

**THE JOINT COMMISSION TELECONFERENCE  
SAFELY IMPLEMENTING HEALTH INFORMATION  
AND CONVERGING TECHNOLOGIES  
DECEMBER 11, 2008**

**CATHY BARRY-IPEMA:** Welcome to The Joint Commission's news conference to announce the release of a *Sentinel Event Alert* on safely implementing health information and converging technologies. Health care safety experts have joined us today to talk about why health information and technology requires special attention and the steps that health care organizations can take to reduce mistakes related to technology.

Dr. Mark Chassin, president of The Joint Commission, and Dr. Peter Angood, vice president and chief patient safety officer at The Joint Commission, will offer brief remarks. They are joined by Ronni Soloman, executive vice president and general counsel of ECRI Institute. Then they will answer your questions.

But before we get started, I want to remind you that a complete press kit that includes the *Sentinel Event Alert*, biographies for all of our speakers and other related information is available on The Joint Commission Web site at [www.jointcommission.org](http://www.jointcommission.org).

I would now like to introduce Dr. Mark Chassin.

**DR. MARK CHASSIN:** Thank you, Cathy. Good day and thank you all for joining us. As you well know, despite the best efforts of many people, The Joint Commission and health care organizations, quality and safety problems still plague health care today. Many, both inside and outside of health care, have been waiting for technology to come to the rescue. Many expect technology to cure quite easily all of the safety and quality problems that ail our system; for example, cabinets that automatically dispense the right medications at the right doses; computerized decision support systems that help doctors prescribe the right medications, review information about their patients, identify allergies or drug interactions;

bar coding to correctly identify patients and treatment products; electronic medical records to allow caregivers to share information in a more seamless way to make good treatment decisions.

Clearly, technologies like these and others can be powerful agents of improvement in health care, but we have to recognize that health care can't do what many other industries have done in order to get to higher levels of safety and quality and that is to perfect a process and then automate it from start to finish, completely eliminating people from that process. So when was the last time your bank made a mistake on an ATM transaction?

Today's *Sentinel Event Alert* reminds us that individuals, people, patients, pharmacists, doctors, nurses, data entry clerks and information technology staff are still at the heart of everything that occurs in health care. We can't take people out of the provision of health care and replace them completely with automated processes. We need to use technology and other information tools to make health care better, but we have to be mindful of the safety risks and preventable errors that technology can create or perpetuate. We know that computerization and automation have been contributing factors to medication errors, to take one example.

If we think about all how all of us use technology in our daily lives, we encounter problems with it. We lose computer files because of a software problem, because we're distracted or we're trying to use a new gadget that's supposed to make life easier, but it isn't so easy to use and instead it becomes counterproductive every time we try to use it. Those same problems can occur in health care as health care tries to use technology. Health care providers and leaders must carefully consider the impact technology can have on care processes, on work flow, safety and team work. Patient safety can be jeopardized when technology is not carefully planned, integrated and fixed or updated. Most importantly, a

process has to be very carefully examined and almost perfected before one attempts to turn a computer on to automate it.

Computers, as someone once said, computers don't make us less stupid; they make us stupid faster and if we don't understand that, we can get errors and problems to patients much more quickly. Previous *Sentinel Event Alerts* from The Joint Commission have addressed problems related to infusion pumps, ventilators, patient controlled analgesia, tubing misconnections, and MRI's, but this *Alert* is really a call to look beyond a specific device or technology and address this complicated issue as a whole.

Now let me turn the call over to Dr. Peter Angood, who will talk briefly about the actions The Joint Commission recommends in order to safely implement health information and converging technologies.

**DR. PETER ANGOOD:** Thanks, Dr. Chassin. Very well described and, clearly, the management of medical information and the processes of health care with these continually evolving and converging technologies is a significant element for every health care organization and institution. The role of technologies in health care will inevitably continue to grow and influence how we provide care in the coming years. While health care as an industry is conservative and, at times, perceived to be slower with adopting technologies, it remains highly important that we take action to help prevent patient harm related to the implementation and use of health information technology and these converging technologies.

