

## In This Issue:

- [From the Reporting Program:](#) Situation Awareness
- [Spotlight on Practice:](#) Moving Core Measures to 100%
- [Journal Brief:](#) Are we aware how contaminated our mobile phones with nosocomial pathogens?
- [Heard on the Net:](#) Cell phones in the Hospital
- [In the News:](#) IHI Introduces WIHI
- [From the Commission:](#) Reports Received; Safe Surgery Checklist
- [Upcoming Events](#)

## Our North Star Goal:

*Oregon will have the safest health care system in the country by 2010.*

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## *From the Reporting Program:* **Situation Awareness**

Several times in the past, the Commission has called out hidden issues/root causes in event reports and highlighted how understanding these underlying issues provides the basis for robust action plans. A recent event, reviewed by the TAC, provides another such opportunity, in this case to look beyond the most prominent event — a fall — to other, deeper factors. It can illustrate how the human factors concept of [situation awareness](#) can make the difference between good and bad patient outcomes. Situation awareness comes out of the military and air accident investigation beginning in the mid 1970's. It has recently been applied to medical care, where staff is also called upon to make critical, often fast-paced decisions. (see [M. Endsley](#))

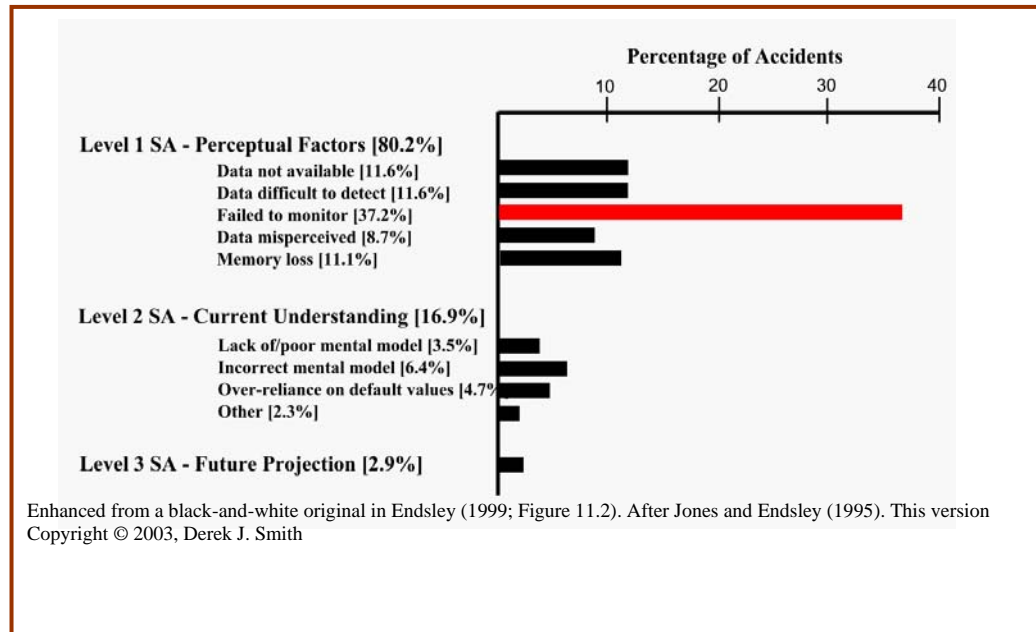
The case is one in which an elderly patient on long-term anticoagulants was admitted for heart problems and fell several days into the hospitalization. (We have altered some of the specifics to better illustrate important learnings.) This, as with many adverse event reports, was a complex case with multiple patient, provider, and system factors and an unfortunate outcome. An evaluation of this patient immediately after the fall, including a cranial CT scan, was negative. Two days later the patient's changing mental status and breathing problems concerned the nursing staff, so they called the RRT ([Rapid Response Team](#)) who discovered fluid on the patient's lungs and treatment was begun. Despite treatment, the patient did not improve and further evaluation revealed a subdural hematoma (a collection of blood on the surface of the brain).

In this case, early recognition of the patient's worsening condition, appropriate decision to call the RRT, assessment, and intervention for the pulmonary edema was not enough. In analysis of this situation and peeling away the layers of complexity, we can see how a basic human characteristic, selective attention, played a key role. A number of factors came together to focus attention on the patient's cardiopulmonary status: medical history of and admission for heart problems, the apparent lack of sequelae from the fall, and the natural focus of the RRT on early intervention to prevent cardiac arrest. Since attention was focused on the patient's cardiopulmonary status, other possibilities initially remained in the background.

