 100 training sessions were offered, reaching more than 3,000 staff and 340 managers. At UCD, leaders re-designed existing roles and teams to ensure that staff are working at the top of their licenses. By optimizing the medical assistant role and increasing the use of senior LVNs in clinical practice, UCD was able to implement a central RN triage function and develop a system of centralized care management.

With these systems and structures in place, DPHs are able to use data and information to determine current performance levels as baseline, which is foundational for any improvement effort. In DY 7, DPHs began to track Race, Ethnicity and Language (REAL) data, to monitor access intervals (such as third-next-available appointment) and to understand current performance for Category 3 projects focused on

improving population health. In an effort to increase the capacity of staff to use data and information to drive systems improvement, SFGH opened a Quality Data Center in DY 7 that provides analytic support to physician and staff quality improvement efforts. With information in hand, DPHs report improved abilities to identify patient information and flow challenges and to create opportunities for redesign.

To enhance performance improvement and reporting capacity, many DPHs utilized specific performance improvement approaches, such as Lean Six Sigma. For example, during DY 7 VCMC conducted a rapid improvement event, or “Kaizen” to identify and correct inefficiencies in the DPHs data collection process. Other DPHs took this one step further, inviting patients and family members to participate on Lean improvement teams. SMMC tapped into this critical source of knowledge, reporting that, as a result, staff, clinicians and executives have engaged in improvement work in a much deeper way, with more commitment to seeing the changes through to system-wide transformation.

While much of the DY 7 DSRIP work was foundational in nature, specific examples of how these interrelated projects are contributing to system-wide progress are evident. Two illustrative examples are provided below.

#### Primary Care Expansion:

A significant number of complementary DY 7 projects are designed to expand and improve primary care services within DPHs. Patient-centered medical homes (established through project 2.1 Expand Medical Homes) are beginning to provide coordinated, proactive care to DPH patients, such as timely access to flu vaccines and mammogram screenings (project 3.3 Preventive Health). Nurse advice lines (established through project 1.7 Enhance Urgent Medical Advice), and appropriate integration of behavioral health and primary care services (project 2.3 Integrate Physical and Behavioral Health Care) ensure that patients receive care in the most appropriate setting, and contribute indirectly to expansion of primary care capacity (project 1.1 Expand Primary Care Capacity). As another example, UCLA used DSRIP as a catalyst to launch the International Medical Graduate (IMG) program, which provides training to culturally competent physicians who can help expand the primary care workforce, touching two DSRIP projects in DY 7 (1.3 Increase Training of Primary Care Workforce, and 1.6 Enhance Interpretation Services and Culturally Competent Care).

#### Improved Outcomes for Diabetics:

As in the primary care example above, work to improve outcomes for diabetic patients is touched by many complementary DSRIP projects in DY 7. RCRMC is piloting a program to test care coordination for Diabetic patients across the care continuum (inpatient, outpatient, and peri-op), and is also analyzing data to test whether data collected in support of Category 4 work (project 4.3 Surgical Site Infection Prevention) to determine levels of glycemic control, can be used to inform chronic care management work underway in Category 2 (project 2.2 Expand Chronic Care Management Models). Another DPH, ARMC, is using its diabetes registry (instituted as part of 1.1 Implement and Utilize Disease Management Registry Functionality) to track mammography screening rates, which are tracked as part of a separate project (3.3 Preventive Health), and increased over the study period.

Finally, SJMC used Diabetic care to coordinate a team-based care model, resulting in not only improved health for patients, but increased satisfaction among physicians and patients as well.

In addition to the two examples provided above, DPHs identified several other cross-project connections in their DY 7 annual reports:

- Links between population management, creation of disease registries, expanding specialty care capacity, enhancing urgent medical advice,
- Correlations between the integration of physical and behavioral health and outcomes on all Category 3 projects
- Connections between the capacity to effectively manage disease, and the creation of medical homes
- Identification of Category 4 interventions as opportunities to reduce inpatient Length of Stay, resource consumption and improve outcomes
- Relationships between the creation of disease registries (and EHRs), and the ability to compare outcomes across practices and providers

A review of DPH reports in DY 7 also reveals consistent challenges, which systems must address in order to effectively transform performance. Many of these challenges hinge on a lack of reliable data to drive and track the impact of DPH improvement efforts. Systems without a fully-functional EHR (such as ARMC and VCMC) are challenged to collect, compile, and report on their performance data. Systems that are transitioning to, or implementing, EHR and/or disease registry systems (such as NMC and RCRMC) are similarly challenged, as staff must maintain paper data-collection systems, while also instituting and training staff on new electronic methods to collect information. Even in instances where EHR systems are fully-functional, collecting reliable, valid, data remains a challenge. For example, SFGH is working hard to validate their data on their influenza vaccinations in DY 7 in order to pinpoint specific opportunities for improvement.

