SIMULATION CENTERS



3 PART SERIES P3

Research Institute o Chemical Defense Simulation Training Laboratory

Better Prepared.

As more healthcare and academic institutions see the value of using simulation as a teaching/learning/evaluation tool, they need to design space to maximize simulation activities.



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Although each simulation center is unique in size and function, our experience has identified several universal elements that apply across all simulation design projects, both large and small. In this three-part email series, we will discuss the primary spaces in a simulation center and the importance of their functions.

Reception and Waiting Areas

The reception area is used to greet trainees and visitors and is the "front door" to your simulation center. It should be designed to communicate your mission and vision for the center.

Reception spaces often have electronic monitors to display class schedules and directions within the center. You may even want to consider adding a kiosk or interactive map to aid in way finding if the center is on the larger size or spans several floors.

Additional gathering areas may be necessary near skill areas as waiting spaces during lab/room transitions. It also gives students an opportunity to interact with other students and faculty.

Support Spaces

Lastly, you must also plan for behind-the-scene spaces that are critical to the support of the educational operations.

Simulation centers should also include offices for trainers and administrative support, break areas, locker rooms, data centers for backup and storage of recorded simulations, and "hotelling" workstations where students and visitors can work remotely while at the center.

Another important component that should not be overlooked is storage space. As many centers need to be flexible and to accommodate a variety of different types of simulation activities, providing sufficient and different types of storage spaces that are convenient to the simulation rooms is key.

Conclusion

As more healthcare and academic institutions see the value of using simulation as a teaching/learning/evaluation tool, they need to design space to maximize simulation activities. The space needs to accommodate equipment, areas for teaching, practice, observation, debriefing, and other activities. Organizations need to understand the options for space

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allocation and be able to identify their current and future simulation needs that are unique to their educational goals.

Flexible space is an important design consideration. The design should accommodate a variety of programs, include space for future expansion, and have the capability to accommodate future technologies. Due to the cost, many institutions are unable to build all requirements into the project scope. The space should be designed and engineered to accommodate future expansion and new medical technologies, even those that are not currently part of the financial plan. This will alleviate the need for total renovation should new technology or additional funding become available. As innovations are rarely foreseen, additional space, or flexible space, can also be a great asset to a simulation center.

Case Study:

University of San Francisco School of Nursing **Medical Simulation Lab**

With the job function of nurses expanding far beyond tasks involving traditional bedside care, new responsibilities in managing complex patient care requirements have grown to include caring for an aging population, learning and using medical technologies, adhering to patient privacy and safety rules, and making critical decisions on the spot. These new layers of responsibilities now require a higher level of knowledge and training.

With the aid of a research grant from the US Army Medical Research Acquisition Activity, the University of San Francisco School of Nursing's new nursing simulation research lab is conducting a three-year study to determine how best to teach nursing students to improve patient safety and avoid medical errors by using sophisticated clinical learning equipment.

"Each time they come to me, it gets harder and harder, which is not what * happens in the hospital. Students come into simulation scared, but they leave better prepared for the outside." Susan Pauly-O'Neill, Assistant Professor, University of San Francisco, School of Nursing

www.usfca.edu/nursing/newsletter_2009_sim

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University of San Francisco School of Nursing Medical Simulation Lab

The study will use three different methods of pedagogic instruction – standardized patient, high-fidelity, and virtual simulation – employed across patient exam and emergency room scenarios. School of Nursing faculty will examine which simulation strategies can be adapted across disciplines that share high-stakes error consequences. The research includes both assessment and training and will allow faculty to measure the cognitive and affective levels of the students' abilities.

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The simulation lab consists of two standardized patient and two high-fidelity simulation rooms equipped with hospital beds, over-bed tables, bedside table, IV pole, simulated oxygen and suction, and functioning hand sinks. A control room with two-way mirrored glass is centrally located with views into all four rooms and also controls the two high-fidelity patient rooms.

Additional spaces include a conference/ debriefing room with monitors for live feedback, a virtual simulation computer room, preparation room, offices, storage, waiting room, and reception area. All of the offices are sized appropriately and have stubbed-in services to switch to either standardized patient or high-fidelity rooms for future use in simulation training.

When the research study is complete, the simulation lab will transition to full-time instructional use by the School of Nursing.

Case Study:

US Army Medical Research Institute of Chemical Defense Simulation Training Laboratory

As the nation's leading organization for the development of medical countermeasures for chemical exposure, the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) offers a state-of-the-art medical training laboratory.

USAMRICD's Chemical Casualty Division's staff of physicians, nurses, and other highly qualified military and civilian personnel have developed, organized, and implemented postgraduate education programs for medical professionals, hospital administrators, medical planners, and first responders.

In order to effectively educate these professionals about how to triage and expedite treatment for patients who have been exposed to chemical, biological, or nerve agent materials, the institute's laboratory utilizes the full spectrum of



simulation devices, including partial task simulators, manikins, and virtual reality simulators.

Programs include the Nerve Academy, a video-based platform that teaches nerve agent physiology, antidotes and therapy, and SIMapse, a highly advanced simulation experience that allows participants to examine the effects of both the chemical agent and the antidote at the synapse level. The one-and-a-half story training complex within USAMRICD houses auditoria, a simulator laboratory, and ancillary support spaces. In addition to their conventional simulation programs within the facilities, CCCD conducts detailed, hands-on field simulations to train students in a realistic, real-world environment.

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