[Return to Top](#)

## Situation Awareness cont'd

This case provides an illustration of situation awareness, or a person's understanding of the context within which she or he is acting. There are three levels of situation awareness: 1] perception of critical factors; 2] comprehension of the interrelationship and meaning of those factors; and 3] understanding what impact these have now and in the near future. As applied here, situation awareness would have required information about the earlier fall and anticoagulants to be seen as critical factors and either relayed to the RRT or elicited by them.



Downloaded 4/19 from: <http://www.smithsrisca.demon.co.uk/situational-awareness.html>

The significance of situation awareness is seen in the graph above, which shows data from US air accidents. Failures in perception account for 80% of accidents; 37% of perceptive failures occur when information is available, but not attended to for some reason, such as distractions, stress, poor teamwork, or workload. In this case, the information on the fall was in the background as attention focused on cardiopulmonary problems. According to Mica Endsley, "*Because the supply of attention is limited, more attention to some information may mean a loss of SA on other elements. The resulting lack of SA can result in poor decisions leading to human error.*" (Endsley, 1999, pp260-261 cited in [Situation\(al\) Awareness \(SA\) in Effective Command and Control](#))

Implications of Situation Awareness for patient safety are twofold; first, ongoing education for all health care personnel of the limits of human performance. Second, because that message is hard to hear (how many of us drive and talk on the cell phone at the same time?), back up in terms of system-level structures and memory aids to accurately focus attention. Here, some things to consider might be

- adding a brief Review of Systems to the B in SBAR reports to the RRT
- revising RRT policies to include consideration of metabolic and/or neurological assessments under specified circumstances
- including second CT scan if initial one is negative for all patients on anticoagulants who fall
- developing a overall risk assessment for patients which proactively identifies a range of potential risks (e.g. medications, home equipment at bedside, difficult communication, falls)

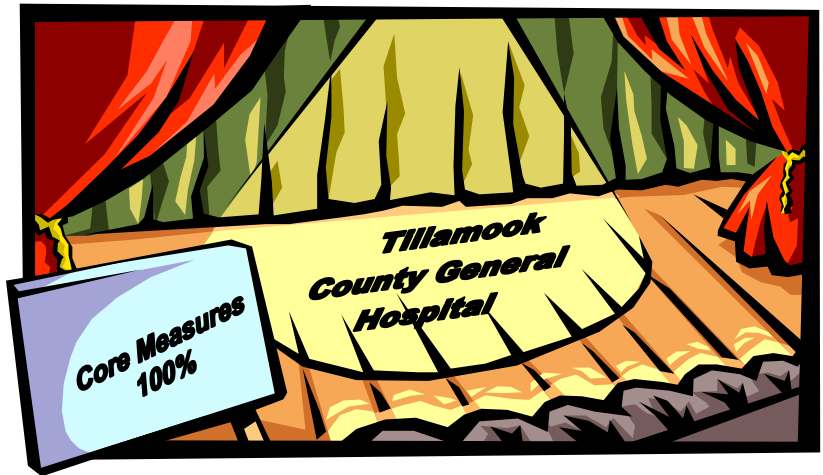
[Return to Top](#)

## *Spotlight on Practice:*

### Moving Core Measures to 100%

Tillamook County General Hospital, part of Adventist Health, is rapidly moving its Core Measures to 100%. According to Gina Seufert, Quality Resource Director, the journey has not been without its challenges, and after some bumps, she believes Tillamook has arrived at a stable and effective process.

There are three important aspects to the Tillamook approach:



1. There is an identified "owner" for core measures and a process in place, even with unexpected absences. At Tillamook, the Case Managers assure that core measure activities and goals are accomplished. They have developed a tracking tool; the process provides that the Nursing Supervisor will close the loop when the Case Manager is not there. As part of the process, the case manager communicates the standards to nursing staff and physicians, and is present with handoffs between hospitalists, assuring important core measure issues are part of the discussion.
2. There are easy to use prompts and reminders. Brightly colored card stock paper for each condition is at the front of patients' charts. For example, Red cardstock might say "Hi! I'm an AMI Core Measure" and then list the actions that need to be completed. Physicians are also given pocket-sized pocket cards as prompts. For example, one card might have the condition and then the recommended antibiotics to use for patients having surgery. At each nursing and physician area, there is a larger reference for the Core Measures. In addition, Tillamook physicians have developed standard order sets. While these prompts and reminders have been very helpful in meeting the core measure standards, maintaining the accuracy of the information is essential. Each one has an expiration date and is reviewed regularly and updated as needed.
3. Data are collected and shared monthly, in "real-time" so that at any given time, the data is only two weeks behind. With concurrent review, it is possible to ask, for example, nursing staff about low pneumonia immunization rates and possible ways to improve while the issue is current, rather than at the end of a quarter. Any problems can be quickly identified and remedied, many times before the end of the next collection period. Physicians and nursing staff can see the data, so that they know how they are doing in moving to 100%. One improvement Tillamook nursing staff is looking forward to is the addition of prompts in the electronic Nursing Care Plan so that nothing is missed during particularly hectic times.

