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Briefings on
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# Nuclear industry improvement protocols find place in hospital settings

***Issues regarding safety apply to both sectors***

**Howard Bergendahl** has spent more than 20 years advising about safety in the nuclear industry. When a friend of a friend wanted an outsider's perspective on patient safety practices at her hospital, Bergendahl and an associate paid a visit and conducted an assessment of the facility's patient safety practices.

Thus started Bergendahl's efforts to bring lessons learned in the nuclear industry to healthcare with the establishment of the Bergendahl Institute. The Bergendahl Institute is one of a growing number of companies that are taking quality improvement protocols from other industries and applying them to healthcare. In addition to the nuclear industry, the philosophies Lean Thinking from the automobile manufacturing industry and Crew Resource Management from the airline industry have been widely applied to healthcare settings.

During his first hospital consult, Bergendahl was immediately able to identify problem areas that he had experienced over the years in the nuclear industry.

"They were just basic interactions and ways of doing things that we had experienced and worked through in the nuclear industry," says Bergendahl, president of the Avon Lake, OH–based Bergendahl Institute, about the issues he found in the hospital setting. "They were the exact same conditions."

A major issue area spotted by Bergendahl was the need to improve handoffs between shifts and to different departments. handoffs are one of the 2006 National Patient Safety Patient Goals established by the JCAHO.

The nuclear industry had previously identified a formal process for handoffs because it had been a critical area for error in that industry.

"The communication of critical information between people in many healthcare settings is still very informal and not structured," says Bergendahl. "Time outs and preprocedure briefings are not well-developed in advance."

Bergendahl also cites distractions as a key problem. "Pharmacists are erring in keying in medication data while being distracted with no verification procedures in place in some cases," he says.

Bergendahl realizes that the healthcare industry is aware of these problems, but says fixing them is easier said than done.

"The difference with the nuclear industry is that we've done it and realized that a lot of the difficulties were with different groups and competing interests," he says.

### Common ground

Bergendahl cites the following common issues between the two industries:

- Unclear organizational hierarchy
- Financial pressures (e.g., strong unions)
- Similar working conditions

"One thing we learned is that when people are working under pressure and in difficult situations, human behavior is such that people react and behave in the same way whether at a nuclear plant or a hospital," says Bergendahl.

Problems are caused at various points in the system, he notes.

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"One of the things we learned in the nuclear industry is that the source of errors is not always right at the control panel or the patient interface [in hospitals]," says Bergendahl. "It's the people who prepare the documents, label the medications, communicate information to the laboratory, and order the medications."

The nuclear industry had to make everyone—even cleaning staff—aware of risks and how to respond to different conditions, says Bergendahl.

"We had significant events caused by cleaning [staff] —they were not aware of when to report things or how to handle things," he says. "It's the same in hospitals—everyone is important to the process."

What the nuclear industry found was that spending millions of dollars on high-tech equipment alone did not eliminate risk because there were people and human behavior involved.

"We ultimately found that everyone needed to be trained on risky behaviors—some of these behaviors are just natural, inherently human behaviors, but in certain work conditions they become high-risk behaviors," says Bergendahl.

"[Staff] need to be trained not to do what their instincts tell them to do," he adds.

The nuclear industry went from blaming people to educating them about required behaviors to reduce risk and advising them about processes and equipment.

### Culture of safety

The Chernobyl disaster taught the nuclear industry that it needed to go even beyond educating staff about risks and desired behavior. It also needed to change the working environment.

"If an organization does not encourage those [risk-reduction] behaviors, you could still have major events," says Bergendahl. "Although people know how they should react, the culture [might] not reinforce that behavior."

A culture of safety is needed to reinforce appropriate learned behaviors and make them the norm.

"People do things contrary to what they're trained and what they know is the right way because of the pressures of the work culture," adds Bergendahl. "A safety culture is a subtle but powerful influence on how people act."

What Bergendahl emphasizes to hospitals is that they can't be successful unless they have a culture that focuses on patient safety. However, this culture can be fragile, he says.

"Things can change when there are corporate changes and new leaders come in—a single person in a key position in an organization can alter the culture," says Bergendahl.

### Positive reinforcement

Bergendahl takes a proactive approach to observing behaviors and reinforcing desired behaviors. He and his associates identify risky behaviors, such as not checking patient identifiers or not conducting a time out before starting procedures. They then arrange peer observations during which employees observe each other and document whether they witnessed positive behavior or had to coax someone to do something.

"We document and measure the positive performance indicators—the number of positive behaviors increasing or decreasing," says Bergendahl.

The premise is that by focusing on positive behaviors, they will achieve more of them, he notes.

