Meaningful use is a hot topic in recent health information technology discussions. The Department of Health and Human Services, Office of the National Coordinator for Health Information Technology, and the Centers for Medicare and Medicaid Services are working together to develop and publish criteria that define meaningful use. As published in the Federal Register on July 28, 2010, meaningful use at this time focuses on stage 1 criteria including: capturing health information electronically in a structured format, using that information to track key clinical conditions and communicating the information for care coordination, implementing decision support tools for disease and medication management, engaging patients and their families, and reporting clinical quality measures and public health information (U.S. Department of Health and Human Services, 2010).

These meaningful use criteria refer to the electronic health record (EHR). In this column I will discuss achieving meaningful use in the context of various information technology research interventions including telehealth, decision support, transfer of information, and standardized nursing.
language. This first column in the series will focus on telehealth. Telehealth is defined as electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration (U.S. Department of Health and Human Services).

I have been the principal investigator or co-investigator on six home care based telehealth research studies beginning in 1997. Based on this experience I would like to use the theme of meaningful use to discuss some of the barriers to successful telehealth programs, suggest strategies to overcome these barriers, and discuss how this technology currently meets meaningful use criteria.

Similar to the approach by the Centers for Medicare and Medicaid with their EHR incentive programs, incentives in home care to promote and reward the use of telehealth are critical. In our most recent randomized clinical trial field study, funded by the National Institute of Nursing Research RO1-008923, we attempted to use telehealth as an opportunity to decrease costs and increase efficiency in home care. Our goal was to use telehealth monitoring in place of 45% of the in-person nursing visits. Nurses were to visit the patients in person at the start of the home care episode, then, once they stabilized, discuss with the patient whether they would like a video remote visit or in-person visit.

During a remote visit the nurse can assess the patient’s vital signs, blood sugar, weight and oxygenation. They can conduct teaching and reinforcement via a video phone with live interaction. Despite the richness of this technology, the incentives to conduct remote visits versus in-person are not yet there. Few studies have been able to decrease in-person visits using the technology; it is usually an add-on service providing more nurse contact and therefore more costs to the agency. Savings are usually seen for Medicare from preventing readmissions, especially for heart failure; (Antonicelli et al., 2008; Dansky, Vasey, & Bowles, 2008a; Dellifraine & Dansky, 2008) for the nurses the rewards are improved patient outcomes.

However, in our experience a disincentive exists that must be addressed for telehealth use to be meaningful to clinicians. There was no incentive to decrease in person visits because the remote visit was not counted in the nurse’s productivity. If not visiting the requisite quota of patients in-person per day, the nurse would be assigned another admission. This was a definite disincentive given the burden of assessing a new case, developing a new care plan, and adding another patient to their responsibility. Further, installing the equipment and teaching patients how to use it were additional time consuming activities often not accounted for when evaluating

productivity.

Suggested ways to overcome these barriers are to examine the workflow changes brought about by telehealth. Managers must have a clear understanding of what it takes to install, teach, and operate the equipment. Equipment that is easy to use and easy to install is essential. Removing the burden of installation and collection of the equipment from the nurses is another strategy. Our equipment was so easy to install we shipped it right to the patients’ homes and they installed it with telephone guidance or minimal support from the nurse. Choosing technology savvy nurses to conduct telehealth is highly suggested. The ability to problem solve and trouble shoot the technology is a plus.

It is also important to choose the right type of patient for the technology. Little is known to date about the characteristics of the ideal patient. In our studies we chose older adults with the chronic conditions of diabetes and heart failure. But other characteristics beyond medical condition may be important. Concepts such as motivation, health literacy, and self care confidence may affect the patients’ success with telehealth (Dansky, Vasey, & Bowles, 2008b). Patients who are anxious or hard of hearing are usually not good candidates (Bowles KH. & Horowitz, D., 2008). Age may also play a role. In our study patients who refused to use the technology were significantly older than those who accepted it (mean age 74.6, SD =8.6) compared to 69.3 SD = 10.6, p= .013.

Nurse buy-in toward participation in research is critical to gain their support and have them encourage the patient to use the equipment, convince them of its value in helping to keep them from being readmitted, and to maintain the integrity of the study protocol. Again, incentives to cooperate with study protocols are needed given the challenges of field studies (Duffy & Hoskins, 2008).

Telehealth technology, if designed well, can meet most of the stage 1 meaningful use criteria. The first criterion, to capture health information electronically in a structured format is an important one. To date few telehealth electronic records use a standard format and many allow free text. Also, few interface with the agencies’ existing EHRs. This requires the nurse to enter two systems to obtain and document patient information. This is time consuming and presents potential for errors, omissions, and inefficiency. If purchasing telehealth equipment ask the vendor about integrating the technology with existing systems.

The equipment usually does a fine job of meeting the criteria of using information to track key clinical conditions and communicating the information for care coordination. The monitoring afforded by telehealth technology tracks the symptoms.
and clinical parameters important to prevent exacerbations of chronic illness. The ability to alert clinicians to abnormal readings supports them to respond quickly and communicate the information in graphic form. This helps with coordination of care between home care nurses and community medical providers.

Telehealth is definitely a tool that supports decision making by providing data and information, however decision support tools for disease and medication management are needed within telehealth programs. Important information needed for disease management from acute or primary care is often not available to the home care nurse (Bowles, Holland, & Horowitz, 2009) and pathways or guidelines are not often embedded in the software. Finally, telehealth does engage patients and their families. In our recent study, patients who accepted the technology in their homes used it 81% of the available time (range 6-100%).

With a few improvements and attention to incentives, telehealth can be a meaningful information technology intervention. Further research and development are needed to identify the right patients, develop the equipment for easy installation and operation, devise economic models that create the incentives to use the technology efficiently and create seamless information transfer between the technology software and the patients’ EHR.

References