Tillamook's development of this process involved multiple tries and is a good example of "small steps of change." For other hospitals implementing this process, each of the three pieces of the process will look somewhat different, simply because of differences in the organizations. In laying out a plan for putting the process in place, think small and easy to start with. Select a part of the process that is relatively straightforward (such as trying out card stock prompts on charts); try it out with a staff/shift/unit that is open to change; get feedback and make modifications; spread to others; get more feedback and modifications and continue until it is ready to go house wide. Use the same strategy for the pocket cards, and other similar parts of the process. You can do small trials of the different parts at the same time you are working out larger issues, such as who will "own" the process in your organization.

The process that Tillamook developed has helped them reach 100% for several of the core measures and Ms Seufert believes 100% in all of the measures is within reach. She is happy to share her tools, so please feel free to contact her for further information and examples by emailing [Gina Seufert](#).



## **Journal Brief:** Are we aware how contaminated our mobile phones with nosocomial pathogens?

To the seemingly never-ending list of items that have one or more pathogenic microorganisms, we can now add cell phones. Not really a surprise when you think about it (and cell phones come with other concerns – see below). This article from investigators at Ondokuz Mayıs University in Turkey reports results of culturing the mobile phones and hands of staff in an operating room and ICU.

Ulger, F., Esen, S., Dilek, A., Yanik, K., Gunaydin, M., and Leblebicioglu, H. (2009) [Are we aware how contaminated our mobile phones with nosocomial pathogens?](#) *Annals of Clinical Microbiology and Antimicrobials*, 8:7 doi:10.1186/1476-0711-8-7

### Abstract:

**Background** The objective of this study was to determine the contamination rate of the healthcare workers' (HCWs) mobile phones and hands in operating room and ICU. Microorganisms from HCWs' hands could be transferred to the surfaces of the mobile phones during their use.

**Methods** 200 HCWs were screened; samples from the hands of 200 participants and 200 mobile phones were cultured.

**Results** In total, 94.5% of phones demonstrated evidence of bacterial contamination with different types of bacteria. The gram-negative strains were isolated from mobile phones of 31.3% and the ceftazidime resistant strains from the hands were 39.5%. *S. aureus* strains isolated from mobile phones of 52% and those strains isolated from hands of 37.7% were methicillin resistant. Distributions of the isolated microorganisms from mobile phones were similar to hands isolates. Some mobile phones were contaminated with nosocomial important pathogens.

**Conclusion** These results showed that HCWs' hands and their mobile phones were contaminated with various types of microorganisms. Mobile phones used by HCWs in daily practice may be a source of nosocomial infections in hospitals.

### **In the News:** from IHI —

The Institute for Healthcare improvement (IHI) is pleased to introduce [WIHI](#), a free audio program designed to help you to stay on the cutting edge of health care improvement. Through 60-minute audio/web broadcasts scheduled every other week, your host, Madge Kaplan, will speak with expert guests on the latest thinking and strategies for improving patient care. We invite you to listen in and/or participate in the discussion.

Please join us for the first WIHI program:

Time: Thursday, May 7, from 2:00 - 3:00 PM Eastern Time

Topic: Breaking the Cycle of Readmissions

Guests: Amy Boutwell, MD, IHI's primary investigator for a multi-state initiative to reduce avoidable rehospitalizations

Uwe Reinhardt, PhD, noted health care economist and Professor of Political Economy at Princeton University

For more information and to enroll for the May 7 program, please go to:

<http://www.ihl.org/IHI/Programs/AudioAndWebPrograms/WIHI.htm>



[Return to Top](#)