Another challenge related to data in DY 7 involved the limited availability of clear definitions to guide data abstraction efforts. For example, project 4.1 Severe Sepsis Detection and Management, is geared toward reducing sepsis mortality and generating meaningful knowledge to contribute to the field; however, there are diverging views amongst experts in the field on sepsis, creating a challenging context for meaningful and comparable data collection across the State.

In addition to data, staff engagement stands out as an area of both challenge and opportunity that was recognized by most DPHs in DY 7. The magnitude of change driven by DSRIP is unprecedented, and many systems worry about the capacity of staff to maintain a high level of engagement throughout this transformation. Keeping staff morale high is a priority across DPHs, and as noted by SMMC, direct staff involvement in performance improvement programs (such as Lean) “is fostering staff engagement and staff empowerment that is necessary to change.” Organizations such as ACMC have implemented the System Transformation Center (referenced above) to provide leadership and direction for the many systems changes that are underway, and other DPHs, such as SJGH, have reflected on “how very

important it is to have a physician champion if we are going to be successful in changing physician behavior.”

Challenges aside, DPHs agree that the DSRIP program “has provided motivation toward system wide improvements<sup>40</sup>,” and created “fundamental and revolutionary change in our approach to quality management<sup>41</sup>.” As stated by UCSD in their annual report, “while the DSRIP initiative has been challenging, there is no doubt that it has brought focus, alignment, and accountability for key projects which are improving, and will continue to improve, the experience and outcomes for the patients we are privileged to serve. This work has helped prepare us for healthcare reform”.

As evidenced by the significant levels of collaboration, noted in Section III above, DPHs demonstrated their ongoing commitment to shared learning in DY 7. These collaborative sessions have not only created relationships which are driving accelerated improvement, but have added discipline and focus to the DSRIP project goals.

Viewed as a whole, it is clear that the 701 DSRIP milestones completed through DY 7 lay meaningful groundwork which will support DPHs in providing patients with “the right care and the right time in the right setting<sup>42</sup>,” by expanding access to care, enhancing quality, improving population health and containing costs.

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<sup>40</sup> University of California, Los Angeles, DY 7 Annual Report. Submitted 10/31/2012

<sup>41</sup> *ibid*

<sup>42</sup> Riverside County Medical Center, DY 7 Annual Report. Submitted 10/31/2012.

## Appendix A: California's 21 Designated Public Hospital Systems

The following are California's 21 designated public hospital systems:

1. Alameda County Medical Center
2. Arrowhead Regional Medical Center
3. Contra Costa Regional Medical Center
4. Harbor/University of California Los Angeles Medical Center\*
5. Kern Medical Center
6. Los Angeles County + University of Southern California Medical Center\*
7. Natividad Medical Center
8. Olive View/University of California Los Angeles Medical Center\*
9. Rancho Los Amigos National Rehabilitation Center\*
10. Riverside County Regional Medical Center
11. San Francisco General Hospital
12. San Joaquin General Hospital
13. San Mateo Medical Center
14. Santa Clara Valley Medical Center
15. University of California Davis Medical Center
16. University of California Irvine Healthcare
17. University of California Los Angeles Medical Center- Ronald Reagan\*\*
18. University of California Los Angeles Medical Center- Santa Monica\*\*
19. University of California San Diego Health System
20. University of California San Francisco Medical Center
21. Ventura County Medical Center

*\* Submitted one Los Angeles County Department of Health Services aggregate DSRIP plan.*

*\*\* Submitted one University of California Los Angeles Medical Center aggregate DSRIP plan.*

