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Round Table Discussion 311, Thursday, October 17, 2:40 pm to 4:10 pm, Suite 3101

Evaluation of Simulation-based Training for Implementation of an Electronic Health Record

Presenters:

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Background:

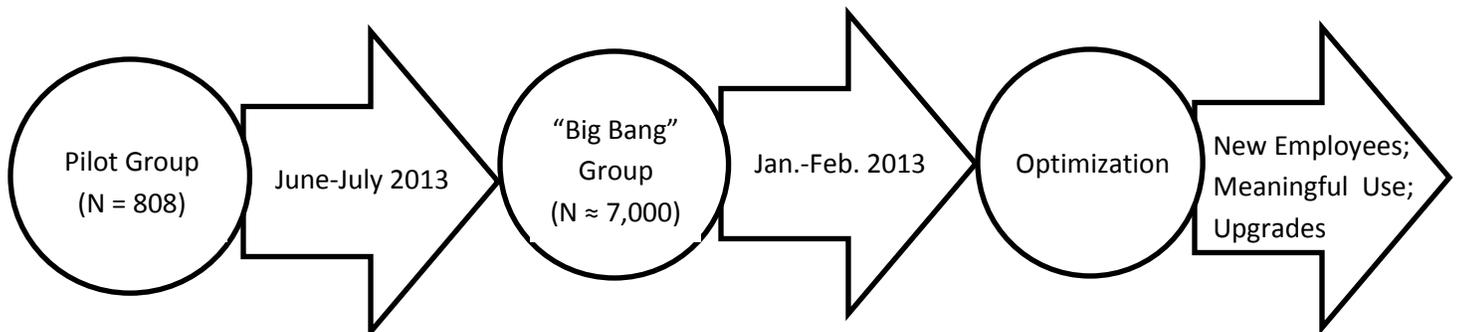
Simulation Training in Healthcare – Simulation is the representation of an act or a system by another. Healthcare simulation facilitates patient safety through education, assessment, and health system integration.

Electronic Health Record (EHR) – EHRs are digital records of patients' medical and treatment history. EHRs allow health care professionals to track data over time, identify which patients are due preventive screenings or checkups, and conduct quality improvement within their practice. EHRs are built to share information between healthcare professionals, such as specialists and those in laboratories, as well as provide patients access to their medical record.

Meaningful Use - The Centers for Medicare & Medicaid Services defines meaningful use as the set of standards that governs the use of electronic health records and allows eligible providers and hospitals to earn incentive payments from the government by meeting specific criteria. These criteria will evolve in three stages over five years. In Stage 1, health care providers and hospitals must meet objectives related to data capture and sharing. Subsequently, Stage 2 objectives will be related to clinical processes, and Stage 3 objectives will be related to improved outcomes.

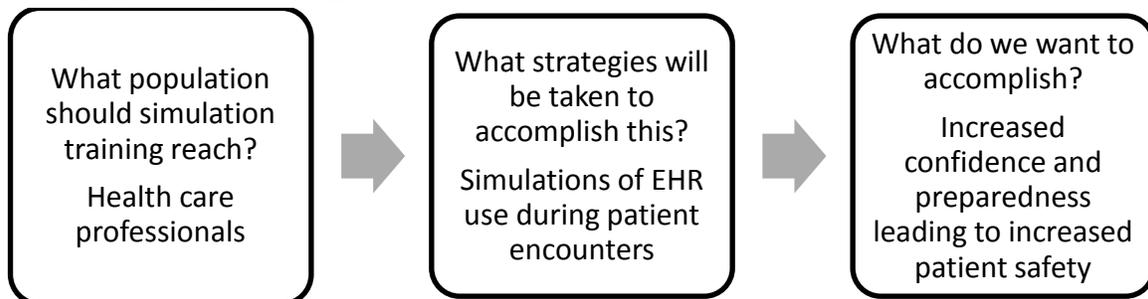
Simulation Training for Implementation of an EHR - All health care professionals (N ≈ 8,000) at the University of Arkansas for Medical Sciences will participate in simulation training for EHR use. Case scenarios are tailored for various clinical areas. In simulated clinic settings, learners use the EHR while encountering Standardized Participants (SPs), live humans who are trained to simulate patients. In simulated hospital rooms, learners use the EHR after an encounter with both a full-bodied computerized mannequin programmed to be a patient as well as a SP trained to be a family member. As needed, experts provide assistance. The SPs provide feedback about their perceptions of the learners' patient-and family centeredness while using the EHR. Learners then participate in a debriefing, reflecting on areas in which they need further improvement. Use of simulation training in this manner, on this scale, for EHR use is novel.

