



Statewide Study on Meaningful Use-based Nurses Experience Using the Electronic Health Record

Mari Tietze, PhD, RN-BC, FHIMSS
Susan McBride, PhD, RN-BC, CPHIMS

Problem Statement: Passage of the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009 created a significant shift in the technology environment for patient care delivery. This shift has affected an estimated 300,000 nurses in the state of Texas alone. **Study Aims.** 1) Measure the satisfaction of nurses related to the use of electronic health records (EHRs); 2) Account for EHR meaningful use functionality as a potential influencer (or covariant) of satisfaction; 3) Explore nurse and EHR characteristics that correlate with satisfaction; 4) Determine themes and patterns from text-based comments provided by nurse participants about their experiences and the impact on their practice . **Method:** Texas nurses were collectively surveyed in early 2015 to elicit their experiences using a clinical information systems (CIS) such as the EHR in acute and ambulatory care settings. After Institutional Review Board approval, the Chief Nursing Officers (CNO) of participating hospitals disseminated the voluntary 15-minute on-line survey to all their staff nurses. **Methods:** Instruments. The quantitative component for measurement of satisfaction was the 37-item Clinical Information Systems Implementation Evaluation Scale (CISIES), a well-established instrument with documented reliability and validity. To account for the maturity of the system used by the nurse, the survey also assessed specific maturity-sensitive meaningful use functionality and used this quantified measure to better reflect the nurses "satisfaction experience" rating for their EHR. CISIES and the meaningful use maturing-sensitive index (MUMSI) demonstrated strong inter-rater reliability with Cronbach's alpha scores of .889 and .881, respectively. **Results:** Results of the 1,177 responses from Texas nurses, when submitted to factor analysis and applicable forms of statistical modeling, begin to paint a picture of the key characteristics in predicting level of satisfaction success in EHR use by nurses, while controlling for meaningful use features of the EHR. These along with traditional demographics such as location, age, gender, years since graduation, clinical specialty, etc. were tested with the models. Almost 50% of participants Strongly agree or Agree that the system is more efficient than the old way of doing things while 16.2% disagree or strongly disagree. More specifically, for example, the maturity of a clinical information system within an organization, and age of the nurse significantly influences the probability of nurse satisfaction ($p < .05$). The MUMSI, for example, revealed that nurses were 2.76 times more likely to be satisfied with the EHR when these decision support functions were present and used when compared to nurses who indicated decision support functionality was not present (OR 2.758, 95% CI 1.666, 4.566) However, responses to drug- allergy alerts were not as positive. Finally, important qualitative responses, yielded rich thematic categories for further describing the nurses' experiences such as system usability, patient safety and quality, time away from patients, inefficiency, support, workflow distress and communication. **Significance:** Results provided guidance for the Texas Nurses Association/Texas Organization of Nurse Executives partnership for the "going forward" strategy needed to improve nurses' experiences using their EHR systems. Recommendations and associated rationale are provided related to competencies, interprofessional collaboration, executive leadership roles, interoperability and workflow, among others.