

# Population Care Information Systems (PCIS): Managing the Health of Populations with KP HealthConnect

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KP HealthConnect creates an opportunity for Kaiser Permanente (KP) to practice population care management (PCM) on a scale unparalleled elsewhere on the planet. The Care Management Institute (CMI) is spearheading an effort to make sure that this potential is realized.

PCM, conducted by the KP Regions in collaboration with CMI leadership and support, is already a core strength of KP. Regions, learning from one another and building on innovations, have developed

PCM programs that demonstrate a clear impact on health outcomes.<sup>1</sup>

Information systems that identify and stratify populations, support inreach decision support (member-specific point-of-service messages to providers that prompt certain actions) and outreach (communication to members by mail, telephone, or e-mail), and track outcomes are key to PCM. All eight KP Regions independently developed PCM

information systems and migrated toward interregionally consistent population definitions and outcomes measures. From a KP Program perspective, regional information systems currently support PCM in patch-

work fashion. The advent of KP HealthConnect, on the other hand, represents an opportunity to create a finely woven tapestry of PCM that covers every KP member programwide—consistently, effectively, and efficiently.

## What's Possible

As an example, consider important research findings like those of the recent Heart Protection Study.<sup>2</sup> The finding that a moderate dose of lipid-lowering statins protects against adverse cardiovascular (CV) events in members with coronary artery disease and diabetes has clear implications for managing the population at risk for adverse CV events. Currently, ongoing outreach efforts in all KP Regions seek to make sure that every member at risk for an adverse CV event has the opportunity to benefit from the protective effect of statins. Outreach efforts vary between the regions; so, too, does the rate at which the percentage of members with diabetes on statins increases.

Once KP HealthConnect—and customer relationship management (CRM) software—is fully in place, every KP member throughout the program could receive notification in the manner of their choosing about the importance of taking new

medication, such as statins. Members would also benefit from the best and most recently published research as soon as it became accepted policy; PCM staff could send prescriptions for the newest appropriate and affordable medication to hundreds and even thousands of members at a time—with little effort or technical expertise. Similarly, depending on their preferences—which would be available in the electronic health record—some KP members would receive personalized outreach messages by mail or phone. Others would prefer to access them through MyChart, the member interface into KP HealthConnect.

Depending on their preferences, which would be stored in the electronic health record, some KP members would receive personalized outreach messages in the mail or over the phone. Others would receive them through MyChart.

MyChart has significant potential to enhance PCM by helping individuals access both the information and health resources to take the steps they need to manage their own health care. Particularly in chronic disease, the member and the member's family must take key steps toward lifestyle modification and improving health status.

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MyChart also holds the potential to liberate some health care from the confines of inpatient and outpatient settings. Although clinic visits and hospital stays will continue to be necessary elements of health care, the potential for fast, direct communication between clinician and member means that some care can take place outside both traditional settings. One likely scenario is in diabetes care. If members are able to electronically transmit data on blood glucose home monitoring and clinicians can recommend insulin or oral hypoglycemic changes via e-mail, the member's home becomes the locus of care.

KP HealthConnect will also create the largest and most diverse database in the country—and in the world. Cradle-to-grave data will be available on eight million people. The potential for research into disease risk factors and causative factors, including genomics, and for effective treatment is staggering.

But none of this will happen overnight—or without concerted effort.

### Population Care Information Systems

To make sure that KP receives the maximum PCM benefit from KP HealthConnect, an interregional group of stakeholders, KP HealthConnect management, and representatives from Epic, KP-IT, and the Regions assembled to address the question: How can KP HealthConnect support PCM in the near future and over the long term? The process of finding answers is called Population Care Information Systems (PCIS). Co-led by Joel Hyatt, MD, Assistant Associate Medical Director (SCPMG), and Warren Taylor, MD, Regional Director of Chronic Conditions Management (KP Northern California), PCIS involves CMI staff and regional contacts.

It was clear to PCIS members that KP HealthConnect supports encounter care superbly. However, the potential for population-based functions within KP HealthConnect hadn't been addressed by Epic, KP HealthConnect's vendor, in any previous application. Nor was there a precise picture of the key elements of PCM that KP HealthConnect, or any enterprise-level information system, should support.

### Defining the Elements

A first step for PCIS was to define core requirements for PCM. That required a close examination of the existing PCM mix, including visits to all eight KP Regions, interviews with more than 100 staff and clinical and operational leaders, observations of over 30 population care management systems, and documentation of more than 300 PCM requirements. Led by CMI Practice Leader Leslee Budge, the exhaustive investigation yielded a clear idea of what KP HealthConnect needs to do to support PCM well.

