**MEDICAL SIMULATION OVERVIEW**

“Simulation is a generic term that refers to an artificial representation of a real world process to achieve educational goals through experiential learning.” (Abdulmohsen, 2010)

Medical simulation has increased exponentially over the past two decades for reasons such as an increased focus on patient care and quality, reduction in health care costs through improvement of competencies and better learning outcomes for medical students.

A John Hopkins study claims that more than 250,000 people in the U.S. die annually from medical errors. (John Hopkins Medicine, 2016) This is the third leading cause of death in the US. With a statistic like this, it is no wonder that the need for improved education is a priority. Simulation can deepen learning engagement by providing replicated clinical scenarios that are immersive and experiential. “It is a powerful learning tool to help the modern healthcare professional achieve higher levels of competence and safer care” (Aggarwal, et al., 2010)

The use of simulators allows trainees to practice their skills in a risk-free environment. Giving them a chance to master their techniques in a life-like scenario improves their reliability to make the right decisions in real life – which positively impacts patient safety and health.

**HISTORY OF SIMULATION**

Aviation and aerospace industries have been using simulation as a teaching tool for many years. They are now widely used across many industries; especially in higher risk professions and disciplines. Medical simulation training can be traced back to the 1960’s and early 1970’s where a computer enhanced manikin was able to reproduce symptoms of cardiac disease. A study of the cardiology patient simulator concluded that fourth year students who used the simulation were better skills than their counterparts who were trained traditionally.

In 1980 the use of manikin simulators spread to anesthesiology and a realistic environment were mimicked to improved training. (Jones, Passos-Neto, & Braghiroli, 2015)

Today, high-fidelity manikins have been developed with wireless technology can breathe, dilate their pupils, and experience arrhythmia. Manikins are becoming lifelike and can provide trainees with an opportunity to monitor vitals, give injections and insert tubes.

Recently even more realistic environments have been introduced with the development of VR simulation. Being able to create a life-like scenario in a hospital… real overcoming the expected variability of real scenarios in a hospital setting

**THE IMPORTANCE OF SIMULATION**

Simulators serve as a tool that helps trainees with clinical experience. The process of practicing in a simulated environment allows for many different scenarios to be carried out for individuals and teams. Sessions can be video-taped and played back to trainees for feedback and debriefing.

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