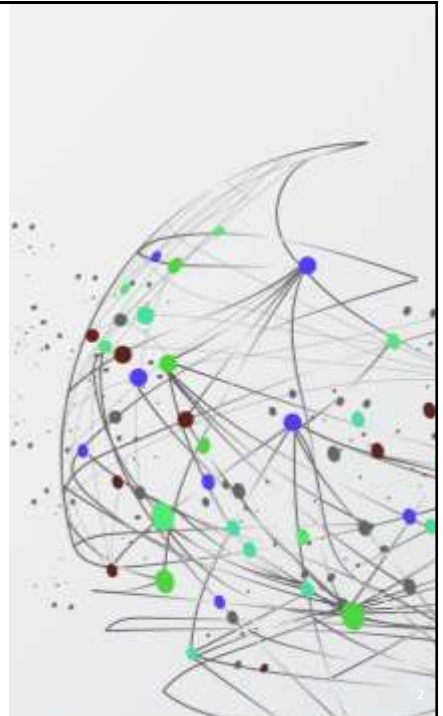


# The Future is Now! Evaluating EHR Competency in Simulation

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## Introduction

- The Competency Assessment in Simulation of the EHR (CASE) Tool was designed to provide an objective means of assessing nursing students EHR documentation competency during simulation experiences
- Nurse educators must include documentation skills in the curriculum to prepare nursing students for the technology rich practice environment (Williams et al., 2021).



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## Background

- Competency tools currently available to faculty evaluate informatics competencies and are primarily subjective self-assessment tools that evaluate computer skills (Forman et al., 2019; Ting et al., 2021).
- To fill this gap, the CASE tool was developed using Lynn's (1986) method of content validity (McBride, et al, 2020).
- Experts in informatics, simulation and academic education provided input on the tool
- After three rounds of Delphi the content validity index (CVI) was 0.97.
- The next step was to establish reliability and validity of the tool.

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## The Challenge

- Current simulation education approaches do not provide an environment for developing competencies to use the EHR technology within the clinical workflow.
- Healthcare facilities may limit student EHR use (Hansborough et al., 2020).
- No objective competency evaluation tools were available (Forman et al., 2019; Ting et al., 2021)



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## Research Question

How can EHRs be included in standardized clinical scenarios with advanced patient simulators and/or standardized patients for teaching and evaluating competencies in interprofessional teamwork and patient safety?



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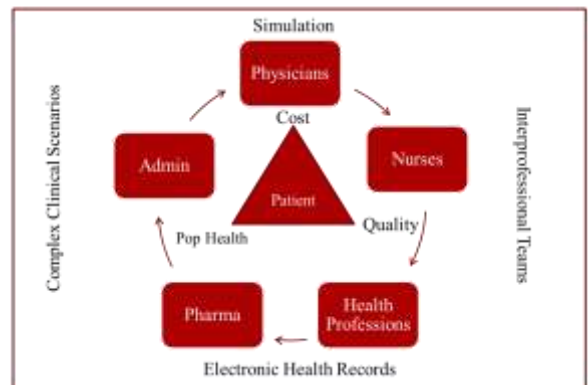
## Interprofessional Conceptual Framework



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### Conceptual Model

Electronic Health Record-Enhanced Simulation Program (EHR-ESP):  
*Developing Clinical Competencies in Health Information Technology*



6

## Ten Domains for Best Practices for Documentation within the EHR



1. Documentation is honest and demonstrates professional integrity. (Essentials 8, 9)
2. Documentation is devoid of inappropriate abbreviations, spelling errors, poor grammar, and emoticons. (Essential 8)
3. Documentation is consistent with the assessed clinical condition. (Essentials 2, 8)
4. Documentation is complete with no gaps and no omissions. (Essential 8)
5. Documentation reflects appropriate use of structured or unstructured data within the EHR for collecting valid and reliable data that can be integrated into other assessment parameters to support sound clinical reasoning. (Essentials 5, 8)

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## Ten Domains for Best Practices for Documentation within the EHR

