



CALIFORNIA HEALTHCARE FOUNDATION



Channeling the Flow:
Data Infrastructure for Population
Health in the Safety Net

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About the Foundation

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As health care transitions from an episodic to a population health model of care, advances in data standards and interoperability are making data increasingly portable across provider organizations and information technology (IT) systems. These improvements require concomitant advances in infrastructure to channel and manage the flow.

This report examines the data infrastructure to support the move to a population-health model of care in California's safety net. It looks at the tools, processes, and approaches currently in place and planned for the near future.

Population health management (PHM) entails a significant change in mindset for most provider organizations, including hospitals and clinics in the safety net. PHM requires that providers take responsibility for the health outcomes of their patients through both care management activities (prevention, chronic condition management, care coordination) and risk management (clinical and financial analytics, performance monitoring, and reporting).

The transition brings with it new language (see box) and greater integration of technologies. For example, among IT vendors, products that had previously been identified as data analytics, care management, and even health information exchange (HIE) solutions are now being bundled and branded as PHM platforms.

California's safety net includes hospital systems (city/county, nonprofit, district, others with Medi-Cal contracts), clinics (FQHCs and similar community health centers; free, rural, and mental health clinics; county clinics), and private doctors providing contracted or charity care. Safety-net programs, which typically use income to determine eligibility, include Medi-Cal and Healthy Families, county programs for the uninsured and indigent, and specific programs targeting focused populations.

The PHM improvement cycle includes the following steps: (1) identifying and monitoring cohorts of patients within an overall population according to specific demographic, clinical, and/or administrative criteria, (2) implementing care management interventions down to the individual level within these cohorts, (3) tracking the impact on outcomes, and (4) revising the composition of targeted cohorts or modifying interventions based on lessons learned. Each of these steps presupposes data liquidity, quality, and density, but also appropriate organizational and IT systems to make data sets meaningful, user-friendly, and actionable.

The research for this report included 13 qualitative interviews with leaders in the field, an online survey of health information exchange (HIE) organizations, and literature review, supplemented by the authors' direct experience with health care organizations and communities. The research produced five primary findings, which are discussed below.

Frequently Used Terms

Data quality refers to the reliability and consistency of data such that they can be effectively processed and analyzed.

Data liquidity refers to "freeing" data from their source systems for sharing within and between organizations.

Data infrastructure is the composite of organizational and IT systems for enabling, managing, and monitoring data flows.

Data assets are specific organizational and IT vessels for data, usually integrating operational, policy, and IT elements, and including the data contained or managed within them.

Data density refers to the richness of data points in a particular system or in relation to some criteria.

Data awareness indicates an organizational perception of the data distributed throughout its systems and of the value of these data.

Research Findings

FINDING 1. *Many safety-net provider organizations in California have begun to conduct PHM with their existing data assets.*

Community health centers (CHC) and public hospital and health systems have significant experience using IT systems for quality improvement and population health management programs. CHCs have been early adopters of products such as disease registries, and they generally participated in the EHR Incentive Program from its outset. Many CHCs are using registries and EHRs to power basic population health interventions by making lists of targeted patients, reviewing daily reports, and conducting outreach.

Some public hospital systems in California are also performing data-driven PHM through specific programs and departments. In one of many examples, the Athena Breast Health Network, a collaboration among University of California health systems, is centered on a longitudinal study on breast health. With 70,000 participants, the initiative uses the Salesforce platform to deliver personalized prevention, screening, and treatment.

FINDING 2. *The early-stage PHM efforts are driven by specific programs and reporting requirements, and focus on specific subsets of patients. Typically, they use IT systems that are either siloed or integrated in an ad hoc manner with other IT systems within the provider organization.*

This research did not find a single California safety-net organization that was practicing PHM throughout its organization—for all of its patients—with an integrated data solution or single centralized platform. Instead, it found separate IT systems in different departments and settings, purchased at different times for different purposes, often with limited integration. The public hospitals and health systems, as well as the CHCs, generally lack an overall data strategy or integrated approach to managing data to improve outcomes across the enterprise. One observer cited the lack of integration as a reason that CHCs have “reached a plateau in terms of what comes next” for data-driven performance and PHM.

