

# Environment, health, and safety

## During an emergency: Be safe!

By Kristen Welker-Hood, ScD, RN

**IMAGINE** that while you're at work today caring for patients in the local hospital emergency department (ED), you suddenly hear a booming rumble so loud it sounds like thunder overhead. Strangely, there isn't a cloud in the sky and the sun is beaming through the vibrating windows. Curious about the noise, you go to the nurses' station and receive word that there has just been a large explosion at the local chemical refinery.

Soon after, your charge nurse informs the staff that a call has come in warning that patients will soon be "life-flighted" to your ED, and that you should prepare to receive them. You are also warned to expect many ambulatory victims who might arrive at the hospital on their own. (This true event occurred in March 2005 in Texas when a BP fuel plant explosion killed 15 and injured 170 workers.)

While the scenario described above might seem like an unusual event, industrial emergencies occur more frequently than we would like to admit. The *Report on Hazardous Substance Emergency Events* from the Agency for Toxic Substances and Disease Registry provides a good barometer for the likelihood of industrial incidents.

According to this report, based on data from 16 state health departments, about 8,978 accidental spills or leaks (as many as 20 per day) occurred in 2001. In addition, a 1998 report from the U.S. Public Interest Research Group concluded that 41 million Americans live within 3 miles of a chemical facility, adding to the danger of chemical releases in communities. Chemical incidents on a smaller scale (such as accidental pesticide releases at a local farm or motor vehicle accidents that may cause trucks transporting hazardous substances to spill their cargoes on a local road) happen frequently but are harder to quantify due to a lack of a unified reporting system.

The frequency of chemical releases in both rural and urban industrial areas underlines the importance of nurses acquiring adequate first-receiver training that allows them to care for contaminated patients without endangering themselves. "First receiver" is a term used to describe a healthcare worker who works at a site remote from where the hazardous substance release occurred.

Adequate training is critical because victims of chemical-related incidents, servicing hospitals, patients, and staff are placed at serious risk when untrained and unprepared employees perform emergency decontamination procedures at the hospital receiving site (Edwards D, Williams LH, Beatty J, Hayes MJ, Connor B, Hodgson MJ, et al. *JONA*. 37(3):122-130). Therefore, nursing personnel, particularly ED, critical care, and operating room nurses, must receive first-receiver training because they are frequently mobilized by hospitals and are expected to maintain a state of readiness so they can effectively respond to an influx of patients should a chemical-related disaster occur.

First-receiver training is crucial to protect nurses and other healthcare workers from chemical hazard exposures while caring for contaminated patients. According to the OSHA *Best Practices for Hospital-based First Receivers* guideline, appropriate training entails educating employees about their role and responsibilities during an incident. These roles and responsibilities are based on job functions and tasks detailed within the Hospital Incident Command System. Nurses acting as first receivers must be trained to evaluate the situation (such as scope and nature of the problem and the identification of hazards they might encounter); properly select and use personal protective equipment and chemical protective clothing; perform triage of contaminated patients; and provide proper decontamination.

Finally, hazard-preparedness administrators must assure that all staff members receive at least awareness-level training to prevent contamination of the facility. Once staff have received their appropriate training, this knowledge must be retained through frequent drills in which staff are able to practice responding to an incident. These drills help cement the training so that, when a real event occurs, designated first receivers, administrators, and support staff will be able to confidently and competently care for contaminated patients while assuring their own safety in the process.

Nurses interested in first-receiver training should ask their employers if such a program exists at their facility. They can also contact their state nurses association to request information about how to participate in ANA's first-receiver training program offered through ANA's Center for Occupational and Environmental Health. ★

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