Health care organizations should critically review the 13 steps contained in this *Alert* and should examine their own environments and their own particular situations. It starts with creating and utilizing policies and procedures for which specific individuals are authorized and responsible for overseeing technology strategy, evaluating and implementing

technology, providing education about technology and keeping a focus on safety as it relates to technology. This sounds basic but it is fundamental to creating the foundation for safety as it relates to technology.

When considering the possible use for a technology, organizations should first look critically how at people are already doing their work and assess for their inefficiencies and the risk points in the organization's processes. These issues and the questions raised must be addressed before the technology is actually put into place; in other words, identify what the problems are and don't be naïve about thinking technology will solve the problems. This is essentially a risk assessment strategy for technology, and we use it in other elements of care as well, but it's essential for technology implementation and overviews.

It's also important to get input from the caregivers, the staff and even patients so that their issues are identified and addressed. The information technology, the so-called IT staff who have a clinical experience and background should be a part of these processes in evaluating how things are actually done and how they can offer advice for where the technology does or does not offer improvements. By involving these groups, you get their expertise in how the organization delivers care and you're not just relying on the promises of any particular vendor who may not actually completely understand your organization's issues. Training, education, and not just one course when the technology's getting ready to put into place, is crucial in improving the safety and quality. There needs to be ongoing education in these processes. In addition, there are a number of specific actions recommended to monitor and report errors or near-misses related to technology and that everyone, every organization, should be diligent about evaluating the causes for these near-misses and errors.

In addition to The Joint Commission's standards mentioned in the *Alert*, there are several other strategies mentioned and we'll be happy to talk to... about those in more detail

and to answer specific questions. But I think the important thing in the take-away from this *Alert* is that we can and should continue to seek new ways that technology can better improve patient outcomes, patient safety but always remembering that the human factors and the interface of the human with technology are an important part of health care, and we need to make that as safe as possible. I hope that you and health care organizations and caregivers will use this *Alert* to provide a highlighted focus on this important issue.

And now, Ronni Soloman from the ECRI Institute will offer some comments.

**RONNI SOLOMAN:** Thank you, Dr. Angood and Dr. Chassin. I appreciate your asking me to be here today. Just a couple of words about ECRI Institute, in case you don't know who we are. We're an independent, non-profit agency, and we have very deep roots in patient safety and in health care technology. We originally got started 40 years ago, after our founding president, who was then a medical intern, watched a four-year-old die in the emergency room because the defibrillator didn't work. And that failure sparked an incredible amount of anger and also the will to make health care safer by improving technology. So we began to test and evaluate medical products and our very first evaluation involved resuscitators. We found that half the models we tested were ineffective and unsafe – that was back in 1971 – and as a result, those models were taken off the market.

So now some 40 years later, we still perform those independent evaluations, and we also run numerous programs that focus more broadly on safety, on quality, on risk management in reporting, in assessment, alerting, learning and a lot of publications. In October of this year, we published a guidance document called "Coping with Convergence" in our *Journal on Health Devices*. We looked at ways to improve safety in a hospital environment where medical devices have become more software based, more computer dependent and more networked. As somebody once said, to err is human, but to really foul

things up you need a computer and that's exactly what our guidance article and this *Sentinel Event Alert* are trying to prevent.

So medical devices and IT systems have become incredibly intertwined and this interrelationship is what we call converging technology or simply convergence and, of course, convergence is happening outside of health care. When you think about telephones; I remember when I was 12 years old, I was tickled pink to have my first pink princess phone. It was pretty dull in hindsight. It was a dial phone; didn't even have buttons. Now I've got an iPhone and it automatically connects with wireless networks, it has GPS technology and exchanges all sorts of data. So talk about convergence, it's happening all over, not just in health care.

And it's the same with medical devices. So take, for example, radiology equipment which is really one of the early convergers. Images were traditionally developed on film and then those films had to be physically walked from the radiology department to the specialist or to the surgeon for viewing. But the newer equipment is really much different. It produces digital images that are communicated via a networked system automatically to all sorts of locations, both inside the hospital, like to the OR, or outside the hospital to a doctor's office. So this is a tremendous boon to efficiency and there are really so many other examples: smart pumps, lab information systems, virtual ICU's, the list goes on and on. But, unlike telephones, medical information exchanged within these systems is life critical and that means that we have to pay the highest attention to patient safety risks. And the *Sentinel Event Alert* highlights several problems and offers advice for making systems change and safe.