As a result, PCIS specified eight key functions needed to support PCM in the KP HealthConnect environment:

- population identification—determining population membership through reproducible processes and criteria
- population stratification—identifying population subsets according to level of illness or risk
- member tracking—following members through episodes of care
- care/case management—care plan documentation, communication, prioritized list of members, and smart algorithms to maximize care/case management efficiency
- inreach—alerts and reminders

triggered at any point of service (decision support)

- outreach—individual or mass communication with members by telephone, mail, or Internet
- member data entry into KP HealthConnect—input of data from MyChart, devices, or questionnaires
- monitoring and reporting—generating reports to meet strategic and quality needs

In partnership with Epic and KP-IT, PCIS began a process of matching these functions to KP HealthConnect. Where gaps existed, the group identified KP HealthConnect functionalities that could be adapted to meet PCM needs. Epic proved robust and flexible; as members of PCIS brought detailed questions to the table, they found functionalities to support many identified PCM needs. Where there were gaps, analysis of alternative solutions yielded a workplan, which was approved and funded by the Care Delivery Portfolio Approval Council.

Several groups within KP are collaborating with and supporting the efforts of PCIS. For example, the clinical data warehouse project is working with PCIS to create a programwide dataset, starting with data for Clarity, Epic's database, and other sources such as some lab and claims data. PCIS is working in partnership with that project and with Information Management to select software for back-end data-mining functions. Enterprise Architecture-Health Plan Operations is working on the applicability of CRM software to support outreach efforts. CRM will eventually hold all member information, including contact preferences, and be able to support campaignlike marketing efforts to reach members. PCM will be able to take full advantage of CRM service capabilities to target specific patient audiences and receive feed-

# Special Feature

## SOPHISTICATION

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back on the results. Patient encounters through CRM will be stored in the medial record.

An important byproduct of PCIS is a meeting of minds about PCM. For the first time, operational and clinical leaders from the KP Regions have gathered with staff and consultants from CMI, PCM's home within KP, to develop a shared vision of what PCM could look like in an integrated health care delivery system and what functionalities within KP HealthConnect support that vision. Regional and CMI leaders collaborate frequently; until now, they've focused on best practices for clinical priority areas. PCIS is their first opportunity to look across the PCM landscape and toward the horizon.

### Between Here and There

There are some intermediate landmarks between the current state of PCM at KP and the PCIS vision outlined above.

For one, consider the impact of KP HealthConnect on communications. When the electronic health record is live, information about care plans for individual members will be shared instantaneously and continuously. This represents a quantum leap in communications at KP.

Take the care of a member with chronic pain, for instance. The care

team may consist of a behavioral medicine specialist, a physical therapist, a care manager, and a pain specialist, in addition to the primary care provider. Often, documentation about care management is siloed from the medical record and maintained separately. Primary care providers often find it difficult to have a clear picture of the plan of care for chronically ill members. With the advent of KP HealthConnect, the care plan will be readily available to the primary care provider, making that clinician an active part of the team and ensuring that his or her time is well spent.

Increased communication can only improve PCM. So, too, will SmartTools that incorporate clinical practice guidelines improve PCM.

Back end data queries will allow care managers or support staff to identify population members who, for instance, need better glucose or lipid control or who need to be on an ACE inhibitor.

EpicCare's Reporting Workbench will enable providers to easily create queries that provide panel-level information about members who may be at risk and need some form of intervention or monitoring. As this process gets refined, the health care team will be able to produce a summary on specific subsets of members.

As KP HealthConnect rolls out

over the next few years, it's essential that population care management activities continue uninterrupted. To that end, the KP Regions will maintain parallel PCM systems until the last regional medical center goes live with KP HealthConnect.

A methodical approach to transitioning from existing systems to KP HealthConnect-based PCM systems will ensure that, while providers are busy learning the ins and outs of the encounter-focused electronic health record, PCM continues. CMI will take a leading role in ensuring that no members fall through PCM cracks. Individual PCM resources, like care management summary sheets, will be transitioned gradually to KP HealthConnect-embedded information. The vision of PCIS is that from the perspective of care providers, the transition from current systems to the PCM of the future will be incremental and seamless. ❖

### References

1. Pheatt N, Brindis RG, Levin E. Putting heart disease guidelines into practice: Kaiser Permanente leads the way. *Perm J* 2003 Winter;7(1):18-23.
2. Heart Protection Study Collaborative Group. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: a randomized placebo-controlled trial. *Lancet* 2002 Jul 6;360(9326):7-22.

## Discovery

The real voyage of discovery consists not in seeking new landscapes but in having new eyes.

— Marcel Proust, 1871-1922, French novelist