



Healthcare Expert Network

An Innovative Approach to Finding the Best
Resource at the Point of Care

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Introduction

A Day in the Life of a Nurse Practitioner in the Emergency Department

It is another day at the hospital. As I arrived this morning, I heard a patient in the emergency room screaming in Greek, "Podi!, Podi!" Fortunately, I speak Greek. "Podi" encompasses everything from the foot to the hip. The patient was yelling that his foot hurt, but the problem was really his leg, so I acted quickly as an intermediary and translated his problem to the attending clinician.

An hour later, a patient with slurred speech, headache, and weakness on his left side arrived. Concerned that he could be having a stroke, I sent the patient for a CAT scan. If I could find a neurologist in the next 60 minutes (two hours had passed since the onset of symptoms), I could administer medication to stop the progression of a stroke.

Two hours later, a patient with a bullet wound was brought in by a friend. Unfortunately, the department in which I work is not a trauma center and does not have a trauma team on standby. Given this, I was faced with the challenge of locating a clinician who could send the patient to surgery within the hour to maximize his chances of survival.

As I was about to leave for the day, a resident ordered a medication that I found questionable. The patient needed treatment right away. I did not want to delay treatment, but I had to make sure that the patient received the right medication. I called the attending physician 30 minutes ago, but she had not responded.

These situations occur every day in hospitals. While healthcare practitioners are intelligent, educated, and caring professionals, their challenge lies in finding the right person at the time of care. This is a problem that can easily be solved using technology that connects the right people to the right patient at the point of care.

Unified communications technologies address these challenges by combining voice, video, data, and mobile technologies to deliver optimal communications to the user.

Challenges Facing Healthcare Practitioners

A study from Forrester Research shows that nurses spend 20–60 minutes per shift tracking down the right physician or allied health professional, impacting the amount of time nurses could be spending with patients.

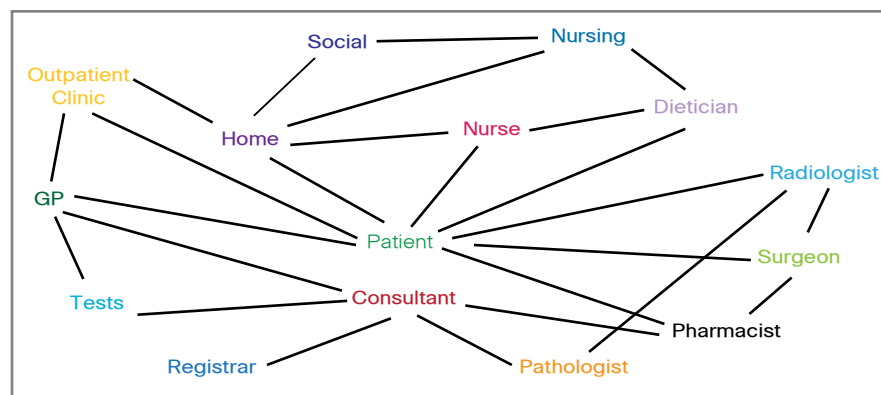
Data from “A 36-Hospital Time and Motion Study: How Do Medical-Surgical Nurses Spend Their Time?”, conducted by Kaiser Permanente and Ascension Health in 2008, shows that nurses spend 20.3 percent of their time collaborating. Collaboration is often required when treating patients with complex problems. Collaboration, coupled with time spent locating people, requires a solution that helps nurses find individuals when needed. Such a solution can significantly improve the healthcare delivery system.

Keeping up on new knowledge is another challenge among healthcare professionals. Furthermore, medical knowledge doubles every 19 years.¹ This means that the body of knowledge increases by at least 400 percent if a practitioner has a 38-year career.

Deficits in knowledge and research have led to a significant divergence between recommended care and what patients actually receive. A 2004 RAND Corporation study shows that patients receive recommended (or evidence-based) care about half the time. Given this, there are unique opportunities to improve healthcare by delivering information to the practitioner at the point of care.

Practitioners, by nature, have created ad-hoc, informal networks comprised of subject-matter experts to get the right people involved in a patient’s care. The Healthcare Expert Network provides a “formal” solution that streamlines the way clinicians work and improves efficiency (see Figure 1).

Figure 1. Healthcare Expert Network



Source: Cisco IBSG Healthcare Practice, 2009

By modifying and standardizing informal expert networks, healthcare practitioners can quickly and efficiently find experts when needed. This should have a direct, positive impact on the quality and efficiency of healthcare delivery.

1. “Information in Practice,” Richard Smith, BMJ Publishing, 1996. www.bmj.com/cgi/content/full/313/7064/1062

Rich Resource Environment

An expert network can take advantage of several unified communications technologies—including advanced telephony that bridges gaps among phones, video conferencing and other video devices, and computers—to help practitioners find the best resource, at the right time. User requirements and enabling applications of an expert network are shown in Table 1.

Table 1. Healthcare Expert Network Based on Unified Communications

Requirements	Applications
Communicate via audio, video, text, and other types of messaging	Unified communications such as IP phones and PCs
Know who is available based on skill type	Unified communications contact center
Know how to contact and locate the best available resource	Expert adviser
Automatically know when an expert is or is not available	Location-based services
Know the physical location of the expert	Location-based services

Note: See Glossary for a detailed description of applications and their functionality.

