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Academic-Practice Partnerships, EHR in Nursing Curriculum, and the Value Equation

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Abstract. Workforce well-being and associated factors such as burnout, depression and documentation burden, have been identified as the highest concerns to be addressed. In academia, the new essentials of nursing practice including domain 8 for *informatics and healthcare technology* have become a focus for curricular revisions/enhancements. Our study focused on technology skills by using the technology of an academic EHR to measure baselines and progression of EHR use, sense of confidence, documentation competency, and post-graduation employer-based performance assessment. We provide results of an ongoing 1.5-year study and overarching strategy for university-wide deployment and financing.

Keywords. Electronic health record (EHR), academic EHR, workforce well-being, academic-practice partners, System Usability Scale (SUS), cost model

1. Introduction

Over the last decade, there has been a steady increase in stress and burnout in the healthcare workforce in this country. The COVID-19 pandemic exacerbated this growing problem. An extensive 6-year study, *Taking Action Against Clinician Burnout: A Systems Approach to Professional Wellbeing*, was published in 2022, describing the ever-increasing crisis and the impacts on the overall healthcare system [1]. The study found that 35-54% of healthcare workers were at risk for burnout. While the electronic health record (EHR) and other health information technologies (HIT) provided benefits, HIT, specifically, the EHR, was said to create high dissatisfaction, stress and burnout among healthcare workers.

In a similar timeframe of 2021, the American Association of Colleges of Nursing (AACN) deployed updated practice essentials that guide nursing education curriculum [2]. These essentials were comprised of ten domains of practice competency from which a total of 128 sub-competencies were defined to be reflected throughout United

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States-based nursing school curricula. Along with the report of these essentials of practice, was the notion of the "Academic-Practice Partnership" [3]. This partnership is said to be imperative to the successful deployment of the new practice essentials where one of the most challenging areas for academic-practice partnerships is in EHR documentation competency [3]. The purpose of this paper is to describe the importance of the academic-practice partnership using the example of our ongoing study of curriculum-based EHR deployment for nursing students. The associated value equation for EHR-based documentation competency, workforce readiness, and nurse well-being is depicted in Figure 1 illustrates the value equation for the value and ultimate impact for nurse well-being. The benefit of improved workforce cost is reflected in the red arrow of the Figure.

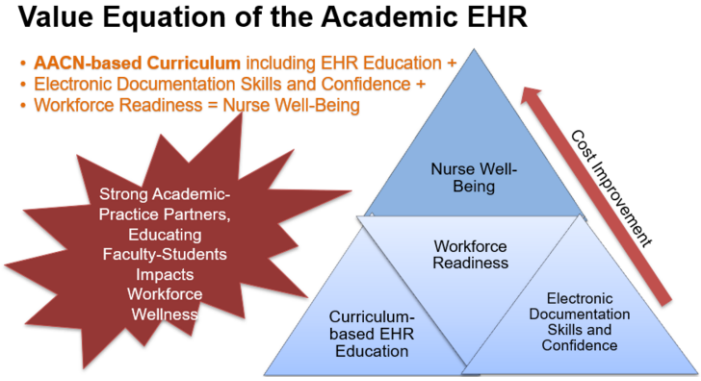

Figure 1. Academic EHR Value Equation

2. Methods

2.1 Simulation

Incorporating an academic electronic health record (aEHR) into clinical simulation offers a multitude of benefits for nursing students and educators alike. An aEHR is an adapted version of an EHR used in real acute care and real ambulatory facilities, with modifications that provide for the needs of academic institutions, such as grading documentation assignments. By simulating the real-world use of digital documentation, an aEHR provides a safe environment for students to cultivate their documentation skills. This integration with future encounters in the healthcare setting, reduces the cognitive load and potential anxiety associated with navigating these systems during actual patient care, post-graduation.

The aEHR in simulation serve as a valuable tool for fostering clinical decision-making skills.[4] As students interact with the aEHR, they learn to synthesize patient information, plan care, and evaluate outcomes against evidence-based standards, all within a controlled, risk-free setting.[5] This hands-on practice enhance critical thinking and prepares students to respond more effectively in real-life scenarios.[4] Instructors can review students' documentation to assess clinical reasoning, attention to detail, and adherence to legal and ethical standards.[6] This feedback loop is vital for continuous improvement and learning.

In our study of a curriculum-integrated aEHR, beginning August 2023, implementation began with faculty instruction. The Junior 1 faculty received instruction on the aEHR, focusing not only the faculty role, but the student experiences as well. Several case studies were developed within the aEHR and integrated over the span of several lab sessions throughout the semester. Figure 2 depicts a typical landing page for a student's case study assignment of the aEHR learning activity. The students had the ability to document at the bedside in real time to simulate the experience in the clinical setting. Approximately 250 students were in the initial cohort of students integrating the aEHR into simulation. The inclusion of the aEHR into the simulation curriculum aimed to increase scenario fidelity and enhance the learning experience for the students.