## Appendix B: DY 7 Milestones Completed by DPH

| Milestones By Category/Project                                  | ACMC | ARMC | CCRMC | KMC | LADHS | NMC | RCRM | SCVMC | SFGH | SJGH | SMMC | UCD | UCI | UCLA | UCSD | UCSF | VCMC | Grand Total |
|---|------|------|-------|-----|-------|-----|------|-------|------|------|------|-----|-----|------|------|------|------|-------------|
| <b>Category 1</b>   | 10   | 15   | 11    | 15  | 8     | 8   | 13   | 11    | 12   | 2    | 2    | 5   | 16  | 4    | 8    | 6    | 7    | 153         |
| Expand Primary Care Capacity                                    | 3    | 3    | 4     | 3   |       |     | 4    | 5     | 3    | 1    | 1    |     | 4   |      |      | 2    |      | 33          |
| Implement and Utilize Disease Management Registry Functionality | 2    | 4    |       | 2   | 2     |     | 4    | 6     |      | 1    |      | 3   | 2   |      | 2    | 2    |      | 30          |
| Increase Training of Primary Care Workforce                     |      | 3    | 2     |     |       | 3   | 3    |       | 2    |      |      |     | 7   | 2    |      |      | 1    | 23          |
| Enhance Interpretation Services and Culturally Competent Care   |      |      | 4     | 4   |       | 5   |      |       |      |      |      |     |     |      | 2    |      | 3    | 18          |
| Expand Specialty Care Capacity                                  | 2    | 5    |       | 3   |       |     | 2    |       | 2    |      |      |     |     | 2    |      |      |      | 16          |
| Enhance Performance Improvement and Reporting Capacity          | 3    |      |       |     | 2     |     |      |       | 5    |      |      |     |     |      |      | 2    | 3    | 15          |
| Enhance Urgent Medical Advice                                   |      |      |       | 3   | 2     |     |      |       |      |      |      |     |     |      |      |      |      | 5           |
| Enhance Coding and Documentation for Quality Data               |      |      |       |     | 2     |     |      |       |      |      |      |     |     |      | 2    |      |      | 4           |
| Collect Accurate Race, Ethnicity, and Language (REAL) Data      |      |      | 1     |     |       |     |      |       |      |      | 1    | 2   |     |      |      |      |      | 4           |
| Introduce Telemedicine  |      |      |       |     |       |     |      |       |      |      |      |     | 1   |      | 2    |      |      | 3           |
| Develop Risk Stratification Capabilities/ Functionalities       |      |      |       |     |       |     |      |       |      |      |      |     | 2   |      |      |      |      | 2           |



| Milestones By Category/Project                                      | ACMC | ARMC | CCRMC | KMC | LADHS | NMC | RCRMC | SCV/MC | SFGH | SJGH | SMMC | UCD | UCI | UCLA | UCSD | UCSF | VCMC | Grand Total |
|---|------|------|-------|-----|-------|-----|-------|--------|------|------|------|-----|-----|------|------|------|------|-------------|
| <b>Category 2</b>   | 6    | 16   | 6     | 11  | 11    | 7   | 13    | 16     | 7    | 2    | 9    | 13  | 17  | 10   | 18   | 8    | 5    | 175         |
| Expand Medical Homes  | 1    | 8    | 1     | 3   | 2     |     | 1     |        | 2    | 1    | 1    | 4   | 3   | 6    |      | 3    |      | 36          |
| Expand Chronic Care Management Models                               | 2    | 5    |       |     | 4     |     | 5     | 6      |      |      |      |     | 4   |      |      |      | 1    | 27          |
| Redesign to Improve Patient Experience                              | 1    |      | 2     |     |       | 4   | 3     | 4      |      |      | 2    |     | 4   |      |      |      |      | 20          |
| Integrate Physical and Behavioral Health Care                       |      |      | 2     | 3   | 5     |     |       | 3      | 2    |      | 1    |     |     |      |      |      | 2    | 18          |
| Redesign Primary Care   |      | 3    |       | 3   |       |     | 1     |        |      | 1    | 1    |     | 1   |      | 3    |      |      | 13          |
| Implement/Expand Care Transitions Programs                          | 1    |      |       |     |       |     |       |        |      |      |      | 2   |     | 2    | 5    | 2    |      | 12          |
| Increase Specialty Care Access/Redesign Referral Process            |      |      |       |     |       |     | 3     |        | 3    |      | 2    |     |     |      |      | 3    |      | 11          |
| Conduct Medication Management                                       |      |      | 1     |     |       |     |       |        |      |      |      | 5   |     | 2    | 2    |      |      | 10          |
| Apply Process Improvement Methodology to Improve Quality/Efficiency |      |      |       |     |       | 3   |       |        |      |      | 2    | 2   |     |      |      |      |      | 7           |
| Establish/Expand a Patient Care Navigation Program                  |      |      |       | 2   |       |     |       |        |      |      |      |     | 4   |      |      |      |      | 6           |
| Implement Real-Time Hospital-Acquired Infections (HAIs) System      |      |      |       |     |       |     |       |        |      |      |      |     | 1   |      | 3    |      |      | 4           |
| Use Palliative Care Programs  |      |      |       |     |       |     |       |        |      |      |      |     |     |      | 2    |      | 2    | 4           |
| Improve Patient Flow in the ED/Rapid Medical Evaluation             | 1    |      |       |     |       |     |       |        |      |      |      |     |     |      | 3    |      |      | 4           |
| Redesign for Cost Containment                                       |      |      |       |     |       |     |       | 3      |      |      |      |     |     |      |      |      |      | 3           |

