The effects of early adoption of academic electronic health records system (EHRs) in teaching nursing documentation to nursing students: a pilot outcome study

Joohyun Chung, PhD. MStat. RN., Teresa Reynolds, MS, RN,CNE
College of Nursing, University of Massachusetts Dartmouth

Introduction
The nursing profession has been slow to incorporate information technology into formal nurse education and practice. The high number of hours spent using EHRs (Electronic Health Records System) may be associated with non-user-friendly systems or nurses’ lack of competence with the electronic systems. It is imperative that the nursing students are able to use EHRs in their education so that they will be more prepared to enter the profession with strong technology skills for nursing documentation.

Objectives
In 2016, the academic EHRs was only adopted to Accelerated bachelor of Science (ABS) Program. In this study, the intentions of this study are two folds: (1) to examine the faculty’s and students’ perceptions of introducing academic EHRs system for teaching/learning nursing documentation and (2) to assess the outcomes of academic EHRs on competency in nursing students’ readiness of nursing documentation between ABS group and pre-licensure BS group.

Methods
With this pilot study, a quantitative research design with supportive qualitative research was used. (1) A qualitative descriptive research design was applied to gather the information on both faculty and students’ perceptions of academic EHRs in terms of nursing documentation. (2) In a posttest only non-equivalent control group design was used to assess nursing students’ competency of electronic nursing documentation using Academic EHR.

Sample and setting
The study took place at one university in the Eastern US in 2017. The purposive sample of 7 nursing faculty and 8 nursing students were used in qualitative data collection. The convenience sample of 41 nursing students (7 ABS students and 34 BS students) was used in quantitative data collection.

Procedures
Qualitative data
In-depth, exploratory approach to data collection for nursing faculty and nursing students was taken, employing semi-structured interview questions.

Quantitative data
Student will be evaluated their readiness of the nursing documentation within Academic EHR (Docucare, Lippincott Publisher). “Pre-worksheet” will be given to students. Using Docucare, students will be asked to review the patient information. Pre-worksheet has two parts: (1) Roots and (2) Impression: (1) Roots: background & physiology, subjective findings, objective findings, recent lab results, and medications, and (2) Impression: A: What are the issues and P: your priorities (plan). Students will conceptualize the patient information through the Docucare and students will be required to fill out the Pre-worksheet. Currently we are developing a tool to measure meaningful use of electronic nursing documentation system in nursing education. Using this instrument, all students’ response will be analyzed.

Data analysis
Qualitative data
All data were audio recorded and transcribed verbatim. Open coding of the transcripts was performed and major themes were identified through multiple readings based on thematic analysis.

Quantitative data
The regression discontinuity method will be used, in order to overcome the statistical problem of endogeneity of an explanatory variable in observational data.

Results
From qualitative data, four key themes were shared by the faculty and students including: 1) lack of resources and supports (equipment (computers at nursing labs), technical supports from IT team, standard procedures, faculty resources); 2) quality of academic EHRs; 3) benefits and challenges (student: cost vs. faculty: lack of knowledge); and 4) recommendations for the future adoption of academic EHRs.

Conclusions
Adopting academic EHRs should include providing physical (equipment) resources and supports for faculty and students. These findings were very helpful to prepare students and nursing educators for the future of health information technology. Paper-based instruction may not be sufficient for teaching electronic nursing documentation. The adoption of academic EHRs is not for data entry but for meaningful use.

Acknowledgements
Funded through participation in the Community Engaged Research Academy sponsored by the UMass Dartmouth Provost’s Office.