

# The Clinical Knowledge Management Process Behind KP HealthConnect

By Karen Woods  
Melodi Licht, RN, MS  
William Caplan, MD

## Clinical Knowledge Management and Patient Care Intersect in SmartTools

SmartTools are the part of clinical knowledge management that clinicians will see as they use KP HealthConnect. Some SmartTools, like preference lists, SmartText<sup>a</sup> and SmartLists<sup>b</sup> streamline workflow for clinicians by, for instance, reducing repetitive documentation or making orders or diagnoses easier. Others offer more pointed decision support. SmartSets, for example, bring together diagnoses, lab and imaging orders, medication and procedure orders, patient information, and supporting documentation in a template.

The Care Management Institute (CMI) is coordinating an ongoing effort to make high-quality knowledge available to clinicians at the point of care in these tools.

## Creating Clinical Content

The primary focus of the clinical knowledge management process behind KP HealthConnect is the collaborative creation of rigorous, evidence-based content for clinicians to use at the point of care.

The CMI clinical knowledge management process is well established. Interregional workgroups consisting of clinical experts from medicine, pharmacy, and nursing, evidence-based methodologists, and CMI care management consultants have created clinical practice guidelines for a core set of conditions and health care issues: asthma, coronary artery disease, chronic pain, cancer, depression, diabetes, elder care, heart failure, and self-care and shared decision-making. These guidelines have been approved on a national level by the Guideline Directors Group and are revised at least every two years.

Clinical practice guidelines appear in a variety of print formats, including full-length technical and summary documents, as well as on the Clinical Library (CL), (<http://cl.kp.org>) formerly called Permanente Knowledge Connection (PKC). CMI care management consultants also developed clinician-friendly tools, like trifold brochures and pocket cards, to facilitate guideline implementation.

For conditions outside its core list, CMI is facilitating the work of interregional domain (specialty) groups. Each domain group, consisting of clinical experts, chooses three clinical conditions to address with KP HealthConnect SmartTools. Within these conditions, domain group members submit questions or clinical issues for the evidence consultants to research. For example, the rheumatology domain group chose to examine the efficacy of recently introduced medications compared with long-standing treatment options.

A CMI evidence consultant, working under a physician evidence-based medicine methodologist, then follows a specified procedure for synthesizing available evidence on the topic. The knowledge synopsis is delivered to the domain group, whose responsibility it then is to build clinical content in collaboration with regionally based KP HealthConnect builders.

CMI also facilitates design, build, and validate (DBV) sessions (see sidebar). DBV sessions bring together physicians, nurses, pharmacists, evidence methodologists, coders, representatives from patient safety and health education, and other experts from across the program to Oakland to create content for KP HealthConnect.

The effort to create high-quality, evidence-based knowledge and decision support for KP HealthConnect also extends to the emergency department and inpatient settings. More than 40 people, including emergency room physicians, hospitalists, and nurses, are working on the inpatient content to support KP Regions with KP hospitals.

The goal of all processes is the synthesis of the best available evidence and information. The domain group, DBV—or the CMI core condition workgroup—then considers how to represent it within KP HealthConnect.

## Plugging it into the Right Point of Care

Once an evidence synopsis exists, the recommendations are integrated into the process of care. Statins, for instance, are indicated for the prevention of acute car-



**Karen Woods**, (top), is Director of Clinical Quality and Process Management, CMI. E-mail: [karen.e.woods@kp.org](mailto:karen.e.woods@kp.org).  
**Melodi Licht, RN, MS**, (right), is Director of Knowledge Management, CMI. E-mail: [melodi.licht@kp.org](mailto:melodi.licht@kp.org).  
**William Caplan, MD**, (left), is Director of Clinical Development, CMI. E-mail: [william.m.caplan@kp.org](mailto:william.m.caplan@kp.org).

# Special Feature

## SOPHISTICATION

diovascular events in members with diabetes over the age of 55. A prompt should appear at some point in a clinic visit to alert the provider if an appropriate candidate for treatment isn't receiving a statin.

CMI priority area workgroups and domain groups make sure that the processes of care drive the creation of tools—not the other way around. The focus is on creating solid knowledge and making it available at the right point in the process of care by using the possibilities that SmartTools present.

All this means thinking about guideline content in a new way. Even though previous tools like pocket cards have aimed at making guideline implementation easy for clinicians, the process of creating SmartTools requires content experts to think in great detail about the moment-by-moment flow of care within a clinic

visit. At exactly what point in the visit should a statin alert appear? When the provider is reviewing the list of current medications? When he or she is signing off on any orders or plans? Within domain groups, clinicians, pharmacists, nurses, and representatives from utilization management and health education also discuss the flow of clinic visits at the same level of detail.

With a solid understanding of the process of care, KP HealthConnect builders can begin to create documentation and decision support tools that support the process and reflect the evidence.