## Heard on the Net: Cell phones in the Hospital

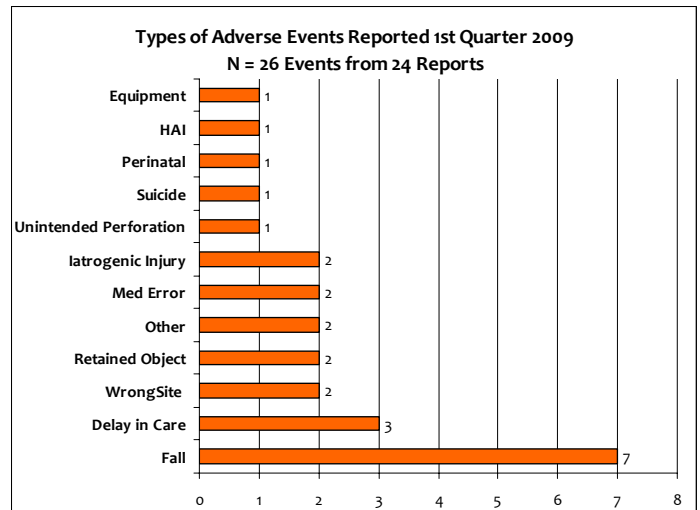
Early on, hospital policy banned cell phones because of the risk of interference with sensitive equipment. That policy is often ignored as cell phone use has become ubiquitous. A study at the Mayo Clinic (Tri, J L, Severson, R P, Hyberger, L K, and Hayes, D L (2007) Use of cellular telephones in the hospital environment [Mayo Clin Proc. 82\(3\):282-285](#)) showed "...that when cellular telephones are used in a normal way no noticeable interference or interactions occurred with the medical devices." Dutch researchers, however, came to a different conclusion in their study, recommending a 1 meter distance between cell phones and medical equipment. van Lieshout EJ, van der Veer SN, Hensbroek R, Korevaar JC, Vroom MB, Schultz MJ (2007) Interference by new-generation mobile phones on critical care medical equipment. [Critical Care 11:R98](#))

Recently, other issues regarding cell phone use have also arisen; such as staff use in patient care areas, cost to patients of having to use hospital-provided phones, and privacy. In some hospitals, staff use mobile phones to talk with one another, so it is difficult to explain to patients why they cannot use theirs. Personal cell phone use by staff poses other problems; it looks unprofessional and raises real patient safety risks. At the Commission, we have received a retained object report caused, in part, by distracted health care personnel receiving a personal call. The newer cell phones with cameras have introduced an additional risk, to privacy. The LA Times reported last year that the Resnick Neuropsychiatric Hospital at UCLA has banned all cell phones and laptop computers after a patient posted a group photo of other patients, apparently with their permissions, on the web. They also reported that Rady Children's Hospital in San Diego has taken similar steps when photos of children were found on the cell phone and computer of a staff member.

## From the Commission

**Reports Received** — The Commission received six reports of seven adverse events in March from five hospitals. Four of the events were falls; the others were wrong-site local anesthesia, pneumothorax, and spinal cord injury. Only one event contributed to death, and two of the events were Less Serious. For the quarter, 14 hospitals have reported adverse events to the Commission. See the graph for the types of events.

Over the 1st quarter 2009, hospital submitted 24 reports and 26 adverse events were identified.



**Safe Surgery Checklist** — At its last meeting, Commissioner Bruce Johnson, an Ear, Nose, & Throat surgeon reported a positive response to the checklist among his colleagues at the River Road Surgery Center in Salem. They are evaluating how the checklist might be modified to meet needs in ambulatory surgery. [Amy Gryzniec](#), Field Coordinator for Ambulatory Surgery Centers is working with OASA (Oregon Ambulatory Surgery Center Association) to explore how the checklist might be helpful in ambulatory surgery. While the checklist was designed for *and has supporting evidence only for use in inpatient surgeries*, this is a positive step toward high reliability healthcare in Oregon.

The Portland AORN chapter has developed a consensus among Portland metro area hospitals on seven elements of the Universal Protocol and is now beginning work on integrating the Oregon-modified checklist to the Universal protocol. For more information, contact [Trudy Kenyon](#), P-AORN task force chair or [Leslie Ray](#) at the Commission.



## Upcoming Events

### Commission Meeting

June 9<sup>th</sup> from 12:30 to 3:30pm at the [Wilsonville Training Center of Clackamas Community College](#) To request an agenda, please contact [Linda Goertz](#). All 2009 Commission meetings are on the second Tuesday of even-numbered months. Click [here](#) for a listing of meeting dates.

### Nursing Leadership Congress Webinar Series [Information and Strategies for Present on Admission](#)

Thursday, May 14, 2009 Time: 1:00 PM - 2:00 PM ET Sponsored by McKesson

Washington Patient Safety Coalition [2009 Northwest Patient Safety Conference](#) Thursday, June 4, 2009, at the Hilton Seattle Airport & Conference Center. Keynote Speaker: Dr Robert Wachter. All attendees who [register](#) by April 3, 2009, will receive a \$50 discount off the registration price.

Institute for Healthcare Improvement [Hospital to Home: Optimizing the Transition](#) June 15-16, 2009; Orlando, FL.

[Return to Top](#)

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