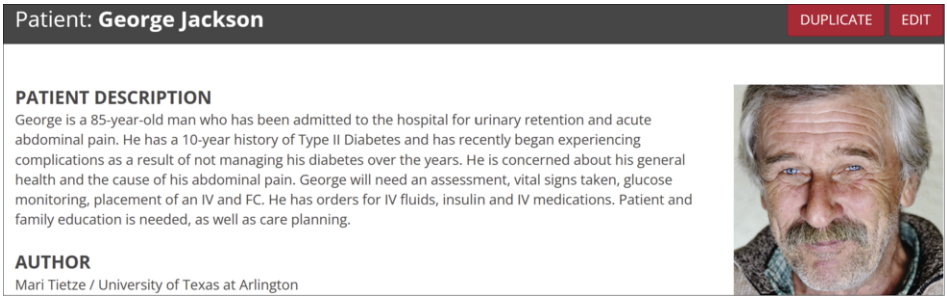

Figure 2. Typical Landing Page for Student's Case Study

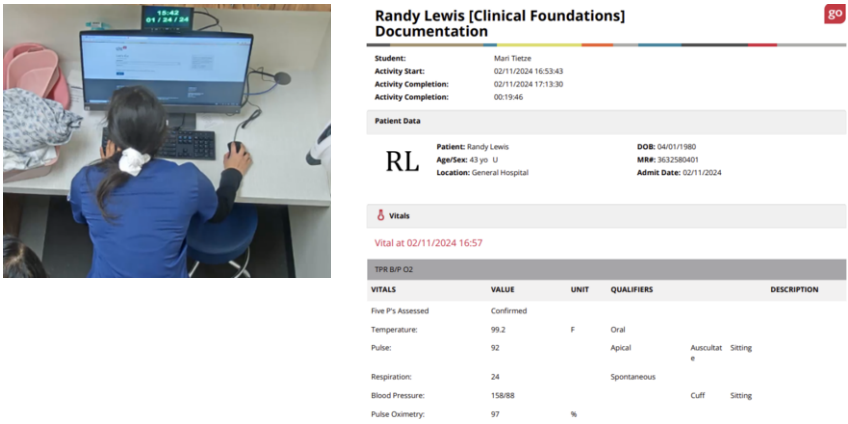

Figure 3. Student Signing-on to aEHR and Associated Documentation for Grading

2.2 Measurement

Previous research regarding the measurement of EHR implementation effectiveness has emphasized the importance of a formal plan to assess user satisfaction and behavior changes [7]. This research team wanted to ensure our quality effectiveness plan included the diverse perspectives of students, educators, and our practice partners. Our measurement plan centers on comparing the current cohort of nursing students who are using the aEHR documentation [experimental group] to the past cohort of students who used using paper documentation [control group] as part of their learning experience. Measures include objective student performance outcomes, student perceived

satisfaction scores, and practice partners objective assessment of these students that they hire post-graduation. One objective assessment we are using is the Competency Assessment in Simulation of Electronic (CASE) health records tool addresses the EHR competencies of both nursing students and practicing nurses in a simulated care environment. The CASE tool includes ten competency domains and students are assigned one of five HIT proficiency levels from Baseline to Expert [8]. We are utilizing the CASE tool as an objective measure of students' ability to accurately document and effectively utilize the EHR.

Measuring user and stakeholder satisfaction is a key component of any successful project. In addition to current, pre-graduation student satisfaction and competency, we plan to measure practice partner satisfaction by the degree to which our employers believe our graduates are prepared to document in their clinical practice. We intend to measure this success post-graduation with our practice partner through the use of surveys the practice partner uses with newly graduated nurses. The surveys as administered by a third-party vendor at the beginning of the nurse residency, at six months, at one year and at two years. The three measures are:

1. *Casey-Fink Experience Survey - Skills* and *Professional Profile* specifically the self-reported skill of documentation and charting.
2. *Casey-Fink Experience Survey-Transition* in relation to the nurses' self-report of difficulties during their transition specifically "lack of confidence". We hope to see lack of confidence decrease as the skill of documentation and charting increase.
3. Progression and post-residency survey administered by a third-party vendor. The specific questions to be analyzed on the progress survey will be a self-report of "nurse competence". We hope to see nurse competence increase as the skill of documentation and charting increases.

2.3 Cost Management for the Value Equation

Studies show that integration of an academic EHR into undergraduate curricula have many benefits including increasing readiness for practice by enhancing their electronic documentation skills [9] and increased confidence [10]. We measured the students' perceptions for usability of the aEHR and their perceptions for how well it supports their transition to post graduation employment roles. Illustrating a positive outcome for both of these characteristics, a report to the university Provost justifying the student-oriented fee structure was well-received, thereby strengthening our sustainability plan.

3. Results

Our ongoing study aims to measure the impact of the aEHR experience in terms of ease of use and in terms of positive contribution to skills and confidence for using of an EHR. Of 115 students who had used the aEHR for the first time, we noted a 70% ease of use the System Usability Rating [11] rating on a scale of 0 to 100% with 100% being perfect. In terms of student perceptions, the majority of students indicated that the aEHR would increase their skills in using an EHR in the practice setting (63%) and that they would benefit from having the aEHR be used in other courses throughout the program (60%). Typical comment from students were: I really loved this format! It is pretty close to navigating a real chart for a patient, so it is really awesome to prepare us for clinicals," and "I actually enjoyed doing this assignment and felt that it helped me to better understand the industry guidelines for the treatment of COPD." In summary, it is believed that "Curriculum-based EHR Education + Electronic Documentation Skills

and Confidence + Workforce Readiness = Nurse Well-Being," [see Figure 1]. Student input, teaching evaluation, and cost impact will be provided with the presentation.

4. Discussion [Lessons Learned]

As noted, given the current digital documentation via the EHR, that characterizes our healthcare industry, nursing benefits from gaining competency in using EHRs and managing the associate patient data. Our ongoing study suggested that nursing and other students at all levels of education welcome the opportunity to learn the needed skills. Most importantly, the role of practice partner for guidance and for measurement of the post-graduation, employed nurse performance, was key to that success.

5. Conclusion

The value equation for workforce well-being in nursing includes work that begins in nursing school. We suggest there is a positive impact on students when they are provided aEHR learning activities that are integrated into curriculum. Strong and thorough academic-practice partnerships are imperative to the successful deployment of this integration. A sustainable funding approach allows for all levels of nursing students and other student involvement in such learnings/skills development.

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