Exacerbating the fragmentation of data assets, tracking and reporting on quality measures are typically defined by specific external programs targeting narrowly defined patient populations. These include quality programs, pay for performance and other payer initiatives, “meaningful use,” public health reporting requirements, and research efforts.

While EHRs are the primary IT tool for care delivery, they are not centralized hubs for PHM in the safety net today. EHRs were designed as transactional systems to support documentation of discrete episodes of care for payment in a fee-for-service environment. One interviewee noted that, as many CHC organizations have just spent hundreds of thousands of dollars on EHRs, “It’s a hard sell to tell them that they are going to need more than their EHRs for population health management.” Most CHCs in California have either NextGen or eClinicalWorks (eCW) and are reluctant to replace it. With limited resources, CHCs are aiming to extend and integrate their existing systems, including their EHRs, for population health management to the extent possible.

Public hospitals, in contrast, are in the midst of what another interviewee described as an “EHR 2.0” wave as they move toward more consolidated enterprise systems. This involves replacing their smattering of existing EHRs with a single enterprise EHR across their departments, care settings, and lines of business, including their outpatient clinics. Most are migrating to Cerner, Epic, or McKesson as the hospital EHR market continues to consolidate. For the hospitals in the midst of this EHR 2.0 transition, procurement and implementation of major data analytics and population health management platforms are a secondary priority. But some, such as LA County Department of Health Services and San Mateo County Health Department, are developing plans to implement data warehouses to serve as the back end for future analytics functionality to support PHM.

Challenges with Data Quality and Standards

Many interviewees noted a lack of data quality due to variable documentation practices among clinical staff in the EHR, which has flow-down effects on the capability to leverage clinical data in aggregate form for PHM activities. One executive noted that even though his organization will implement an enterprise-wide PHM infrastructure in the next 12 months, ripping-and-replacing legacy QI systems developed in a pre-standards environment, he does not expect the new system to be any more efficient

until standards “catch up” and organizations enforce greater data quality at the source—processes that may take years in some cases.

Others noted the persistence of customized legacy systems designed to measure quality metrics that themselves were customized to meet specific organizational, regional, or population-based needs prior to the consolidation of national quality measures and data standards. In more than one case, the continued presence of these systems has contributed to fragmented IT ecosystems and resistance to overarching data management.

FINDING 3. Value-based and risk-sharing payment models are driving the transition from the episodic model of care to PHM.

The nascent move toward value-based and risk-sharing payment is a primary driver of PHM plans and activities. Medi-Cal has delegated over 90% of its financial risk to managed care plans that are positioned to experiment with new payment models within their service areas.

While there is an increasing awareness among CHCs that the FQHC fee-for-service prospective payment system (PPS) will evolve, it has not yet changed enough to drive the PHM approach among most clinics. In cases where Medicaid managed care plans have begun to implement value-based payment programs, the percentage of payment for performance remains in the low single digits, which may not be high enough to motivate widespread behavior change. Nevertheless, forward-thinking CHC

Piloting Value-Based Payment

A number of CHCs in California are participating in a payment reform pilot with the California Primary Care Association (CPCA) that is aligned with a CPCA-proposed bill in the legislature (SB 147).

These CHCs will be required to define their assigned members, necessitating a qualitative change in mindset away from the episodic care model. Pilot participants will receive capitated payment for these members and will be accountable for their health outcomes in ways requiring new approaches to data management.

executives anticipate that more change is coming, and they have begun to respond accordingly.

According to one interviewee, among California’s public hospitals and health systems, at least three are capitated (San Francisco, Santa Clara, and Los Angeles), with a few others moving in this direction, including San Mateo. Most others have a mix of fee-for-service, capitation, and value-based payment programs. They generally understand that the direction is toward more risk-sharing and value-based payment, with abundant signs such as the New York Delivery System Reform Incentive Payment (DSRIP) waiver increasing state Medicaid risk-sharing to global capitation over the next five years. Similar trends are projected in California, with renewal of its waiver funding from CMS in 2016.