### Use incentives to reinforce positive behavior

Bergendahl encourages the use of incentives to reinforce positive behavior, such as a quarterly drawing for a vacation or big-screen TV. He has found that people are willing to provide data.

"It's a nonthreatening situation. You're not auditing or looking for negatives, you're recording positives," he says.

Bergendahl tells hospitals that if they start to see a drop in positive behaviors, they need to proactively reinforce those behaviors so they don't drop to a level at which negative behavior results in a sentinel event.

**Focus on underlying behaviors**

"When you're treating symptoms [alone], there will always be a new one," says Bergendahl.

Focusing on underlying events through root-cause analysis always leads to a handful of human-related events, he adds.

"What we do in our observations is look for these behaviors that are usually the root cause of an event," he says.

**Look at fundamental behaviors**

Basic, fundamental behaviors involve communication, checking flow protocols, time outs, handoffs, and culture (i.e., reinforcement of behaviors).

Legal concerns can hamper communications within a hospital. A significant issue can be identified and not discussed with staff because of legal concerns, says Bergendahl.

"Many organizations, in an effort to reduce legal risk, are actually increasing their safety risk, and > p. 4

## Colorado hospital utilizes nuclear industry principles

Valley View Hospital of Glenwood Springs, CO, hired the Avon Lake, OH–based Bergendahl Institute to look at its surgical services and medication management systems, says **Deb Wiepking,** case clinical officer at Valley View Hospital.

The hospital had experienced an event that precipitated a root-cause analysis.

"[The Bergendahl Institute] helped us use methodologies we hadn't used in the past—[it] got us to hone down and focus on what the root cause was instead of playing the blame game," says Wiepking.

Wiepking says the Bergendahl Institute's methodologies helped Valley View focus on where the system broke down and how to plug the holes.

On the root-cause analysis side, Bergendahl personnel helped Valley View flow chart the important aspects of what was a complex situation.

The hospital had experienced an adverse event related to administration of medications that occurred during several days.

As a result, Valley View changed its dosing protocols and declared that certain drugs could not be ordered "as needed."

The hospital also looked at systems technology and established a flagging system for nurses to indicate when medication levels may exceed recommended levels.

"Sometimes it gets so busy [that] we don't think about everything," says Wiepking. "This puts these issues up on a conscious level."

Valley View hasn't had any adverse events since the new system's implementation.

"What they really helped us with was identifying key critical failures and putting it in a picture [through a flow chart] that really showed how it occurred over several days," says Wiepking.

Valley View also established a formal time out protocol before surgical procedures. The circulator nurse starts the time out, going over right procedure, right site, and allergies.

The hospital also went over staffing ratios in the OR with Bergendahl personnel. ■

  

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somehow their culture justifies that," he says. "Hospitals need to learn from their mistakes and discuss them openly."

Bergendahl says the nuclear industry realized that the benefit of reducing the risk of an event outweighed the legal risks.

### Standardizing handoffs

The need to standardize handoffs is paramount.

"Without a standardized, formal handoffs protocol, every individual will [only] do what he or she considers is important [when handing off] to the next shift," says Bergendahl. "Many times we find a piece of critical information was not available because the handoffs did not include it."

When individuals are asked why the information was not included, they reply that they did not think it was significant, he says.

"So you need a formal protocol that requires key information to be included," says Bergendahl. "Any patient reactions that are unusual or unexplained need to be communicated."

During a shift, workers may say that they didn't think something was unusual, even though they should have, so there should be clear guidance about what workers should look for, says Bergendahl.

### Calling for help

A cultural issue that Bergendahl found at one hospital was an unclear message about when to call for help. Calling for help when an employee is not sure of a situation must be encouraged, says Bergendahl. However, in this hospital, the culture was such that when people went home for the weekend, they were to be left alone.

The hospital sent the message that it values people's personal lives, although it wasn't in writing or documented. "From the top down, that was the expectation—value people's personal lives," says Bergendahl.

"That was causing people to have to deal with issues at night and on weekends that were over their heads," he says.

While Bergendahl was at the hospital conducting an assessment, an adverse event occurred.

However, the CEO was away on personal business and staff did not inform him because the expectation was not to call people when they were away.

"We said that's an undesirable cultural attribute and went back and looked at events that could have been prevented by people calling for additional help," says Bergendahl.

"The situation was easily fixed—the CEO quickly clarified the expectation that it's more important to get help than it is to be overly concerned about disturbing someone," he says. ■

*Editor's note: For more information about the Bergendahl Institute, visit* www.bergendahlinstitute.com. *For a story about how one hospital utilized nuclear industry quality improvement protocols, see p. 3.*