Patient safety 2007

September 2007

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In 2005, acutecaretesting.org interviewed Dr Michael Astion, an active spokesperson for patient safety and reduction of lab errors, on the main issues surrounding the topic. Since then, a lot has changed… or has it? In a follow-up interview with Astion, acutecaretesting.org gauges the status of patient safety year 2007 – how far have we come and what is yet to be accomplished?

acutecaretesting.org: What has happened in the last 2 years in terms of reducing medical errors and increasing patient safety?

Michael Astion: There has been a broader implementation of automation at all levels in the lab – on a smaller scale, like analyzer consolidation, as well as on a larger one with labs adopting a total lab automation model or at least creating very automated core laboratories.

We are still talking about a minority of laboratories, but there has been an increase and I believe most modern laboratories are on their way to becoming more automated. So that has been a big positive. Then there has been the adoption of technology throughout the testing process – not only in the analytical process.

Things like barcode-based, semi-automated patient identification and specimen collection.

Or for big reference labs, things like Global Positioning devices, barcode-based tracking of specimens… all of these things, although different in magnitude, have contributed to improvements in particular parts of the lab process. Another positive is that Lean has become more popular. I believe Lean has been helpful to move people towards reducing error-prone steps and reducing waste in labs.

acutecaretesting.org: In your presentation at the 2007 American Association of Clinical Chemistry (AACC) Annual Meeting in San Diego, you talked about a bit of redundancy being good for patient safety. Why?

Michael Astion: Even though I like Lean, you can be too Lean. Take drinking milk out of a carton: that is purely Lean. There is really no down side to it from an error-reduction or waste point of view. But who wants to do that? That's uncivilized, right?

So my point is that a little bit of redundancy is necessary so that when emergencies or new issues arise, as they inevitably will, an organization has the resources to deal with these issues. Organizations have a lot of goals, including patient safety, patient satisfaction, employee safety, employee satisfaction, fiscal health and goodwill in the community. These goals are sometimes in harmony, but many times they compete.

What you are trying to do is achieve a workable balance. This means striking the right balance between efficiency and flexibility.

acutecaretesting.org: Are hospitals still focusing on weaker interventions, like training and competency, or do you see a clear shift towards stronger interventions?

Michael Astion: I see a shift. I would not call it a strong shift, like an explosion, but something spreading more like a grease spot. But you know what, that is how ideas are. Weak interventions - like training, warning labels, the call to be more careful and memos - will always have the advantage of being easier to implement.

They may not make the problem go away, but they make us feel better. But slowly this is changing.

The in vitro diagnostics industry has helped labs a lot, because they are always trying to automate processes, and increased automation has helped decrease manual steps and the errors associated with them, while increasing productivity.

I think technology always moves us in that direction when it is done correctly. But it takes time. So it's important to keep repeating the message and hopefully inspire more people to do stronger interventions. Even though I'm faced with the irony that education is a weak intervention (laughs) and education is useless to combat the most common kind of laboratory error, which is the non-cognitive error!

acutecaretesting.org: Are there other patient safety areas in which we are not progressing as fast as we should?

Michael Astion: Lab utilization has become a huge patient-safety issue, even though it is commonly seen as a financial issue. There are many tests out there that do not need to be ordered. When these tests are ordered, they give a lot of false positives, especially if people have a low pretest probability of disease.

And false positives can be dangerous in many ways, as they may send patients on an unnecessary and potentially risky medical adventure. Rick Deyo, who is a professor at the University of Washington, has talked about what he calls the cascade effect of too much medical technology.

For example, you run the risk of having an adverse reaction to something like the contrast used in a CAT scan or getting an infected biopsy site while doing a test which you did not need in the first place.

At the same time, you have overutilization of the lab, making the lab busier than it needs to be for specimens that have no meaning at all. Nowadays, the current recommendations for well-patient testing encompass only a small number of tests like a lipid panel, glucose, fecal occult blood, Pap smears (for women) and HIV (which is controversial).

Earlier we would automatically do whole chemistry panels, Complete Blood Counts, urinalysis on every patient coming in for a well-patient visit. But as it turns out, the benefit of all this testing was less than the cost, so we usually do not do them anymore.

acutecaretesting.org: What about laboratory quackery?

Michael Astion: The growth of laboratory quackery

is another big issue. There are two types to quackery: one is practiced by the unscrupulous, who push useless quack tests and the tests almost always come back positive.

The majority of accredited laboratories in our field do not participate in this type of quackery, but it is widespread especially through small internet-based companies. The more predominant form of quackery is practiced by what I call *"true believers"*.

These are people who believe that asymptomatic or vaguely symptomatic people need a huge number of laboratory tests. I view it as a subtle form of quackery when we push tests that patients do not need, especially enormous well-patient testing panels.

For example, there is no reason for asymptomatic patients or patients with minor aches or pains to receive extended hormone panels, vitamin analysis and huge panels of autoantibody tests.

Some laboratories are involved in direct-access testing, which offers some advantages, like offering the few tests needed for well-population testing (lipids, etc.) and tests for disease monitoring of common chronic diseases like diabetes.