Such changes in payment are motivating safety-net provider organizations to take responsibility for health outcomes and focus seriously on the quality measures that impact payment. One provider system executive noted that his organization “measures the things that it is paid to measure.” A payer representative acknowledged this dynamic, stating, “We want organizations in our provider network to survive and grow, and that requires financial resources. So we look very hard before selecting measures with money at stake.” Quality measurement enables transparency in comparative performance data between peer counties, provider organizations, care teams, and individuals, often generating a positive motivation for outcomes improvement that directly complements payment incentives.¹

Two health care executives shared the challenges created by having one foot in fee-for-service and the other in a capitated environment. One expressed his shock to see advertising billboards from his organization touting short emergency department (ED) wait times, given organizational goals to reduce unnecessary ED utilization. The second executive pointed to a successful intervention with recently discharged patients to reduce hospital readmission rates; the resulting drop in readmissions caused a revenue problem for the hospital. Both executives observed that such disconnects will continue to occur without a wholesale shift to a new payment model that supports PHM.

FINDING 4. Organizational realignment around data strategy and governance is required for data-driven performance and population health outcomes improvement.

In a recent study by Deloitte, the second most cited barrier to the adoption and use of data analytics among health care organizations was “fragmented ownership,” with 29% of respondents identifying this as a serious barrier.² “Ownership” here means responsibility or authority for a program or asset within a health care organization. Given the fact that PHM and data analytics projects impact so many people and departments within an organization, several interviewees made the point that the transition to PHM is as much about people, skills, and understanding as it is about technology.

These human and organizational factors are all over the map in the safety net in California today. With existing appointment wait-times of 45 days even for primary care visits in some cases, the operational strain within organizations can easily swamp sustained leadership focus on implementing PHM activities. For this reason, organizations such as CAPH, CCI, and CPCA³ have all launched education and training programs to build organizational capacity for effective data analytics in support of PHM. In the process, these programs are helping leaders see data as an asset to define and monitor the populations for which their organizations are increasingly held responsible. Given the magnitude of this transformation, one interviewee expressed the opinion that data strategy should not be led by IT, but rather by clinical, financial, and operational leaders.

A key “aha” moment for a number of the CHCs participating in one of these educational programs has been the realization that data management within their organizations does not belong to one or two units alone (IT, clinical), but rather “this is a part of everyone’s roles, and analytics and being data-driven is a web of resources and skills and roles; better awareness of the people and processes that need to be the foundation for an analytics program” is at the forefront of this transition. To facilitate change management toward such organizational data awareness, leadership must be well aligned in vision and approach. Several organizations experiencing success with this transition shared that they have instituted interdisciplinary internal teams to drive coordinated change

management and generate momentum for PHM, often comprised of an even representation of executives, clinicians, and front-line staff. See sidebar on OLE Health.

OLE Health

OLE Health, an FQHC based in Napa County with six facilities in the area, is in the vanguard of the safety-net transition from the episodic care model to PHM. It has identified seven clinical quality measures that it prioritizes across the organization, focusing on clinical practices and operational processes that improve population health outcomes.

For years, OLE Health has participated in the traditional pay for performance program with the Medicaid managed care plan in their region, Partnership Health Plan. More recently, it joined the Redwood Community Care Organization’s Medicare shared savings program ACO, and will likely be participating in a pilot with the California Primary Care Association to test a value-based alternative payment model.

To facilitate the needed changes for PHM, OLE created a Care Redesign Team composed of clinical and administrative leaders. Positive initial experiences and the prospect of cost savings for OLE Health, its payers, and its patients provided motivation. At the operational level, OLE is experimenting with embedding panel management directly into care teams to integrate the focus on improving clinical quality outcomes with the daily routines of care providers.

OLE uses both internal and shared data assets to support its PHM transformation. Internal assets include EHRs, registries, and dashboards and reporting tools developed by an inhouse programmer. The shared data asset with the greatest usage is provided through a Medicare ACO organized by Redwood Community Health, a community clinic consortium (see page 9). OLE and other ACO participants have access to eCW’s population health analytics platform, the Care Coordination Medical Record (CCMR). OLE is using the CCMR for a complex care management program focused on Medicare ACO patients initially, identifying and monitoring patients at the highest risk and cost, with specific conditions, with a high number of hospital and ED visits, or similar characteristics.