| Milestones By Category/Project                            | ACMC      | ARMC      | CCRMC     | KMC       | LADHS     | NMC       | RCRMC     | SCVMC     | SFGH      | SJGH      | SMMC      | UCD       | UCI       | UCLA      | UCSD      | UCSF      | VCMC      | Grand Total |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|
| <b>Category 3</b>   | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 7         | 119         |
| At-Risk Populations (required)                            | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 34          |
| Preventive Health (required)                              | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 34          |
| Care Coordination (required)                              | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 34          |
| Patient/Care Giver Experience (required)                  | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 17          |
| <b>Category 4</b>   | 11        | 29        | 11        | 12        | 19        | 13        | 13        | 31        | 10        | 12        | 10        | 11        | 26        | 12        | 12        | 11        | 11        | 254         |
| Central Line Associated Blood Stream Infection Prevention | 4         | 9         | 4         | 4         | 4         | 4         | 2         | 4         | 4         | 4         | 3         | 3         | 4         | 3         | 3         | 4         | 4         | 67          |
| Severe Sepsis Detection and Management                    | 3         | 8         | 3         | 3         | 3         | 3         | 3         | 9         | 2         | 3         | 3         | 3         | 3         | 3         | 3         | 3         | 3         | 61          |
| Hospital-Acquired Pressure Ulcer Prevention               | 2         | 8         | 2         | 2         |           | 2         |           | 13        |           |           |           | 2         | 14        | 3         | 2         | 2         | 2         | 54          |
| Surgical Site Infection Prevention                        | 2         |           |           |           | 5         |           | 2         | 5         | 2         | 3         | 2         | 3         |           | 3         | 4         | 2         | 2         | 35          |
| Venous Thromboembolism (VTE) Prevention and Treatment     |           |           | 2         | 3         | 7         | 4         |           |           | 2         |           |           |           | 5         |           |           |           |           | 23          |
| Stroke Management   |           | 4         |           |           |           |           | 6         |           |           | 2         |           |           |           |           |           |           |           | 12          |
| Falls with Injury Prevention                              |           |           |           |           |           |           |           |           |           |           | 2         |           |           |           |           |           |           | 2           |
| <b>DY 7 Grand Total</b>                                   | <b>34</b> | <b>67</b> | <b>35</b> | <b>45</b> | <b>45</b> | <b>35</b> | <b>46</b> | <b>65</b> | <b>36</b> | <b>23</b> | <b>28</b> | <b>36</b> | <b>66</b> | <b>33</b> | <b>45</b> | <b>32</b> | <b>30</b> | <b>701</b>  |

\*Includes four DPHs: Harbor/University of California Los Angeles Medical Center, Los Angeles County + University of Southern California Medical Center, Olive View/University of California Los Angeles Medical Center and Rancho Los Amigos National Rehabilitation Center

\*\* Includes two DPHs: University of California Los Angeles Medical Center- Ronald Reagan and University of California Los Angeles Medical Center- Santa Monica