Source: Cisco IBSG Healthcare Practice, 2009

Solving Clinical Problems

Let's examine how some common clinical challenges could be aided by an expert network based on unified communications.

Language Interpretation

The healthcare organization creates a list of all individuals, including their expertise and language skills. This information is placed into a database. When a patient arrives at the hospital and there is a language barrier, the patient is given a video phone. The nurse opens a connection with the hospital translator service, and the patient's language is determined. A video phone call is dynamically placed among the patient, provider, and medical interpreter. Any guesswork between patient and clinician is replaced with effective communication.

Finding a Specialist

The expert network can transcend organizational boundaries. In the case of the stroke patient mentioned earlier, when the patient enters the emergency department with suspected symptoms, the hospital initiates a video phone call to an available neurologist. The neurologist assists the hospital in evaluating the patient. When the patient is sent for a CT scan to determine the cause of the malady, the images are shared among the appropriate staff and neurologist. The neurologist can quickly recommend the right treatment and administer it accordingly.

Finding the Attending or Covering Physician

Nurses need to locate attending or covering physicians for many reasons, including patient emergencies, clarifications or questions regarding medical orders, and family inquiries/requests regarding patients. If the nurse cannot find the attending physician, he or she must locate the covering physician. To do so, the nurse uses the PC's directory to find the name of the patient's attending physician. The PC has a database that includes practitioner expertise and instructions on how to contact him or her most effectively. Business rules can be set up within the database to dynamically contact covering physicians if the attending physician is unavailable. When the nurse or physician needs to find an expert, he or she simply calls that person; if the expert is not available, the system routes the call to the next available expert—quickly and efficiently.

Discharging the Patient

Patient discharge is one of the most complex tasks within the hospital environment. The process has numerous moving parts, and there are many opportunities for errors. Errors generally stem from neglecting to communicate information to the appropriate practitioner after final assessment of the patient, providing patients with insufficient information on follow-up care, and insufficiently and/or inconsistently monitoring conditions/therapy after discharge. Once discharge is determined, a virtual discussion can be set up among all current and future care team members and the patient over the expert network. This process should yield a smoother, higher-quality discharge from the hospital. This is essential from both a clinical quality and patient experience perspective, as the discharge process is one of the last touchpoints between the hospital and patient.

The Vision of How It Could Be

Expert networks are the basis for a new operating model that connects patients and providers in real time. Such a network based on unified communications could effectively put all patient knowledge in clinicians' hands, at all times. The practitioner could have access to experts in all fields—almost immediately.

For example, challenges with language or cultural issues could be removed by bringing a clinician interpreter to the patient—page-and-wait scenarios, all too common among physicians, nurses, and ancillary staff, could become a thing of the past.

Hospitals could also access specialists outside their normal reach by creating community partnerships. Practitioners could find people when needed and get back to their key goal—excellent patient care. Expert networks could increase access to care, improve quality, and reduce healthcare costs.

How Do We Get There from Here?

Clinician involvement is essential to achieving the vision of how it could be because clinicians truly understand how technologies can enhance medical practice and the delivery of healthcare. The simplest place for clinicians to begin is by mapping their desired workflows, so that the applications can be designed to support *their* communications needs and work styles, not those of other colleagues or IT. From there, clinicians can work with technologists in IT and biomedicine to drive innovation in system and application design (not merely to digitize current business or clinical methods), increase device selection, and improve future workflows.

Clinicians must also provide leadership by adopting technologies that can improve the practice and patient care. Knowing which applications are available in the clinical and business environment and how they can improve healthcare practices is a key ingredient for higher-quality, lower-cost services.

It is essential that clinicians understand what is possible and how IT can improve our work lives. It is also necessary that the communications devices and infrastructures needed to support these applications are medical-grade—devices must be simple, durable, cleanable, and flexible enough to respond to the way clinicians work and to the work environment. Infrastructure must be built on the tenets of interoperability, availability, security, flexibility, and productivity.

By staying abreast of technologies, clinicians can contribute to the way healthcare expert networks are used in daily practice to ultimately improve the quality and efficiency of healthcare services.

Insider Perspective

As a family nurse practitioner, with a background in business and technology, I have witnessed the many benefits technology has brought to business—benefits that can now be delivered to healthcare. Throughout the years, I have seen technology improve patient outcomes, decrease the cost of care, and improve work efficiency.

As we adopt new technologies that improve all aspects of healthcare services, patients will become the primary beneficiaries—receiving better care and more timely services at lower costs, and with increased security.

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Glossary

Unified Communications—combines voice, data, video, email, text, and instant messaging technologies to deliver optimal communications to the user.

Unified Communications Contact Center—keeps track of user availability and specialty, directing calls to the proper expert to deliver the best user experience.

Location-Based Services—services that identify and locate resources when needed, such as the nearest IV pump or expert.

Expert Adviser—software that knows the status and capability of an expert, enabling information to be sent to the expert along with the call.

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