Integration of PHM with Care Delivery

Several interviewees expressed the view that care management to improve population health outcomes is most effective when directly integrated into clinical practice and the daily routines of care teams, rather than when it is a separate, stand-alone activity by care managers based in health system enterprises, health plans, or other intermediaries. One stated that large-scale outcomes improvements will only be generated by health centers drilling down into their own data to identify high-risk populations and low performers, and then using this data to inform the care that is delivered.

Moving from an identified group or cohort to an individual patient's chart or care plan, and then pushing data back to the group level to inform and track outcomes, is an essential requirement for effectively engaging front-line care teams in PHM. Top-of-the-line vendor platforms for population health management promise to do this seamlessly. But without such infrastructure, safety-net organizations must develop creative strategies to bridge the gaps between their different tools and systems, especially when seeking to use existing EHRs and registries to maximum effect.

FINDING 5. *Intermediary organizations serving multiple provider stakeholders are beginning to deliver essential data services for PHM, especially in the ambulatory setting.*

A range of intermediary organizations provide data infrastructure supporting PHM within safety-net organizations. Their primary advantages include access to broader data sets and lower relative IT infrastructure costs due to economies of scale. The following intermediaries are based in specific geographic communities, serve specific provider networks, or are defined by their services model:

- ▶ Health center networks
- ▶ Medicaid managed care plans
- ▶ Large-scale health system enterprises
- ▶ Health information exchange organizations (HIE)
- ▶ Public health departments
- ▶ Accountable care organizations (ACO)

Health Center Networks

Networks such as clinic consortia support CHCs with IT infrastructure and data management in much of California. Some networks enable PHM services among their member organizations, representing a significant consolidation of PHM functions among ambulatory providers in the safety net. Clinic networks provide CHCs an option for developing common IT infrastructure to enable data liquidity and density, while layering on key PHM services such as clinical data analytics and care coordination tools across a broad, often geographically delineated population. PHM infrastructure and services are measurably more affordable to individual CHCs through shared networks due to economies of scale. This value proposition is further enhanced when individual CHCs can benchmark their metrics with others in their network. One network leader stated that the most valuable service his organization provides is “laying the runway for IT projects” among its membership, clearing technical, governance, and administrative roadblocks in advance of complex implementations.

Among the networks that have successfully implemented PHM services, most have clinic members using the same EHR vendor or a very limited number of vendors. Some networks that developed a shared approach to “meaningful use” also selected a common EHR, which has borne fruit in this next stage of infrastructure development, making data liquidity easier to manage since a smaller number of common platforms are involved. With a background in quality improvement (QI) and HRSA grant management, these networks tend to focus on clinical data analytics and cohort management around specific chronic disease states (tied to specific QI initiatives) rather than on financial risk management. Given their multi-stakeholder nature, the networks must clearly define comprehensive data governance frameworks (as opposed to individual data governance agreements on a project-by-project basis) or risk delayed implementations of collective technical services.

Medicaid Managed Care Plans

These plans are essential partners for safety-net providers in the transition to PHM, supporting the data infrastructure in three primary ways:

1. Because of the high level of delegation within the Medi-Cal program, plans are well-positioned to enact value-based and risk-sharing payment models in their local service areas. For many plans, pay for

performance, delegation of risk, and value-based payment tied to specific population health outcomes represent future activities rather than current programs. While most of them are moving in this direction, the more advanced plans actively use data to spot trends and inform payment across their network in relation to variables such as ED utilization and CT scan rates.

2. Some plans provide their claims data to providers in their network and to trusted intermediaries such as clinic networks and HIEs. Combining claims and clinical data together closes gaps in data quality and results in much greater data density for population health efforts, whether at the community or provider organization level. In some cases, the plans act as data brokers between provider organizations. One clinic network reported that it receives data on admittance and discharge from hospitals on a 24-hour basis from the two Medicaid managed care plans in its county rather than directly from those hospitals.
3. Medicaid managed care plans provide training and financial support for multi-stakeholder quality improvement, health information exchange (HIE), and data management initiatives in their provider networks. The following plans are prime movers of HIEs in their regions: CalOPTIMA, Health Plan of San Joaquin, Inland Empire Health Plan, LA Care, and Partnership Health Plan. HIE has emerged as an important means of combining clinical and claims data for coordinated patient care, if not yet for population health management (see HIE section below).

