Tracheostomy Overlay for Simulated Patient Use

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Technology description

The overlay will consist of a partial tracheostomy tube and a skin-like material that will make the actor wearing the overlay appear as a true tracheostomy patient. The overlay will also have embedded in it a biofeedback system that will alert the student in training whether he or she is using proper technique in manipulating the tracheostomy tube. This tool will enhance care for tracheostomy patients through effective educational simulation.
The human respiratory system requires inspired air to enter the body through the mouth or nose, then pass to the trachea, bronchi, bronchioles, and lung tissue where the oxygen is exchanged for carbon dioxide at the capillary level. There are some diseases that require the air to bypass the mouth and nose and enter through the trachea (tracheostomy). These patients have a one-inch incision just below the Adam’ s apple where a small device is inserted to keep the stoma from closing up (tracheostomy tube; figure below). These patients are challenging for healthcare providers to speak with, care for, and assess for complications. Because of these challenges, it is imperative that educational institutions provide safe simulated learning modules that include patients with a tracheostomy.

Application area

This invention is an ‘overlay’ that is applied to actors who play the role of a patient in simulation training.

Advantages

Improved training for healthcare providers to attend patients with tracheostomy
Real-time patient feedback
Interactive learning experience to make scenarios more realistic as opposed to use of computer-programmed mannequins

Institution

University of Delaware

Inventors

Amy Cowperthwait

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com