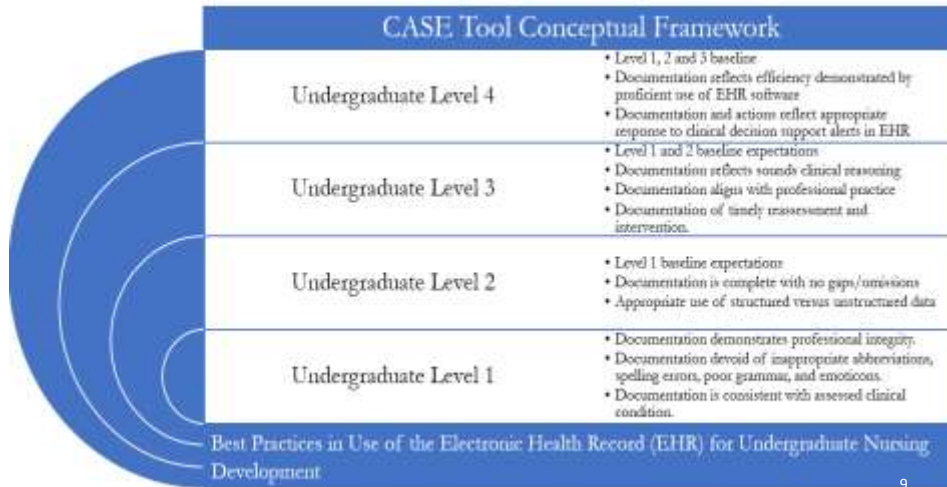


6. Documentation reflects sound clinical reasoning based on clinical findings and evidence-based practice appropriate to patient condition and clinical environment. (Essentials 4, 8)
7. Documentation aligns with professional scope of practice. (Essential 8)
8. Documentation reflects timely reassessment of the patient and other pertinent diagnostic data following interventions. (Essential 8)
9. Documentation reflects efficiency demonstrated by proficient use of EHR hardware and software with minimal clicks or keystrokes to accomplish the required documentation within the clinical workflow. (Essential 8)
10. Documentation and actions reflect appropriate response to clinical decision support and triggers/alerts from the EHR. (Essential 8)

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8

**Competency Assessment in Simulation of Electronic Health Records (CASE) Tool: A Validated Tool to Evaluate EHR Competency in Simulation**  
*Study Framework: Tied to AACN Essentials*



## Procedure

- National League for Nursing (NLN) Advancing Care Excellence (ACE) unfolding case scenario identified (sepsis)
- Modified case scenario to increase complexity and integrate the EHR
- Storyboard developed
- Expert clinician input
- Modifications to the storyboard and case scenario
- Established documentation performance levels: poor, acceptable, good, and best



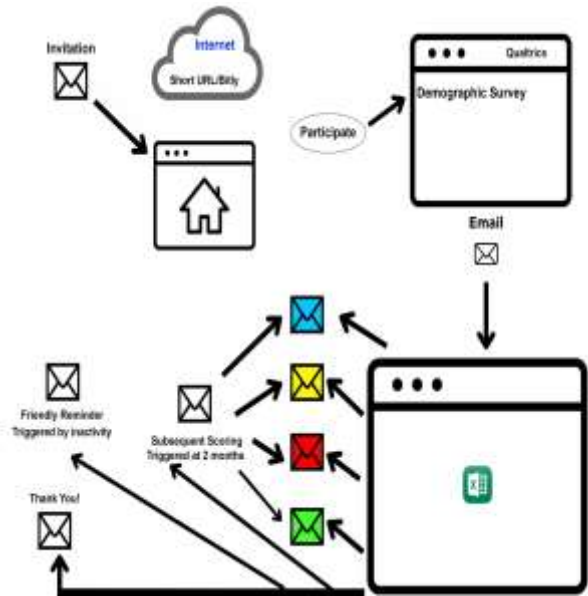


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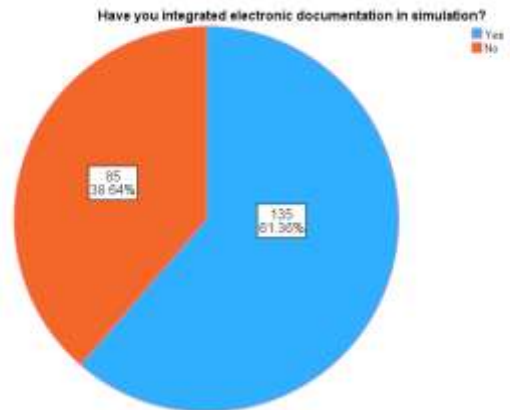
# Recruitment Strategy