Effective managed care plan data sharing and analytics are far from universal, however. One interviewee noted that while some plans are data driven and want to provide utilization data to their member health centers, the data-sharing discussion often goes nowhere. Data exchange between CHCs and health plans often occurs only “by brute force,” the interviewee said. For clinics there are barriers involved in submitting data to health plans, and for health plans there are barriers to submitting meaningful data to CHCs on utilization and on services their patients receive from other provider organizations. Thus, data liquidity between plans and safety-net provider organizations is often not sufficient to create high-density data sets combining clinical and claims information in a standardized, replicable manner.

Large-Scale Health System Enterprises

Private health systems serving the safety net are also pursuing data management strategies for PHM. Examples in California include Adventist Health, Dignity Health, Kaiser Permanente, Prime Healthcare, Sutter Health, and Tenet Healthcare. Their position in the state continues to grow, as they build new facilities, purchase stand-alone hospitals, and forge closer bonds with medical groups and physician practices.

Most large-scale systems are focused on enabling internal data liquidity through “enterprise HIE” infrastructure that either sits on top of an enterprise EHR deployment, or is interfaced with the primary EHRs used in their system. Data exchange with providers outside their systems and PHM are secondary priorities, although the systems generally plan to roll out population health services for their members in the next one or two years and to implement various models of external data exchange in that same timeframe.

Health Information Exchange Organizations (HIE)

HIEs are active in California. The California Association of HIEs (CAHIE) has 17 current HIE members, with several others in the queue. These organizations include community HIEs, which are generally nonprofit and geographically based, as well as enterprise or “private” HIEs within large health systems.

For this report, CAHIE members were surveyed about their approach to providing PHM services. The seven responses confirmed that HIEs in California are currently focused on enabling data liquidity within the communities they serve; some use hub-and-spoke data delivery into participants’ EHRs, while others use consolidation of data into central repositories accessed by a user web portal; some combine the two methods. None of the responding HIEs had the capability to enable data analytics for PHM today, but four stated that they plan to in the next one to two years. Some in the HIE community have noted a shift from federated to centralized architecture models in recent HIE implementations. They speculated that this is related to HIEs positioning themselves to provide community-level data analytics for PHM.

CallINDEX, a California-based HIE launched in 2014 with the financial backing of Blue Shield of California and Anthem Blue Cross is working with its vendor, Orion Health, to develop and implement a new data platform

enabling sophisticated analytics and reporting functionality on a statewide scale. CallINDEX and Orion will pre-load this platform with payer and provider data providing ACO clinical quality measures given their current market focus, with the ability to easily add measures for other payment and quality programs. Other HIEs in the state contracting with Orion Health may adopt this new platform in 2016 or 2017; this includes Central Valley HIE, ConnectHealthcare, Inland Empire HIE, and San Joaquin Community HIE. Second, CallINDEX will offer its participants the ability to receive data through “bulk downloads” on all of their attributed patients. Clients will then be able to import these data extracts into their own data warehouse or analytics platform for PHM. Other HIEs are considering similar functionality.

Generally, both public and private HIEs are well positioned to enable PHM infrastructure as a next logical step beyond their current service lines, providing community- and organizational-level data depending upon the circumstances. The primary challenges in this process are availability of funding, particularly in the case of public HIEs, which often do not maintain reserve capital for such investments, given their tendency toward not-for-profit business models; migration of HIE platform capabilities to support PHM functionality; and policy and business issues relating to data sharing for PHM.

County Public Health Departments

County public health departments have a growing interest in enabling PHM for community health. Many local public health departments have been conducting epidemiological analyses of their county populations for decades, often relying on legacy systems or paper-based approaches for data evaluation. As health care organizations have begun to implement EHR systems and digitize their records, local public health agencies have sought to leverage these electronic data. The increase in perspective associated with having electronic and structured clinical data available for analysis has allowed public health departments to branch outside of traditional epidemiological use-cases such as monitoring disease outbreaks or tracking vaccination rates. They have begun additional analytics activities that mimic some PHM use-cases and functions, such as chronic disease management and the operation of dynamic clinical registries.