## Appendix C: Summary of Category 3 Measures and the Years in Which They Will Be Reported by All DPHs

| Summary of Category 3 Measures <sup>43</sup>                                | DY<br>7 | DY<br>8 | DY<br>9 | DY<br>10 |
|---|---------|---------|---------|----------|
| <b>Patient/Care Giver Experience Domain</b>                                 |         |         |         |          |
| <b>CG CAHPS:</b>  |         | √*      | √       | √        |
| 1. Getting Timely Appointments, Care, and Information                       |         |         |         |          |
| 2. How Well Doctors Communicate With Patients                               |         |         |         |          |
| 3. Helpful, Courteous, and Respectful Office Staff                          |         |         |         |          |
| 4. Patients' Rating of the Doctor   |         |         |         |          |
| 5. Shared Decision making   |         |         |         |          |
| <b>Care Coordination Domain</b>   |         |         |         |          |
| 6. Diabetes, short-term complications                                       | √       | √       | √       | √        |
| 7. Uncontrolled Diabetes  | √       | √       | √       | √        |
| 8. Congestive Heart Failure   |         | √       | √       | √        |
| 9. Chronic Obstructive Pulmonary Disease                                    |         | √       | √       | √        |
| <b>Preventive Health Domain</b>   |         |         |         |          |
| 10. Mammography Screening for Breast Cancer                                 | √       | √       | √       | √        |
| 11. Influenza Immunization  | √       | √       | √       | √        |
| 12. Child Weight Screening  |         | √       | √       | √        |
| 13. Pediatrics Body Mass Index (BMI)  |         | √       | √       | √        |
| 14. Tobacco Cessation   |         | √       | √       | √        |
| <b>At-Risk Populations Domain</b>   |         |         |         |          |
| 15. Diabetes Mellitus: Low Density Lipoprotein (LDL-C) Control (<100 mg/dl) | √       | √       | √       | √        |
| 16. Diabetes Mellitus: Hemoglobin A1c Control                               | √       | √       | √       | √        |
| 17. 30-Day Congestive Heart Failure Readmission Rate                        |         | √       | √       | √        |
| 18. Hypertension (HTN): Blood Pressure Control (<140/90 mmHg)               |         | √       | √       | √        |
| 19. Pediatrics Asthma Care  |         | √       | √       | √        |
| 20. Optimal Diabetes Care Composite   |         | √*      | √       | √        |
| 21. Diabetes Composite  |         | √*      | √       | √        |

\* Data from two quarters (rather than four) will be submitted

<sup>43</sup> Ibid, for complete metrics, including numerators and denominators.

## Appendix D: Summary of EHR and Registry Implementation among CA Public Hospital Systems<sup>44</sup>

| Public Hospital System                                | Inpatient EHR                      | Ambulatory EHR   | Registry   |
|---|------------------------------------|--|--|
| Alameda County Medical Center                         | Sorian                             | NextGen  | i2i Tracks   |
| Arrowhead Regional Medical Center                     | Meditech Client Server             | Meditech Client Server                                 | Homegrown registry                                   |
| Contra Costa Regional Medical Center                  | Meditech Client Server             | EPIC   | EPIC Ambulatory EHR module                           |
| Kern Medical Center                                   | MedSphere Open Vista               | MedSphere Open Vista                                   | i2i Tracks   |
| Los Angeles Department of Health Services*            | QuadraMed Affinity                 | QuadraMed Affinity                                     | i2i Tracks   |
| Natividad Medical Center                              | Meditech Client Server             | Hybrid model – Paper record and Meditech Client Server | N/A  |
| Riverside County Regional Medical Center              | Sorian                             | NextGen  | Chronic Disease Electronic Management System (CDEMS) |
| Santa Clara Valley Medical Center                     | EPIC                               | EPIC   | Homegrown registry                                   |
| San Francisco General Hospital                        | Invision                           | eClinical Works  | i2i Tracks   |
| San Joaquin General Hospital                          | NTT Data (formerly Keane) iMed EHR | Optio Quick Chart                                      | i2i Tracks   |
| San Mateo Medical Center                              | Sorian                             | eClinical Works  | eClinical Works Ambulatory EHR module                |
| University of California Davis Medical Center         | EPIC                               | EPIC   | Tethered MetaRegistry                                |
| University of California Irvine Health System         | AllScripts Sunrise Acute Care      | AllScripts Sunrise Ambulatory Care                     | Sequel server  |
| University of California Los Angeles Medical Center** | EPIC                               | EPIC   | Homegrown registry                                   |

<sup>44</sup> This data is current as of early 2012; some systems may have changed their EHR and/or registry since.

| <b>Public Hospital System</b>                         | <b>Inpatient EHR</b> | <b>Ambulatory EHR</b> | <b>Registry</b>            |
|---|----------------------|-----------------------|----------------------------|
| University of California San Diego Health System      | EPIC                 | EPIC                  | EPIC Ambulatory EHR module |
| University of California San Francisco Medical Center | EPIC                 | EPIC                  | EPIC Ambulatory EHR module |
| Ventura County Medical Center                         | Cerner               | Cerner                | Exploring vendor options   |

*NOTE: Some of the EHRs listed above are currently being implemented or will be implemented in this calendar year. Of those that have been implemented, not all have been implemented system-wide.*

