I've been thinking...

"What to make of the BCMA workarounds study"
July 2008

I've been thinking about thirty-one, body mass index, automobile restraints, and how hospitals should *not* do bar coding at the point of care.

I dropped by Baskin Robbins the other day. It had been a while, and I had forgotten how much I enjoy nutty coconut. Nearly half my life ago, some neighbors celebrated my thirty-first birthday with a big bowl of thirty-one scoops of all thirty-one flavors—some more enticing than others. Chocolate chip disappeared well ahead of pink bubble gum. Coincidentally, since 1979, I've packed thirty-one—a pound a year.

Speaking of fat, according to a research study from Vanderbilt University, just under 31 percent of individuals with a body mass index that qualified them as overweight reported not using automobile seat belts, compared to approximately 20 percent of the average population. While I buckled up on my drive home from Baskin Robbins, I need no more research to admit I must lose some weight.

So, what about that University of Pennsylvania School of Medicine's study on bar-coded medication administration (BCMA) systems? It was published in the July/August issue of the *Journal of the American Medical Informatics Association* (JAMIA) and is entitled Workarounds to Barcode Medication Administration Systems: Their Occurrences, Causes, and Threats to Patient Safety.

I commend Dr. Ross Koppel and his colleagues for doing their homework! With a thorough approach, the team identified fifteen types of workarounds, including things like affixing surrogate patient-ID bar codes to computer carts and doorjambs. The researchers observed clinicians overriding BCMA alerts for 4.2 percent of patients charted and for 10.3 percent of medications charted. Along the way, they uncovered thirty-one types of causes for workarounds, along with possible harmful consequences associated with each. These included problems, such as missing or unreadable bar codes on medications and patients, malfunctioning scanners, RFID-network breakdowns, dead batteries, and emergencies, etc.

My communication arteries have been clogged with calls and e-mails providing links to blogs, Listservs, e-papers, and articles commenting on the study. A few of these have included overstatements about workarounds and understatements about BCMA's value. For example, the *Philadelphia Inquirer*

ran an article on July 1, 2008, entitled “Bar codes no cure for drug errors.” I appreciated the letter to the editor from one hospital CEO who wrote, “The article on bar-coding gives the impression that new technologies make no difference in reducing hospital errors.” He went on to say, “In 2004, we were among the first health systems to institute a medication administration bar-coding system. Since then, Our Lady of Lourdes Medical Center has reduced the number of reported medication errors by almost 40 percent. Additionally, more than 7,000 medication errors have been prevented across our system by notifying the nurse before the wrong medication was given.”

Someone suggested the study is enough reason to not move ahead with bar coding. Yet, while the Penn study reveals how hospitals should not do bar coding, Koppel never suggests that hospitals should not do bar coding. Actually, he told the *Inquirer* that every day BCMAs save lives and stop errors and that their published study documents thousands of medication errors avoided via these systems.

To lean on the UP study to argue against BCMA would be as foolish as dragging out the Vanderbuilt study to argue against equipping cars with seat belts or not requiring that they be worn.

Seat belts and BCMA have a few noteworthy things in common. While both save lives, each can and should be improved, neither is a stranger to workarounds, and both must be properly utilized.

Continuous Improvement

Thank God my Audi doesn’t have my father’s seat-belts. Our three-point belts are a significant improvement over those two-point lap belts we had in the 1970s. Today’s emergency-locking retractors are not only more comfortable but also safer than previous versions, and car manufacturers are improving restraint technology year by year.

The Penn study helpfully identifies problems with today’s BCMA technologies that vendors must address if we are committed to safer points of care tomorrow. Pausing CQI is an oxymoron we must avoid. Vendors should study this paper and keep busy.

Compliance

Over the years television jingles like “Buckle up for safety” and slogans like “The life you save may be your own,” coupled with Pavlovian chimes, have helped to promote compliance. Force-function technologies triggering warning lights and buzzers when belts aren’t fastened have helped. And ticket-or-click-it legislation and watchful cops have convinced most Americans.

Yet, 21 percent of us are still working around seat restraints. Workaround’s

include fastening seat belts before sitting down—tricking the sensors into believing they are buckled up when they aren't. Others involve snipping wires—deactivating their warning mechanisms. Type "deactivate seat belt" in a Google search window, and you will get no less than six how-to pages. Then there are those who simply endure the annoying alerts. Apparently, they are called "idiot lights" for a reason.

As noted earlier, the Penn study identifies numerous workarounds, some as ridiculous as the seat-belt violations just mentioned. The big difference is that the life we endanger at the bedside is not our own.

Several months ago, I wrote on workarounds in this column, noting that one university hospital, utilizing observational methods, discovered that before bar coding, nurses were failing to read patient wristbands 80 percent of the time. After BCMA they got it down to 5 percent. Good enough?

Here in Washington state, perhaps because click-it-or-ticket fines run $101, we have achieved a 95 percent compliance rate. To our credit, while reinforcing the compliance of the majority, we are zeroing in on zeroing out the noncompliance of the final 5 percent—a great example for hospitals tackling BCMA.

To my disappointment, a few folks who are actually doing a pretty good job with BCMA appear to have taken offense from the study—seemingly more defensive than eager to learn how they can do it better.

"Many vendors and their supporters mistakenly believe I'm some sort of Luddite," Dr. Koppel told the *Philadelphia Inquirer*. "That's the exact opposite of my position. I view these technologies as vital; that's why we must make them work to help clinicians and patients. Right now, the vendors and true believers focus on marketing HIT, and attack any criticisms as anti-technology. That's the worst way to improve these essential tools."

Most people I've talked to are grateful for Koppel's work and will use it to hone their bar- coding skills. After all, that's why they adopted bar coding in the first place—to keep improving their medication-use process and zero out the overrides and workarounds.

What to make of the report? Make use of it, that's what. If you are serious about BCMA, and I hope you are, then download, disseminate, and devour this report.

Also, mark your calendar for The unSUMMIT on Bedside Barcoding, which will be held in Tampa, May 6-8. 2009. You will find that both provide argument and assistance for doing bar coding the right way.

In the interest of good health, let's lose a few, buckle up, and continue improving on how we do BCMA.

My weight aside, what do you think?

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