Solano and San Diego Counties present intriguing examples of counties that have already adopted a comprehensive PHM analytics system that is in use among

health care organizations in their regions. Solano County partnered with San Diego County and UCSD to deploy a product called the Public and Population Health Hub (known as PPHealthHub), a cloud-based data analytics platform that tracks public health data required to be submitted under the “meaningful use” program. PPHealthHub organizes the data into clinical data registries (such as a local immunization registry and a local syndrome surveillance registry) that also operate as data points that can be queried in longitudinal, multi-variable studies. All of the organizations that contribute data to PPHealthHub can run analytics on their own data, as well as benchmark those data against community-level data. The entire data set can be granularly queried by county epidemiological staff. In this manner, the county public health agency provides a key component of PHM functionality to all organizations in the county that participate in the project.

Accountable Care Organizations (ACO)

In commercial health care sectors in California and nationally, ACOs have become a primary organizational form for PHM. In an ACO, hospitals, physician groups, and other providers—usually all with a shared patient population—jointly take on risk from Medicare or a commercial insurer, becoming accountable for a robust set of monitored health outcomes of their population. In California’s safety net, Medi-Cal and its managed care plans have not promoted ACO structures as part of payment reform and the transition to PHM. Thus, safety-net provider organizations do not generally participate in ACOs. However, there are two notable exceptions, Redwood Community Health and the National Rural ACO.

Redwood Community Health, a health center consortium based in Petaluma, launched a Medicare Shared Savings Program (MSSP) ACO on January 1, 2014, under a spin-off nonprofit called the Redwood Community Care Organization. The ACO uses the population health analytics platform of its EHR vendor, eClinical Works (eCW), which is called the Care Coordination Medical Record (CCMR). (See the sidebar on page 6 for details.)

The National Rural ACO (NRACO) operates MSSP ACOs composed of provider organizations in rural regions throughout the US. By expanding ACOs across broad geographies, NRACO enables rural communities to band together to reach the threshold of 5,000 patient lives to qualify for MSSP ACO status. The California footprint is relatively small today, focused along the US-395 Corridor

east of the Sierra Nevada, and into the El Dorado County Tahoe-Truckee region.

NRACO uses a PHM platform from Lightbeam Health Solutions. It enables NRACO staff and users at participating sites to monitor population health outcomes, easily create cohorts of patients based on specific criteria, drill down from the cohort level to individual patient records and care plans, and conduct benchmarking to compare performance. Such a comprehensive PHM platform would not be affordable to these ACOs or their participating facilities on an individual basis.

The primary tradeoff for organizations participating in either Redwood Community Health's ACO or NRACO is the current exclusive focus on Medicare patients. Because of this, safety-net ACO participants are not using these robust, shared PHM assets to manage cohorts across their entire populations, although they are well-positioned to broaden their population focus in the near future. In 2016, National Rural ACO is poised to begin establishing clinically integrated networks (CINs) in many states across the US. This new organizing structure for providers will allow them to broaden and leverage their MSSP infrastructure and analytics tools as practices move to contract with additional payers for new value-based programs.

Public Health Registries

Regional and statewide public health registries are an important element of the data infrastructure in the state. They include chronic disease registries for conditions such as cancer, public health-focused registries such as those for immunizations, blood-lead levels, and deaths. Many of the clinical registries operated by the state have been consolidated under a statewide public health submission gateway called the California Department of Public Health - Health Information Exchange Gateway; this allows provider organizations and other stakeholders to more easily contribute data to them.

While the potential public health benefit from registries was acknowledged by interviewees, some noted that registries can be seen as "black holes" into which data are sent to satisfy legal or program requirements but which offer little or no value back to individual provider organizations. However, recent communications from state agencies and registries have stated that bi-directionality of registries on the CDPH HIE Gateway is a priority for the state and is on the roadmap for implementation.

When this happens, registry data assets may become powerful tools for PHM activities. Further, the California Health and Human Services Agency has embarked on an ambitious agency-wide IT governance initiative that may further encourage progress.