*\*Includes four DPHs: Harbor/University of California Los Angeles Medical Center, Los Angeles County + University of Southern California Medical Center, Olive View/University of California Los Angeles Medical Center and Rancho Los Amigos National Rehabilitation Center*

*\*\* Includes two DPHs: University of California Los Angeles Medical Center- Ronald Reagan and University of California Los Angeles Medical Center- Santa Monica*

## Appendix E: Glossary of Terms

### 1115 Waiver Terminology:

**Delivery System Reform Incentive Program (DSRIP)** – A federal pay-for performance initiative that offers unprecedented opportunity for California’s 21 public hospital systems to improve patient health outcomes. The program is the first of its kind, and creates incentives for public hospital systems to dramatically expand upon recent quality improvement initiatives and make them system-wide.

**Category** – Four distinct, but highly interrelated, quality improvement areas identified by DSRIP as critical building blocks to increasing integration and improving patient care system-wide. California’s public hospitals have identified specific improvement projects within each of the four DSRIP categories, which have been defined as:

1. Infrastructure Development
2. Innovation & Redesign
3. Population-Focused Improvement
4. Urgent Improvement in Care

**Project** – A series of specific, DSRIP-defined, opportunities for California’s public hospitals to strengthen their infrastructure, prepare for of healthcare reform, and test strategies to slow the rate health care cost growth. Projects are designed to support the goals of each DSRIP Category (see above), with an average of nine projects identified per Category. Participation in some DSRIP projects (e.g., all within Category 3) is required, work in other project areas is optional.

**Milestone** – Project-specific markers of progress defined by DPHs and approved by CMS. DPHs provide three reports each year (two semi-annual reports, one annual report) describing progress toward identified milestones. Waiver funds are released following the successful completion of DSRIP milestones.

**Metric** – Quantitative data describing progress toward project milestones identified by DPHs.

**Collaborative** – A neutral, supportive environment for participants to plan, facilitate and coordinate the many different activities required for successful systems transformation. Collaboratives often involve frequent phone conferences, data sharing, identification of best practices, and discussion of how best to rapidly spread innovation and improvement.

**Electronic Health Record (EHR)** – digital health records including the medical and treatment history of patients in a practice

### Frequently Used Performance Improvement Terms:

**Lean** – A set of management practices based on the Toyota Production System (TPS). Lean has been successfully applied in manufacturing (factories, product design, and administrative functions) as well as service industries (including healthcare, banking and government). Lean practices focus on two key themes: 1) Eliminate waste and non-value-added activity through continuous improvement, and 2) Practice respect for people. Lean improvement practices often focus on mapping processes to identify unnecessary (or redundant) steps, and making it easy to do the right thing the first time.

**Rapid Improvement Event (RIE)** - Rapid improvement events are part of the Lean toolkit and provide a mechanism for making radical changes to current processes and activities within very short timetables. RIEs involve a methodical approach wherein a number of individuals involved in a defined process take part, work together to collaboratively and objectively evaluate a process, develop targets and make changes to achieve a desired state. RIEs extremely fast-paced change initiatives; brainstormed and implemented all within a span of four to five days.

**Six-Sigma** – A management philosophy developed by Motorola that emphasizes setting extremely high objectives, collecting data, and analyzing results to a fine degree as a way to reduce defects in products and services. The aim of Six-Sigma is to measure the number of defects in a process, and determine how to systematically eliminate them.

**Kaizen** – This Japanese term means "improvement", or "change for the better", and refers to philosophy or practices that focus upon continuous improvement of processes in manufacturing, engineering, and business management. Kaizen refers to activities that continually improve all functions, and Kaizen events deliberately bring together employees from various departments to examine a problem, propose solutions, and implement changes. Kaizen events usually take place over one or two days.

**PDSA (Plan Do Study Act)** – A structured trial of a process change drawn from the Shweart cycle, which includes the following steps: 1) **Plan** — a specific planning phase, 2) **Do** — a time to try change and observe what happens, 3) **Study** — an analysis of the results of the trial, 4) **Act** — devising next steps based on the analysis.

**Small test of change** – Deliberate efforts to sequentially build knowledge by testing ideas for change on a small scale (i.e., the next three patients, the next two days, etc.). Using small tests of change allows systems to avoid the (potential) pitfalls of going directly from planning to implementation. Testing on a small scale can also reduce resistance and increase buy-in among stakeholders.