Now if we look at converging technologies, I've also seen a culture change. Think about the expectations we have today. We want our e-mail at any time from any location. Well clinicians want the same thing, the ability to access patient information from any

location. As Dr. Chassin mentioned, we've all experienced problems with our own home computers. We've called the technical support line, we've been put on hold, we've listened and listened and listened to the music that gets played and cringed after hearing for the umpteenth time what a valued customer we are.

But in the medical setting, that's not acceptable. The implications of a help desk for health information technology take on a whole new meaning. It's a matter of patient safety. Calls need to be responded to within a matter of minutes, depending on how critical the situation is, and this capacity is especially critical during the early phase of technology implementation. The *Sentinel Event Alert* speaks about implementing what they call an emergent desk, issues desk which is staffed with experts who can rapidly resolve problems. It's a terrific recommendation.

What about the quality and the fidelity of the data that's being transferred over an IT network from one device to another? Well no one wants a portion of their own ECG waveform getting lost during transmission or their vital signs getting corrupted. The *Sentinel Event Alert* points out the need for monitoring and reporting of internally discovered problems and near misses. It's key to centralize those and get a handle on them.

But it's equally important to stay aware of hazards and recalls. For example, at ECRI, we recently published an alert on a software problem associated with a radiology archiving and a communications system and that problem created a serious potential for dangerous misdiagnosis. So really just like cribs and car seats, a good alerting program is essential for technology. As both Dr. Angood and Dr. Chassin mentioned, a systems approach to planning and design and implementation is absolutely key. It's so important to involve the clinicians who will ultimately be using that technology and these might cut across a lot of specialty areas. So being pro-active is really so important from a risk management perspective. I remember once upon a time when I couldn't open a Word document on my

Apple computer. Well, incompatible systems might be frustrating if you're late for your term paper, but it could be life threatening in the medical setting.

So to sum up, the *Sentinel Event Alert* provides a lot of good information, a lot of best practices for planning, for implementing and for the ongoing managing of health IT and converging devices. And, in fact, most of the action recommendations are applicable, not just to the hospital setting, but across health care settings, emergency care, acute care, on through the entire continuum of care.

All right, thank you.

**QUESTION:** I assume your audience for this information is hospitals and hospital staff, doctors, nurses, administrators but what is the message here for the makers of medical devices, the manufacturers and designers?

**DR. MARK CHASSIN:** I think, to your first comment, since these technology innovations and improvements are in use throughout the health care system to a greater or lesser degree, the message is really intended for any component of the health care delivery system that is employing one of these automated information or converging technologies. For the makers, I think that it's important that they, as they are providing, servicing and helping organizations implement their technologies, that they need to take the lead in helping the organization plan, test and implement the application in a safe way.

We certainly have seen too many examples of applications that were simply dumped into a delivery system setting without adequate planning, without taking into account, for example, what previous safety steps are being eliminated or bypassed in the use of the technology without replacing them with equally effective safety checks. So I think that the makers need to understand these risks just as thoroughly, if not more thoroughly,

particularly the ones that pertain to their own devices and software. They need to understand them and teach their customers about them just as the customers need to learn about what they are and guard against those errors when they implement them.

**QUESTION:** Can you give a specific example of dumping a new application without any analysis of any safety measures that might be circumvented, et cetera?

**DR. MARK CHASSIN:** Right. Well we know, for example – I'm not going to name a specific product or organization in the implementation of computer order entry systems in which an order for a medication or a test, a lab test, a radiology test was put in without adequate understanding that in the handwritten era, a handwritten physician order was observed by many, many individuals before the order actually got translated into a drug that was delivered to a patient, or a test that was actually delivered. And, in addition to trying to translate the handwriting, those eyes on the part of the ward clerk, the nurse, the pharmacist also looked at whether the medication was appropriate, whether it conflicted with other medications, whether the dose was right, and a lot of feedback occurred to physicians that corrected errors before they got to patients.

Implementing a computer order entry system that takes out those checks in the medication ordering and dispensing process without replacing them with equally effective checks is one example of this problem.