Recommendations

The following recommendations for accelerating the transition to the PHM model in California's safety net address policy and business decisions confronting health care organizations from the local to the state level.

- ▶ Safety-net provider organizations should begin adopting the PHM model to position themselves to thrive in an increasingly transparent and value-based environment, and to reduce disparities in health outcomes. This will require a more intentional enterprise-wide approach to data infrastructure and management than most safety-net organizations have implemented to date, including a focus on data quality in EHRs and other source systems.
- ▶ Safety-net providers moving toward PHM should develop enterprise-wide priorities and change management strategies to establish coherence across their quality and payment programs. This will address "ownership" issues affecting the use of PHM data assets, effective use of legacy systems, and integration of care management with PHM and risk-management strategies.
- ▶ Multi-stakeholder intermediary organizations such as clinic networks and HIEs should consider implementing shared population health infrastructure with safety-net organizations that may not have the resources to obtain such assets on their own. This will lead to greater community-level data, benefiting local population and public health initiatives while leveraging economies of scale.
- ▶ HIEs are particularly well-positioned to offer PHM services, as they achieve good governance and data liquidity, quality, and density in their regional and/or enterprise service domains. State policy-makers should provide funding for community HIEs to expand their services to include PHM given the significant technical and policy lift that

may be required to move to this next stage of collaborative activity.

- ▶ Stakeholders should assist provider organizations — especially those such as clinic networks that are embarking on shared-services models to achieve PHM — in establishing data-governance and policy frameworks that support shared assets for population health similar to the Model Modular Participation Agreement (MMPA) that was developed by CalOHII for HIEs.
- ▶ Technology vendors developing data integration and analytics services for PHM should build their products to meet robust interoperability standards and the needs of multi-organizational collaboratives. This will support safety-net networks in leveraging economies of scale to access sophisticated PHM tools.
- ▶ Medi-Cal managed care plans should advance more robust value- and risk-based payment programs including ACO-type arrangements that would encourage “vertical” data integration in local communities between hospitals and primary care. The Department of Health Care Services should encourage such initiatives.
- ▶ County health departments should facilitate community planning for PHM or work to provide services where no infrastructure exists. Counties can play an effective role as neutral conveners to facilitate regional planning for HIE and PHM services.
- ▶ State agencies should continue working to integrate public health assets and to open resources such as statewide registries to bi-directional use by provider organizations.

Conclusion

While the data infrastructure for PHM in California’s safety net has many gaps, it is consistently gaining strength. The intellectual argument in favor of the PHM model is perceived to have been won, and the expectation that the safety net must move in this direction is motivating health care leaders and organizations throughout the state.

The dissemination of better data, and better tools, and thoughtful uses of them will give safety-net organizations their best opportunity to improve the health of the people whose outcomes they are increasingly accountable for, even after these individuals walk out the clinic door.

Interviewees

Robert Beaudry and Andie Patterson
California Primary Care Association

Rayna Caplan
National Rural ACO

Scott Christman
Office of Statewide Health Planning and Development

James Deck
MTS Healthcare

Molly Hart
Community Health Center Network

Mike Hogarth
University of California, Davis

Wendy Jameson
OLE Health

SA Kushinka
The Center for Care Innovations

David Lown
California Association of Public Hospitals /
Safety Net Institute

Bela Matyas and Meileen Acosta
Solano County Health and Social Services

Ali Modaressi
L.A. Care Health Plan

Robert Moore
Partnership HealthPlan of California

Ray Parris
Golden Valley Health Centers
Central Valley Collaborative

Sean Turner
Dignity Health

Jonathan Yeh
Health Plan of San Joaquin

Endnotes

1. According to this interviewee, altruism and personal commitment also generate important emotional reasons that individuals seek performance improvement, but they are not scalable for a health insurer.
2. *Health System Analytics: The Missing Key to Unlock Value-Based Care*, Deloitte Center for Health Solutions, June 2015, www2.deloitte.com (PDF).
3. These organizations are the California Association of Public Hospitals and Health Systems (CAPH), the Center for Care Innovations (CCI), and the California Primary Care Association (CPCA).