New neurologists receive stroke training with mannequins and other simulation techniques

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Loyola researchers used this high fidelity patient simulator to help train new neurologists how to treat a stroke patient in the emergency room. The researchers are, from left, : Jessica Ray, RN, Esteban Golombievski, MD, Sean Ruland, DO, Rick Gill, MD and Matthew McCoyd, MD. Not shown is Michael Star, MD. Credit: Loyola University Medical Center

One of the most challenging cases that a first-year neurology resident

physician can face is a stroke patient in the emergency department.

The physician must quickly decide whether the patient is a candidate for the clot-busting drug tPA, which can minimize stroke damage. But giving tPA to the wrong patient can make the stroke worse. There's no time to waste, because in one minute, a stroke can kill nearly 2 million brain cells.

A new study indicates that using a high fidelity patient simulator and other simulation-based education techniques can significantly improve the knowledge, skills and confidence of first-year neurology residents.

The study by Loyola University Medical Center neurologists was presented during the American Heart Association's International Stroke Conference 2015 in Nashville, Tenn. The study was conducted at Loyola University Chicago's Center for Simulation Education.

Simulation-based medical education (SBME) enables students, residents, nurses and other medical personnel to practice under safe, controlled and forgiving conditions. Previous studies have found that SBME is superior to the traditional style of medical education and has shown improved outcomes of knowledge, skills and behaviors.

The Loyola study evaluated SBME for teaching neurology residents how to treat stroke patients. Six incoming residents participated in a simulation of a stroke patient arriving in the emergency department. The resident physician managed every step of care, including assessing the mannequin-patient, paging other members of the stroke team, ordering and interpreting lab tests and CT scans, etc. The simulations were performed during the first and third weeks of the residents' orientation.

The physicians' skills improved significantly from the first to the third week. Surveys given to the residents showed their confidence also

improved. The new physicians also showed a 16.1 percent improvement on a multiple-choice test about treating stroke patients in the emergency department.

The authors concluded that simulation-based medical education can help new physicians acquire technical and non-technical skills such as leadership, teamwork, communication, situational awareness and decision making.

More information: The study is titled "Simulation-Based Medical Education for Incoming Neurology Trainees to Improve Hospital Stroke Emergency Performance."

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