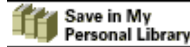




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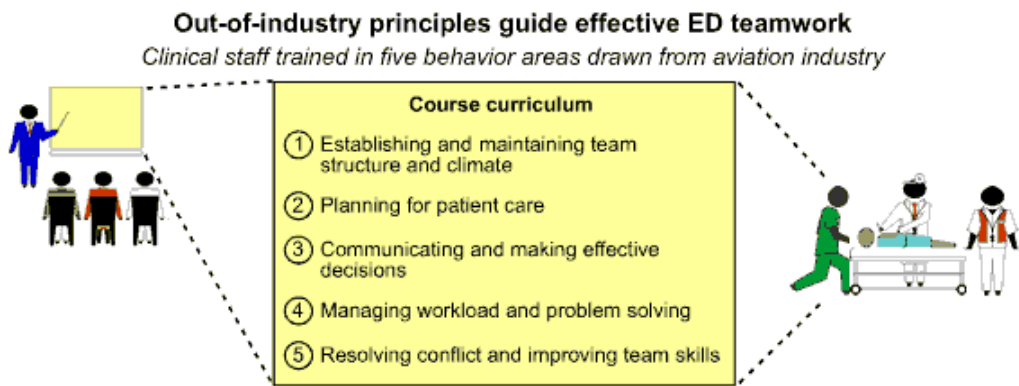
Care quality: ED teams reduce errors by modeling aviation cockpit behaviors

07/02/2003

In an effort to control the incidence of medical errors, many hospitals have begun to model error-reduction strategies first used by the aviation industry. Some institutions have taken this effort a step further, adapting team behaviors used in the cockpit to help coordinate interdisciplinary medical teams. One such program—coordinated by Andover, Mass.-based Dynamics Research Corporation (DRC), a company that designs team training for U.S. Army aviators—aims to modify team behaviors in the ED by reinforcing and clarifying lines of communication (DRC website, accessed 6/30/03). At Providence St. Peter Hospital in Olympia, Wash., physicians expressed little resistance to the protocols and have shown interest in teamwork courses, according to Dr. William Hurley, ED medical director, (*Watch*, 6/25/03). Research shows that the training program reduces clinical errors and improves staff attitudes toward teamwork (Morey et al., *Health Services Research*, December 2002).

Training prepares physician, nurse leaders for safety instruction

Designed by a team of emergency physicians, nurses, consultants, and behavioral scientists, MedTeams, the DRC training program, is based on research conducted in the aviation industry, a “recognized leader in safety” (DRC website, accessed 6/30/03). According to a study in the *AORN Journal* (Rivers et al., January 2003), the aviation industry has used “safety training and standardization” to decrease by 50% to 81% errors caused by human factors over the past 20 years. MedTeams focuses on five principles comprising 41 behaviors borrowed from aviation crew resource management and adapts them for use by ED personnel (DRC website, accessed 6/30/03; *Watch* interview, 6/25/03).



Source: *Watch* interview, 6/25/03.

Mary Salisbury, director of MedTeams, notes that the program trains ED leaders—usually physicians or nurses who are “strong informal leaders or official clinical leaders”—to become instructors who then teach the course to their own staff (*Watch* interview, 6/30/03). Hospitals with an ED staff of about 150 generally choose about six to 10 instructors to attend a 40-hour, weeklong course, which costs \$2,500 per instructor. Although staff training time varies by facility, it typically lasts from four to eight hours, Salisbury says. The company recommends an annual, one-hour refresher course to maintain staff training; refresher course materials cost \$125 for packets of 50.

Protocols help control care disputes among Providence St. Peter staff

Dr. Hurley began training his staff in aviation management protocols six months ago with a Volunteer Hospital Alliance (VHA) program modeled on the MedTeams course (*Watch* interview, 6/25/03). At the time, Hurley was preparing his staff to work in a new facility renovated specifically for team-based care (Michael, *Olympian*, 6/7/03). Hurley told the *Watch* (6/25/03) that the

department has benefited from learning the aviation protocols, particularly those that teach staff to read back and confirm orders and to use the “two-challenge rule.” The rule teaches members to challenge an order they disagree with twice; once to convey their concern and allow for any emotional response from the person being questioned and a second time to support the challenge with evidence. Hurley notes that before training, staff members may have refrained from challenging a team leader due to the “halo effect”: the belief that the team leader is infallible. While he expected some physician pushback in implementing the protocols, he notes that doctors have reacted positively to the teamwork training. Even senior physicians, whom Hurley expected to be the most likely to object to the program, have shown interest in becoming course instructors.

The biggest staff-training challenge has been learning how to coordinate the ED teams so that they learn to rely on each other and share resources. Hurley admits the current training may fall short of promoting this coordination and says he expects to address the shortcoming using new protocols over the next year. He also plans to conduct a staff satisfaction survey and a review of the training's impact on clinical errors within the next month.

Aviation procedures reduce ED errors, improve staff attitudes toward team, institution

A review by Antioch, Calif.-based Sutter Delta Medical Center, another VHA program participant, finds that the training halved the number of ED errors between December 2000 and July 2001, ED Medical Director Dr. Ellen Leng reports (*Modern Healthcare*, 4/22/02). Studies show that in addition to reducing errors, the program also improves staff members' attitudes. A study in *Health Services Research* (December 2002) comparing a group of 684 physicians, nurses, and technicians who received DRC training with a control group finds that the clinical error rate dropped significantly in the experimental group (30.9% before training vs. 4.4% after training, $p = 0.039$). Moreover, experimental group members' attitudes toward teamwork improved ($p = 0.047$), and staff reports of institutional support increased ($p = 0.04$).

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