

Simulation based training in Management of Contrast Reaction at Henry Ford

Simulation is “an imitation of a situation or process”. It is used in the development and testing processes in many industries including aviation, safety engineering, nuclear energy, video games, etc. Simulation based training is very rapidly becoming an integral part of education in healthcare.



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The Henry Ford Health System Center for Simulation, Education and Research has planned and implemented a variety of courses for a broad scope of learners. Such examples of courses are Ultrasound guided central line placement, Fundamentals of Laparoscopic Surgery, Institutional curriculum, Departmental OSCEs (Objective Structured Clinical Examination), Fundamentals of Internal Medicine, Contrast Reaction Simulation for Radiology staff, residents and technicians, Advanced Cardiovascular Life Support, Advanced Trauma Life Support, Activities of Daily Living, Critical Care Medicine and Critical Care Nursing courses. The Center is utilized for teaching and evaluating the six core competencies of physician practice – patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and system-based practice. Participants in these courses can include staff physicians, nurses, medical students, residents, and physician assistants from different fields of medicine.

Radiology at Henry Ford is actively involved in training the residents at the Simulation Center. A curriculum has been developed to utilize various aspects of simulation. These include:

1. Contrast reaction management
2. Ultrasound and CT guided interventional procedures
3. Lumbar puncture module
4. Vascular simulators for angio-interventional procedures

Simulation based training in Management of Contrast Reactions -

Reactions to intravenous contrast media are uncommon, but can be potentially life threatening. These reactions need to be recognized and managed immediately by radiology residents and staff who are often the first responders before the arrival of the Rapid Response Team. Due to the infrequency of these reactions, regular training is required to maintain familiarity in the management of these acute contrast reactions.

At Henry Ford, all the radiology residents undergo structured, periodic training at the Simulation Center to learn and maintain skills in the management of acute contrast reactions. The training is imparted by a staff radiologist actively involved in creating and updating protocols for the prevention and management of contrast reaction for the department. A staff nurse at the Simulation Center with understanding of the operation of the software helps conduct this program. The training closely follows all guidelines set by The Manual on Contrast Media by The American College of Radiology.

