

Clinical Facility Construction Simulations Discover Safety Hazards, Improve Veteran Safety

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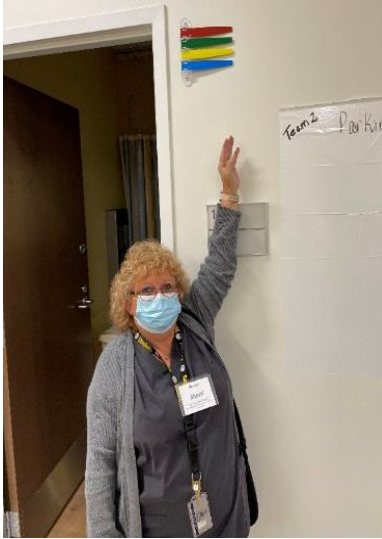


Simulation based Healthcare Design Testing (SbHDT) Community Based Outpatient Center (CBOC) room mock-up. (SimLEARN courtesy photo)

The Veterans Health Administration (VHA) is transforming how Veterans receive and experience care by using simulation before and after building clinical spaces. The Simulation Learning, Evaluation, Assessment, and Research Network's (SimLEARN) Assessment Collaboration and Outreach (ACO) portfolio uses a process oriented, simulation-based strategy to identify latent safety threats (LSTs). LSTs are unintentional harms that could affect patients once the facility opens, such as missing equipment, inefficient workflow or insufficient space for procedures.

Currently, there are no requirements for clinical facility design testing or post-construction site assessment prior to opening new clinical spaces and seeing patients. Facility design evaluations typically happen once construction is completed when it is often too late to rectify design flaws. By incorporating [high-reliability principles](#), the ACO team uses simulated patient care scenarios to test clinical workflows, patient flow functionality and safety of the space, while recording observations. Using proactive assessments during simulation-based healthcare design testing (SbHDT) and in post-construction system hospital activations (S/HA) help identify potential issues before and after design and construction.

Walking 'a day in the life' of a patient using simulation recreates the patient experience for facility designers and hospital staff, which helps them validate design goals. The identification and mitigation of potential hazards through simulation can translate into significant cost-savings for the VHA, positively influencing the readiness, per capita cost and patient experience.



Sherri Boisvert, RN Simulation Nurse, demonstrating that the flag alert system has been installed too high and they would need to be moved. This was discovered during activations of the new clinic. (SimLEARN courtesy photo)

Most recently, the ACO team worked with the San Antonio Northwest Health Care Center (NWHCC). In June 2021, ACO conducted a SbHDT proof of concept by creating mock-ups of two clinical spaces within an emergency department. During this event, clinical staff and facility designers were side-by-side testing and evaluating the space through simulation which allowed real time architectural design changes to be made. The ACO team conducted three additional SbHDT assessments reviewing various phases in the design of a community-based outpatient clinic (CBOC) and a new surgical department. As a direct result of their assessment, the NWHCC health care team was able to prioritize training and equipment requirements to allow them to effectively transition to their new clinical space.

Pre- and post-simulation activity participation with frontline staff encourages early mitigation of LSTs through early awareness. Participants gain knowledge of the construction process and guidelines, giving them greater insight into the reasoning behind facility design. Using simulation before and after construction enhances staff confidence and ensures a safe environment, which leads to improving Veteran outcomes.

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