



# Advancing *Patient* Safety

Developing an improved understanding of failures that threaten patient safety is a major goal for more than 18,000 accredited health care organizations in the U.S. They are taking new steps to advance patient safety by working with researchers at the Battelle-operated U.S. Department of Energy (DOE) Pacific Northwest National Laboratory (PNNL), who apply engineering analysis practices to identify failures that can lead to fatalities or major injuries. Measures to increase patient safety, especially for high-risk procedures, are then developed.

The analysis was prompted by a new standard instituted in July 2001 by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), which requires accredited organizations to annually conduct a proactive risk assessment on a high-risk process. Hospitals, health care networks, health maintenance organizations, integrated delivery networks, preferred provider organizations, clinical laboratories, as well as home care, assisted living, behavioral health care and ambulatory care organizations are among the organizations that will conduct these assessments.

“JCAHO encourages members to consider engineering analysis practices used successfully in other industries to evaluate failures and correct mistakes,” said PNNL’s

Jon Young, Program Manager. “In 1999, the Institute of Medicine reported that about 98,000 deaths occur annually due to health care failure. It is important for the industry to lower these statistics.”

PNNL researchers are working with three hospitals in Washington State to meet the new standard. “The first step is identifying situations where errors have occurred that could have, or did, result in serious consequences,” said Garill Coles, Chief Engineer.

“We then proactively apply engineering analyses to develop step-by-step scenarios that pinpoint vulnerable areas and identify where new measures are needed to avoid placing patients at risk.”

PNNL researchers have experience analyzing difficult and high-stress situations where mistakes are most likely to occur from previous work with the nuclear industry and NASA. “NASA uses engineering analysis technique in preparation for space mission launch readiness reviews so

no critical single failure exists that can result in loss of life, or loss of the launch vehicle and payload,” said Young. “The ultimate goal for NASA, as it is for the health care industry, is to preserve human life.”

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