The Hospital Bed of the Future

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In its seminal publication *Crossing the Quality Chasm*, the Institute of Medicine (IOM) laid the groundwork for conceptualizing, measuring, and analyzing quality along six domains: patient-centeredness, safety, timeliness, efficiency, effectiveness, and equity. For the last two years, the Department of Health Policy has had the privilege of working with a company called GetWellNetwork® to advance quality in the domains of patient-centeredness and safety in the hospital setting in a novel fashion.

GetWellNetwork® is a privately held firm founded in 1999 whose services are utilized in nearly 40 hospitals throughout the United States. The basis of the company is an innovative package of hardware and software elements designed to be used primarily by hospitalized patients, their families, and healthcare providers. The services provided by the GetWellNetwork® have a very personal connection to Michael B. O'Neil, Jr., the founder and CEO of the company. O'Neil developed the idea for the company while he was hospitalized; he was dissatisfied with his access to the type of information and connectivity that he was used to having in the "outside" world. Elsewhere, one of us (DBN) initially described GetWellNetwork®.[2] In this space, we will look at how the company has evolved.

Patients actively engage the system and their care as they interact with the GetWellNetwork® using a bedside touch screen monitor or other handheld devices to access educational, communication, and entertainment tools. This innovative technology is called Interactive Patient Care (IPC). A byproduct of this interactivity is that it enables healthcare organizations to deliver true patient-centered care.

Patient-centered care is defined by the IOM as "care that is respectful of and responsive to individual patient preferences, needs, and values."[1] "Patient needs" includes the responsibility for educating patients about their condition and expectations for their hospital course.

GetWellNetwork® calls its interactive patient care platform the PatientLife:)System 2.0™. This consists of 3 software packages: the Patient Care Suite™, the Patient Communication Suite™, and the Patient Resource Suite™. Each works in conjunction with another program called Patient Pathways™.

Should they choose to, physicians and other healthcare providers can customize the **PatientCare:)Suite™** to inform and care for specific needs of individual patients during their hospital stay. This suite offers on-demand access to patient education modules in the realms of safety; education about their condition; a tool to assess the amount of pain they are experiencing, with an eye toward pain management; information about the medicines they are taking; and diet. Many of the patient education programs are in the form of videos that address highly specific conditions. Over 600 videos are available which cover topics of general health and medical specialties. General topics include such things as CAT scans, X-rays, MRIs, diabetes, and depression. Within the specialty area of cardiac disease, for example, are videos describing such detailed subjects as angiograms, atrial fibrillation, and ventricular tachycardia. For those about to be discharged from the hospital, patient education continues with videos that have titles such as "Getting Well Again," "Living Beyond Cancer," and "Sleep Soundly."

The PatientCommunication:)Suite™, as the name implies, allows for two-way communication between the hospital and its staff and patients. This innovative process is initiated when a "Patient Admission Pathway" is triggered as soon as a patient enters his/her room. This Pathway helps orient the patient to the room, hospital services, information about their physician(s), and other details, helping to diminish the anxiety of the many unknowns associated with a hospital stay.

The suite lets patients provide feedback to their care staff via instant feedback tools, surveys, and electronic comment cards. For example, an assistance menu provides a list of possible complaints a patient might have during their stay such as: "my room is too hot; my room is too cold; my sink is leaking; my room hasn't been cleaned," etc. The patient selects the appropriate option, and sends an instant message to the e-mail or pager of the person whose responsibility it is to handle the complaint, such as the maintenance staff or cleaning personnel—not the nurse on duty! This frees up valuable nurse time which can be spent more appropriately on direct patient care.

The PatientResource:)Suite™ is predominantly an entertainment package offering patients access to the Internet, a hospital-based email account, Hollywood movies, television, games and music. It also contains a template for patients to maintain a journal/log of their stay as well as general hospital and visitor information, such as visiting hours, cafeteria hours, special events, etc.

In addition to its contributions in the domain of patient centeredness, the GetWellNetwork® system is readily adapted and utilized to make contributions in the realm of safety. Our Department has been working with the GetWellNetwork® on a project in the domain of safety, directed toward prompting patients to ask questions of their care team by encouraging physicians, nurses, and other caregivers in hospitals to wash their hands before and after contact with them. This is being conducted in the spirit of the Joint Commission (until 2007, the Joint Commission on Accreditation of Healthcare Organizations –JCAHO) initiative called Speak-Up3 wherein patients are encouraged to question their physicians and other providers on safety-related issues.

Unfortunately, compliance with handwashing standards among hospital personnel is still low. It is estimated that handwashing occurs in less than half of the circumstances in which it is indicated, and for a shorter period of time than recommended. Of interest, self-reporting of handwashing by hospital staff has not been proven to be reliable, as staff have been found to routinely overestimate the frequency and quality of their handwashing.[4] The full CDC recommendations for hand hygiene can be found in their publication "Guideline for Hand Hygiene in Health-Care Settings."[5] While their comments confirming that hands of healthcare workers in hospitals are regularly contaminated with pathogenic microorganisms and are the major source of nosocomial infections were not new, their recommendation that alcohol-based hand rubs (ABHRs) should be used for routinely decontaminating hands was new. The Guideline notes that ABHRs require less time and are easier to use than soap and water, are more effective at killing pathogenic microorganisms, and are less irritating to skin, encouraging adherence by healthcare workers.

In an effort to empower patients to become more involved with their care, we will customize GetWellNetwork® to deliver an interactive, tailored, hand hygiene message designed to educate patients and encourage them to remind their caregivers to clean their hands before coming into contact with them. Due to the nature of the portal, we will be able to capture survey data and customize text and/or video in accordance with their responses. When we collate the data from our study, we believe that this intervention will show an increase in healthcare workers' compliance with appropriate hand hygiene methods, improve patient satisfaction with the care they receive, as well as decrease the number of hospital-acquired infections.

The interactive tools of the GetWellNetwork® can be utilized far beyond encouraging hospital caregivers to wash their hands. Additional uses in the arenas of quality and safety include, in the proper clinical settings, such diverse functions as: encouraging patients to closely observe nurses to make sure they do a proper identification check before giving medications; making patients aware of appropriate discharge medications

included in performance measures, such as aspirin and beta-blockers for patients hospitalized due to myocardial infarction; prompting post-surgical patients to get out of bed and use incentive spirometers; delivering and documenting smoking cessation counseling; and encouraging patients to ask for pneumovax.

Hospitals today are driven by powerful market dynamics. While all need to survive financially, those that will be at the forefront focus on adding value in the realms of quality improvement, safety, and service excellence. We believe these GetWellNetwork® tools offer hospitals and patients a competitive advantage. As always, we are interested in your views and you can reach me at david.nash@jefferson.edu.

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References

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