A good understanding of the process of care allows both consistency and flexibility. Consistent standards about documenting orders and plans must be maintained across Regions; at the same time, local preferences for KP HealthConnect tools must be accommodated. For example, some users might want a pull-down menu for documentation; others might prefer a SmartText module that they can further personalize to reflect their individual practice patterns.

### Design, Build, Validate

Clinical decision support tools for ambulatory KP HealthConnect are created in three-day sessions called Design/Build/Validate. Physicians, nurses, pharmacists, utilization management representatives, evidence methodologists, regionally based KP HealthConnect clinical content builders, and representatives from Epic meet to plan, build, and perform quality assurance on KP HealthConnect tools. Adult primary care was the topic of a DBV session in February 2004; a July session targeted pediatric ambulatory care. These sessions yielded content for 10 to 20 conditions.

DBVs are also conducted for the inpatient application. These DBVs typically run one to three weeks and address workflows, configuration design, documentation tools, and order sets. Starter sets have been completed for hospitalists, general surgery, medical/surgical nursing, and emergency departments. An integrated inpatient/outpatient DBV to address obstetrics is planned for October/November.

Lengthy preparation on the part of involved clinicians and representatives precedes the meetings. Evidence synopses and clinical practice guidelines, posted on the Clinical Library and the I KNOW Web site, form a critical foundation. Armed with this information, participants determine how best to incorporate recommendations into workflow by mentally walking through a clinic visit moment by moment. "There's only so much time in the flow of care. Our goal is to prioritize the key points in a clinical practice guideline. We focus on creating SmartTools that clinicians will find easy to use and that also support them in making the right decisions," says Michelle Wong, MPH, MPP, CMI Care Management Consultant.

Builders then create the suggested tools, and the entire group validates that their input has been accurately translated into KP HealthConnect. Clinicians participating in the process feel their time is well spent. "Clinicians are really energized and excited, despite the very tight timelines involved," says Ms Wong.

### Validating the Tools

Quality assurance (QA) is a key part of the process of creating KP HealthConnect content, and QA's primary aim is to ensure that SmartTools reflect the evidence on which they are based. In 2003, more than 400 SmartSets from the KPNW EpicCare system were reviewed for consistency with CMI-generated evidence-based summaries and clinical guidelines.

For content created de novo, validation sessions take place as Web and teleconferences, at which the builder responsible for creating the SmartTools posts them online for participants to view. Domain group members review each section, making sure that their input has been accurately translated. Constituent members, such as lab, pharmacy, utilization management, and evidence-based medicine methodology representatives, sign off on the SmartTool or request changes.

To shorten the feedback loop, the builder responds to requests for changes in real time. The goal is to revise the SmartTools to the satisfaction of all participants during the course of the Web conference.

Lively discussions can arise, all leading to the eventual betterment of the SmartTool. Notable recent debates included the utility of MRIs for diagnosing early-stage breast cancer and the routine use of brain natriuretic peptide (BNP) for diagnosing heart failure in inpatient settings; both tests were ultimately removed as default options from the SmartTool being discussed on the basis of the published evidence.

### When—and How Much—to Roll Out

Content for KP HealthConnect is built in the order in which it's needed. In April of 2004, the Hawaii Region went live with HealthConnect in internal medicine, family practice, pediatrics, gynecology, and behavioral health. As medical and surgical specialties come online, clinical content will be ready.

The efforts to date don't yet cover the vast array of clinical conditions that KP primary and specialty care providers may encounter. Clinical knowledge management in the context of KP HealthConnect is best thought of as a process, not an end. As clinicians become familiar with the electronic health record and its potential for offering decision support, the clinical knowledge management processes will already be in place to meet accelerating demand for more SmartTools. New technologies under study, like active guidelines and Web-enabled documentation templates and order sets, will also enable new kinds of SmartTools.

### Regional Variations

The process described above will yield a collaborative national version of KP HealthConnect, which

maximizes the economies of scale involved. However, KP Regions can customize it to create versions sensitive to local conditions and preferences.

The ultimate goal of the KP HealthConnect clinical knowledge management process, though, is standardized, high-quality care and improved health outcomes throughout the KP Program. Members with diabetes, asthma, coronary artery disease, or any one of the conditions identified by the domain groups should receive the same standard of care across all the regions. The SmartTools within KP HealthConnect are a key mechanism for making that happen. ❖

- <sup>a</sup> Standardized text templates that streamline documentation by presenting prewritten elements of patient care notes. They can also include patient care instructions, care protocols, or other text-based information.
- <sup>b</sup> Predetermined lists of symptoms, physical findings, pertinent patient history, and the like. They can also appear within SmartText as options for individualizing patient care notes.

---

## Walk Into The Future

You need people who can walk their companies into the future rather than back them into the future.

— Warren G Bennis, b 1925, Professor of Business Administration and author of books on leadership