

Telemedicine and public informatics



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With the delivery of health care and the advent of computer based health care delivery systems, practitioners have seen a widening array of avenues to see and treat patients. The advent of telehealth and telenursing has given way to monitoring and treating patients in their own homes making seeing a physician more convenient than ever. In 2012, over 380, 000 patients used some form of telehealth, and that number is expected to more than quadruple to 1. 8 million patients as soon as 2017 (IMS Research, 2013).

Telemedicine and Diabetes Compliance

According to the Centers for Disease Control (CDC), diabetes is the seventh leading cause of death in the United States with approximately 29 million people suffering from the disease (CDC, 2016). Although diabetes affects all ages, genders and races, it seems that more people of Hispanic and African American heritage suffer from the disease than Non-Hispanic Whites. The latest prevalence data (2007), shows that 10. 4% of Hispanic Americans are diagnosed with diabetes, and those of African American heritage account for approximately 14% of those diagnosed compared with 6. 6% of non-Hispanic whites (Trief, et al, 2013).

Using The Informatics for Diabetes Education and Telemedicine (IDEATel) demonstration project, researchers were looking at treatment regimen adherence between the three ethnic groups and if application of telemedicine could improve adherence to a diabetes treatment regimen. It has been previously published that the IDEATel project was successful in improving cholesterol levels, glycemic control and lowering blood pressure in

respondents who used the project compared to usual physician office visits (Shea et al, 2006, 2009).

This study used regular visits via telemedicine over a 5 year period. Visits were usually every 4-6 weeks and included review of glucose levels, diet and exercise programs and barriers to care. For those who were of Hispanic origin, bi-lingual providers were used so that no language barrier existed during the diabetes education tele visits (Trief, et al, 2013).

Researchers found that during the 5 year study, the adherence to the treatment regimen was the same between that usual treatment group and the group receiving the telemedicine visits, those in the telemedicine group did show more time doing diabetic self-care than those in the usual treatment group. This study also showed that when patients with diabetes, regardless of race, adhere to their treatment regimen, better glycemic control is achieved.

Using telemedicine interventions with patients diagnosed with diabetes in an excellent option. Some patients with diabetes either type I or Type II may not have access to transportation to keep scheduled appointments at their physician's office. In using telemedicine to check on patients, practitioners can better follow patients and follow the patient's adherence to their specific treatment regimen, thereby improving glycemic control, and reducing symptoms and problems caused by diabetes.

Public Health Informatics

The term public health informatics (PHI) came about due to the work of Dr. John Snow. In 1854, Dr. Snow tracked cholera related deaths to a single water pump in London. The removal of that pump ended the outbreak. This was the first recorded community policing by a health care practitioner. In investigating the infected population as a whole, Dr. Snow was able to track the source of the cholera virus (Vachon, 2005). Florence Nightingale was also instrumental in public health informatics. The data she collected about hygiene and the mortality related to such, changed the face of medical data gathering which still exists today (Dossey, 2000). PHI incorporates skills and knowledge from many different areas including: statistics, microbiology, toxicology, epidemiology, management, and psychology (O'Carroll, Yasnoff, Ward, Ripp, & Martin, 2003, p. 5).

One of the most important tools for a public health nurse or organization is a surveillance data system such as an infectious disease tracker (McGonigle & Mastrian, 2015). This tool is an incredible resource for tracking adverse health events and allows for the planning and implementations of interventions designed to combat adverse outcomes caused by a disease or other catastrophic instance.

In examining the information gathered about a possible influenza epidemic, the PHI nurse and others would look at past data to extrapolate data for the new season and how many people may be affected by the influenza outbreak and what information they have on strains of vaccine that have worked in the past. Other data that would need to be collected in this case would be information about the community at large such as high risk groups (children and elderly), those parts of the community with little or no access

to healthcare and those populations that can afford to, and usually get a vaccine without any advance direction to do so.

In testing the efficacy of the campaign and the effect of the vaccination, researchers and others would have to examine all information on the amount of people vaccinated and the number of those people who actually contracted influenza. In analyzing this information, the public health department and those within that organization will have a better idea of what to expect in the years to come when dealing with influenza and ensuring those at high risk for contracting influenza get vaccinated before the season begins.

Electronic Health Record

Since more and more organizations are changing to an electronic health record (EHR), there have been questions raised as to the privacy of the EHR and who ultimately owns the EHR. Protecting a patient's privacy is of the utmost importance when initiating an EHR. In doing so, organizations must be able to keep this record private and keep the patient's protected health information (PHI) private and secure.

The ability to maintain security and privacy must work hand in hand with an organization's ability to have a continuity of care for patients. This continuity of care comes from the interoperability of a patient's record. In sharing certain amounts of patient information such as demographics, allergies, past medical history, and medications organizations can save time and money in allowing this information to be shared with others who are an integral part of the patient care team (McGonigle & Mastrian, 2015).

In sharing a patient's EHR within an organization or outside an organization if it relates to the continued care of that patient, the practitioner must ensure that all PHI remains protected as the misuse of this information could prove catastrophic to both the patient and the practitioner. If the information contained within a chart were to be leaked to the wrong individual, that person could use said information negatively and hurt the patient.

Organizations both sending and receiving patient information must undertake the proper steps to ensure that only authorized individuals have access to the information and that the information remain secure when transmitted either physically or electronically. Having a shared EHR and interoperability is important to a patient's continued medical care. It needs to be handled with the respect it is due to allow for a seamless transition between practitioners and the peace of mind for the patient knowing that the information is secure.

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