Training Schedule



Evaluation

Theory of Change Building Blocks (Hernandez, 2000)



Answering IF.....THEN questions from the Logic model (attached)

Challenges of implementation of evaluation

- *Evaluation Context within organizational hierarchy*
 - Complex organization
 - Large scope of the project

- Fluid nature of the project
- *Evaluation Logistics*
 - Wide range of interests in the evaluation
 - Scope of the evaluation unclear due to the unclear extent of comprehensiveness of the curriculum; the build of the training environment was ongoing during the planning period for the evaluation
 - Communication with the instructional designers and those responsible for the curriculum
 - Communication with the software company to obtain comparison data
- *Data collection*
 - Missing data, particularly among physicians, due to time constraints;
 - For “Big Bang,” will change to Web-based tool rather than paper-based tool, and
 - Will add pre-classroom questionnaire and follow-up questionnaire two-weeks post-“Go-Live.”

Data Analysis

- Qualitative analyses. Transcription methods have been developed. Software has been purchased.

Evaluation Questions

1. *How many health care providers did we train, and how many did we expect to be trained in Pilot and “Big-Bang” group?*
2. *To what extent and how simulation training affected individuals who attended the training? (attitude, confidence, skills, “meaningful use”, communication with patients and family)*

Process Evaluation/short term outcomes (ev. questions 1 & 2)

- Pre-post simulation training ratings on a scale 1-7 and open-ended questions answered by 293 physicians, 94 nurses, 353 scheduling assistants and 68 others (total 808)
- Non-parametric Wilcoxon Signed ranks test revealed a statistically significant increase of ratings ($p < .01$) between pre-simulation training and post-simulation training on all questions that addressed a level of confidence and preparedness.
- There was no statistically significant difference in ratings of questions related to helpfulness of EHR and improvement of patient safety.
- Responses to open-ended questions demonstrated a trend for learners to consider simulation training to be an exceptional part of the training.
- Focus group with four standardized patients identified areas for improvement
- Survey (Likert and open-ended) answered by three certified trainers

- Observations and video-recording of training
 - Pre-classroom training questionnaire (in process)
 - Two weeks post training –questionnaire (in process)
 - Three months post training questionnaire
3. *What contextual factors are challenges to planning and implementation of the training, and what actions were taken to respond to these challenges presented by contextual factors?*
- Contextual factor: Recruitment of standardized patients
Action: Recruited Standardized Patients using social media and open houses
 - Contextual factor: Training standardized patients
Action: Trained standardized patients in providing feedback to learners and about roles in simulation cases
 - Contextual factor: Incomplete build of the electronic training environment
Action: Re-building training environment for upcoming “Big Bang” group
 - Contextual factor: Difficulty scheduling in coordination with classroom training for a wide range of learners
Action: Added classes and paid Standardized Patients a minimum fee if they were unneeded
4. *How will the training change over time? Why?*
Based on the experience with the pilot group, changes of the program are in process for the next “Big Bang” group of learners.
5. *Is it feasible to use simulation to train all health care providers at an academic health sciences center to use an EHR?*

Questions for the audience

- Given the contextual factors that potentially confound the results, what suggestions do you have for demonstrating the impact of simulation education on the adoption of the EHR?
- How can we measure the impact of the simulation training on the patient- and family- centeredness of care during EHR use?
- How can we measure the impact of the simulation training for using integrative technology that directly feeds data to the EHR?

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