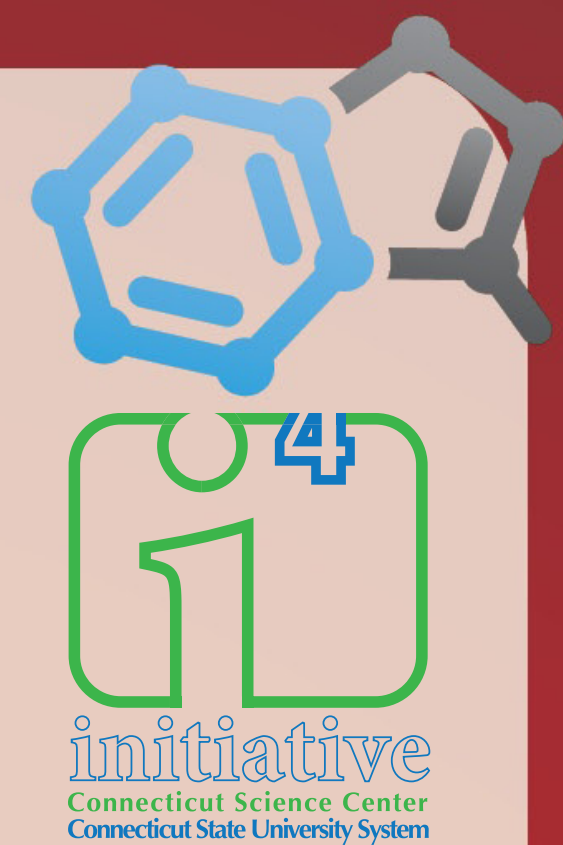


Simulating the Human Body: Health



Abstract

Today sophisticated, computer-controlled machines can simulate the human body's responses and create experiences close to human patients. Using Resusci Ann, a life-like mannequin used to train nurses, EMTs, and paramedics, visitors can listen to heart rhythms, take blood pressure, practice rescue breathing, conduct CPR chest compressions and more.

Storyline

Simulation is an ideal medium for hands-on application of learning. Students are able to touch, feel, hear, see, and even smell human conditions in a safe environment of discovery. High-tech mannequins can be programmed as healthy, ill, or alternate between the two. A student can assess and perform interventions that can improve status, cause a decline, or even death. In simulation, students learn from their mistakes, and no one gets hurt.

Faculty who work with simulation are specially trained through seminars and workshops provided by the manufacturers of the mannequin. Training consists of learning the computer programming skills necessary to design scenarios that provide the link between theory and practice. The mannequin, connected to a laptop computer, responds to the commands in the computer programmed scenario, as well as the interventions performed by the student. Faculty can run programs on-the-fly, changing mannequin responses at will according to student interventions.

In the Southern Nursing Program, high-tech simulator mannequins are in use throughout the semester and in every level of the program. In the first weeks of the program, nursing students utilize the high-tech mannequins as a means for learning blood pressure measurement, pulse-taking, and counting respirations. A ventilation system within the mannequin causes the chest to rise and fall simulating a respiratory cycle and several pulse sites provide a real-life feeling. Many "Wow, I got it!" moments happen as students learn to correctly feel and count the pulse, correctly measure a blood pressure, or count respirations. As the semester advances, students learn to give intravenous fluids, blood transfusions, catheterizations, suctioning, and many more skills through practice on the mannequins. Elements of surprise, such as vomiting, crying, or screaming by the mannequin, causes the student to step back and think about their actions. Creating critical thinking moments are the hallmark of simulation.

As the students progress with their technical and critical thinking skills, the simulations become more complex with scenarios representing acutely ill patients. Two of the most frequently used scenarios involve patients fresh from the operating room. The scenarios were faculty-designed and programmed into the laptops. Many irregularities are included in the scenario to assess the students' knowledge of patient safety as well as normal and abnormal body functions. Students can work in groups or one-to-one with faculty when engaged in the scenario. All students are debriefed at the end of a scenario to talk about the experience and evaluate the learning.

On the "Take Your Child To Work Day" this spring at Southern, the simulation mannequins were used to introduce the young children to what nurses do and some of the sounds nurses' commonly encounter while using a stethoscope on the body. Each child was dressed in scrub gear and given a stethoscope to listen for heart beats, breath sounds, and bowel sounds. The children were actively engaged with the simulators and delighted in discovering the sounds of the body. Looks of bewilderment and amazement were seen when the simulation mannequins talked, vomited, and cried!

The student of today is very computer and technology savvy. Hands-on learning with high-tech simulation equipment provides a learning environment to peak and sustain their interest. A common question by interested applicants to the program is whether simulation is available as a learning experience. At Southern, we are proud to say it is.

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