Examination of Patient Portal Utilization and Association with Clinical Outcomes in a Neurology Patient Population

Christa Ochoa, MPH Candidate; Jacqueline Baron-Lee, PhD; Steven Foti, PhD

Background

Patient portals provide a virtual means of communication between providers and patients. Usage of the patient portal at UF Health (MyUFHealth) has never before been investigated and the institution may benefit from increased understanding of who is most/least likely to be using the portal and correlations with clinical utilization and hospitalization.

Objectives

The objectives of this study were to 1) establish patient characteristics that are associated with portal usage, 2) determine if there is an association between portal usage and frequency of in-person clinical appointments and 3) determine if there is an association between portal usage and risk of hospitalization.

Methods

This was a cross-sectional investigation of 13,483 patients seen in the UF Health Neurology Clinic from July 1, 2016 – June 30, 2017. The hypotheses of the study were: 1) Likelihood of patient portal usage will be related to patient characteristics such as age, race, diagnosis, number of prescriptions, and distance from the clinic. 2) Patient portal users will be less likely to be hospitalized over the study period. 3) Patient portal users will have a lower number of clinic visits. Logistic and Poisson regression were used for analysis.

Results

Likelihood of portal usage is significantly associated with age, race/ethnicity, gender, distance from clinic, disease status, number of prescriptions, and scheduling area. There were significant interaction effects between age, race, and gender. After adjusting for available factors, being a portal user is associated with an approximately 30% increased rate of clinic utilization and 12% higher odds of hospitalization.

Conclusions

Patient portal usage in this population is significantly associated with the patient characteristics studied. Contrary to expectations, patient portal usage is associated with higher clinic utilization and risk of hospitalization. Odds of portal usage are likely influenced by other factors not studied which future research may be able to address.

MPH Competencies Strengthened

- Evaluating effectiveness, accessibility, and quality of personal and population-based health services
- Conducting research for new insights and innovative solutions to health problems
- Communicating effectively with public health constituencies in oral and written forms
- Demonstrating ability to analyze and interpret epidemiologic data
- Demonstrating the principles of problem solving
- Monitoring and evaluating programs for their effectiveness and quality

Concentration Competencies Strengthened

- Using appropriate statistical methodology to address public health problems by determining the difference in health outcomes as a result of electronic patient portal usage and modeling the likelihood of usage with logistic regression
- Applying software to conduct statistical analyses mentioned above using SAS
- Developing presentations based on statistical methods and analyses for both public health professionals and educated lay audiences by developing and presenting a poster for Public Health Day based on my findings

Public Health Relevance

Through the 5 Big Aims of Zero Harm, Reduce Variation, Achieve the Perfect Patient Experience, Transform Culture, and Increase Value, the quality improvement arm of the NICAP creates a significant impact on public health by providing valuable services that improve patient health outcomes and reduce inefficiencies across UF Neurology and Neurosurgery Departments. My project on patient portal usage will support the NICAP by informing future communication efforts to reduce inequalities in services at UF Health.