# Demographics of Study Population

*Have you integrated electronic documentation in simulation?*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	135	60.5	61.4	61.4
	No	85	38.1	38.6	100.0
	Total	220	98.7	100.0	
Missing	System	3	1.3		
Total		223	100.0		

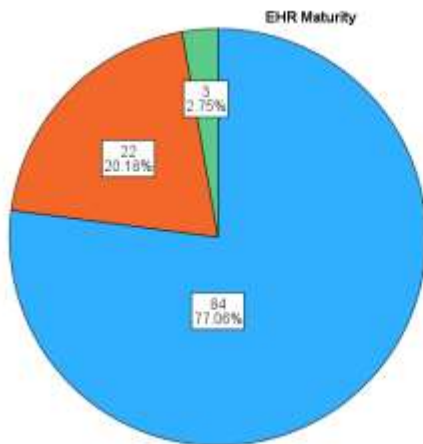


# Geographic Distribution of Respondents-41 states



15

# How mature is use of the EHR in these Universities from 41 states?



		EHR Maturity			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Basic	84	62.2	77.1	77.1
	Intermediate	22	16.3	20.2	97.2
	Advanced	3	2.2	2.8	100.0
	Total	109	80.7	100.0	
Missing	System	26	19.3		
Total		135	100.0		

16



## 2021 Dorothy Otto Research Award National League for Nursing

- A nationally representative sample of faculty (n=47) from universities representing 27 states across the U.S. provided scores for videos using the CASE tool.
- Forty-seven participants completed the first scoring survey, and 22 of the 47 participants (47%) completed the second-round scoring.
- The Cronbach's alpha which indicates internal consistency was 0.90.
- The Intraclass correlation for the final score between the 1st response and the 2nd response shows the consistency of test-retest reliability (ICC=.78,  $p < .001$ ).
- The CASE tool provided evidence of validity and reliability in evaluating EHR competency in simulation.

17

17

## Comments on the Value of the CASE Tool

"[The CASE tool] is easy to use and does reflect the important (essential) competencies in the expectations of EHR charting"

"This is a great tool to teach and for students to practice EHR!"

"The CASE tool identifies key aspects associated with EHR competencies"

"I felt the tool was easy to understand with clear examples of appropriate and inappropriate behaviors"

18

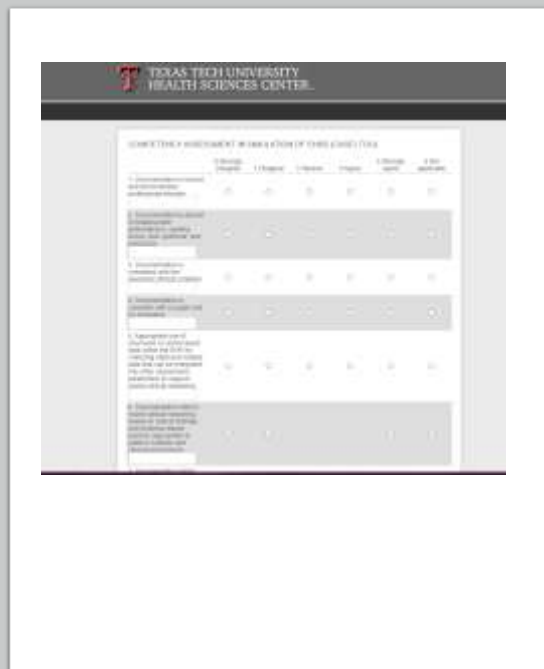
## Next Steps

- Disseminate CASE Tool website
- Increase visibility and use of the CASE Tool
- Evaluate and compare student competencies when exposed to differing teaching modalities
- Use of the CASE Tool in the clinical setting
- Use of AI to automate the CASE Tool evaluation process
- Evaluation methods with controlled trial protocol
- State of the science scoping review covering EHR use in simulation
- We welcome collaborative research and practice-setting improvement strategies using the CASE Tool!

19

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## CASE Tool Access



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21

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22