**DR. PETER ANGOOD:** I will just add on a couple of comments to what Dr. Chassin has just described. In vendor responsibilities, I think there are two other components that need to be highlighted, and one is that, as a vendor, the different companies really need to make a very strong effort to understand the processes of clinical care, both generally as well as

specifically in any one organization that they're interacting with. And then related to what was being described is also an important need for them to be honest when they know their applications or their technologies will not do well for that organization and not just to offer rhetorical promises of, we've got a new version of software coming out next month, et cetera, et cetera. There needs to be an honesty about knowing when to back off or when to be able to offer alternatives, which may or may not even be a competitor, so that the organization winds up with the safest set of technology in practice.

**QUESTION:** Again, could you give an example of when a technology might not be appropriate for an organization?

**DR. PETER ANGOOD:** Well I think you can get it right into electronic medical records, the overlap with the CPOE systems, the overlap with some of the monitoring systems. Notoriously, monitors in the emergency department do not relate to monitors in the ICU, do not relate to monitors in the operating room and those different areas wind up with different technology purchases.

**QUESTION:** Good afternoon. Can you all estimate the added manpower or cost of implementing some of these suggested actions?

**DR. PETER ANGOOD:** I think that's difficult to quantify because of the diversity of organizational structures and staffing allotments within any one organization. Clearly, a majority of organizations are moving towards having a chief information officer and supporting staff in an IT department and, in order to fully implement these different

suggestions and recommendations, it's just a bit too difficult to quantify and give numbers per se but, it's an important principle to be followed here.

**QUESTION:** Do you have an estimate of how many hospitals currently are completely health and technology savvy?

**DR. PETER ANGOOD:** Again, we don't have strong statistics. We do know that the implementation and adoption of electronic health records is only on the order of 10 to 12 percent. The use of CPOE is a little bit higher and I think you can extrapolate from those types of numbers that, for us to be able to say institution or organization X would be "information savvy," it's a relatively few number.

Ronni, do you have any other perspectives on that?

**RONNI SOLOMAN:** Yes, I've seen similar numbers. I know that HIMSS, which is the Healthcare Information and Management Systems Society, has done some surveying and according to second quarter information from this year, they say that approximately 97 percent of U.S. hospitals are in what they call stage three or below. So that wouldn't include more advanced applications.

**QUESTION:** So that's obviously our audience's pharmacists and I know that there's been a lot of frustration that pharmacy isn't always in the loop of the development of these processes.

**RONNI SOLOMAN:** I think that's one of the very messages that the *Sentinel Event Alert* is trying to get out, that it's so key when you're making a capital purchase or a device

purchase that may not only be expensive up front but, over the total life cycle cost, is extraordinary; that it is just key that approval is needed and buy-in and commitment is needed from all of the affected departments, including pharmacy.

**QUESTION:** Right, and also another problem is this workaround, correct? Where somebody may implement...like especially with the bar coding of the patient, sometimes people go around the bar coding process.

**DR. MARK CHASSIN:** The workaround is a symptom of a badly planned technology implementation. The way I would amplify the previous comments with respect to the cost of doing it right, the cost of doing it right has to be a part of the cost of the implementation of the technology because getting it wrong will be much more expensive in the long run and even in the short run, which could lead to a complete abandonment of an implementation with costs that are just simply lost. So I think that the careful planning following the principles in this *Alert* really needs to be considered as part of the implementation of the technology. It's not just buying the device; it's all the training and planning and support that goes along with it that is the full cost of doing the implementation safely.

**QUESTION:** Do you consider these technologies cost effective in the sense that they are going to reduce potential patient adverse events?

**DR. MARK CHASSIN:** Well, that's really a question for each individual technology, and we've addressed a number of them in previous *Alerts*. This one really focuses on the process of safely implementing a whole host of different kinds of information and converging technology so you need to ask that question about each individual application.

**CATHY BARRY-IPEMA:** If there are no further questions, I would like to thank everyone for participating today. If you have additional questions that arise as you're working on your stories, please feel free to give Ken Powers, the media relations manager at The Joint Commission, a call at 630-792-5175. Thank you.