But direct-access testing has some strong negatives from a patient-safety point of view, when patients order huge amounts of tests that they do not need, and which often produce false positives. Those false positives cause patients unnecessary worry and often send the patients on a dangerous medical adventure.

A colleague of mine refers to that as the *"cascade of waste"* caused by unnecessary testing.

acutecaretesting.org: More and more you hear about patient safety in the post-postanalytical phase, or in other words, not only ensuring the correct test result, but also the correct diagnosis and treatment...

Michael Astion: Yes, you are referring to laboratories helping physicians interpret laboratory results. This is important but it is a difficult intervention to do correctly. You really have to be an expert to be able to provide the kind of guidance physicians need.

There is certainly a fair amount of evidence out there now, for example Dr Michael LaPosata's work in coagulation, that guidance by a laboratory expert can improve patient outcomes.

But, if you take a kind of Jack-of-all-trades clinical chemist or clinical pathologist and have them produce coded comments for the thousands of tests on the menu, patients may actually be less safe.

Overall, what I would say is that laboratory guidance regarding helping physicians interpret test results is a strong intervention, which could have tremendous benefits. But like any strong intervention, it carries high risk… and it is hard work.

acutecaretesting.org: Can you give me an example of a hospital that has successfully completed a total lab automation project?

Michael Astion: Yes, there are many examples out there. One of the best ones is the Ohio State University Hospital, which was one of the first labs to do total automation. All the way, they have been incredibly committed to this project and they now have a tremendous amount of data showing improved productivity and error reduction.

acutecaretesting.org: Due to its nature and magnitude, a total lab automation project dramatically changes the way people work. What kind of impact does a project like this have on staff morale?

Michael Astion: Any strong intervention will change – as it should – the way we work. If the intervention is not well implemented, morale might suffer because people are reluctant to change; it is a natural human tendency.

Therefore, information and communication play a really important role in this process. I have recently interviewed

Dr Michael Bissell, who is Professor of Pathology and Director of Clinical Chemistry and Toxicology at the Ohio University College of Medicine, and one of the drivers behind their total lab automation project.

When talking about maintaining morale during such projects, one of his main points was continuous communication to staff of the improvements associated with the project. Things like using metrics, doing before-and-after scenarios, being as concrete as possible when showing these improvements.

This is important, because it helps remind everyone involved of what they already have achieved and that these changes, when properly implemented, actually bring about positive results. And that in itself can help maintain morale.

acutecaretesting.org: Are people still afraid of losing their jobs when they hear words like *"Lean"* and *"automation"*?

Michael Astion: Less so now, because of the shortage of laboratory workers we face. But still, if your lab automation project is not going to result in job loss, then that should be communicated clearly and quickly. Staff will be more likely to embrace a total lab automation project, if they have job security.

It is important in a project like this to emphasize that automation does not need to take away jobs; it hopefully takes away the work you hate the most. After all, who wants to spend time capping and decapping, loading and unloading, pipetting, etc?

But for these projects to succeed, you have to have staff buy-in. If people have not bought in, they cannot accept these interventions… and they just will not work.

acutecaretesting.org: How much time does it take to implement a total lab automation project?

Michael Astion: We have interviewed a number of laboratory leaders who have implemented laboratory automation. Their experience is that once you find the right vendor, the installation process alone can easily take up to 6 months.

But the period before that, where you have to select the vendor, reconstruct the lab and rethink processes, can take a couple of years.

And that is just to get to what Michael Bissell calls Phase 1, where you have a basic total laboratory automation setup with an automated line consisting of front-end processing, a high-volume chemistry analyzer, an immunoassay analyzer and the refrigerated stockyard for completed specimens.

acutecaretesting.org: Successful strong interventions to reduce errors are time-consuming and require thorough preparation. Are there labs out there that, because they did not do their *"homework"* properly, ended up with a solution that left them worse off than they were when they started out?

Michael Astion: Yes, many. I have visited a lab with an automation line that did not work, another one that had remodeled all of its work based on Lean, but that unfortunately was unable to sustain it in the long term due to lack of employee buy-in and leadership change. But no one likes to talk about this.

There is still a strong bias against publishing real-errors data.

acutecaretesting.org: Would it be the ultimate implementation of just culture if we would reach a point where it was *"ok"* to publish real errors?

Michael Astion: Yes, I guess it would be!

acutecaretesting.org: Speaking of publishing... The Joint Commission has recently published its 2008 National Patient Safety Goals. Is there anything new we should pay special attention to?

Michael Astion: The continued emphasis is on patient/specimen identification and enhanced communication, especially of critical values. I think all laboratories should be digging deeper on these issues as suggested by the JCAHO goals.

acutecaretesting.org: You head the AACC task force for patient safety. What kind of activities will the group be focusing on in the upcoming year?

Michael Astion: We find that there are a lot of good, useful topics that automatically get talked about – Lean, Six Sigma, Total Quality Management – which the task force does not need to cover. So what the task force tries to do is fill the gaps: write about topics and support programs and lectures on important subjects nobody else is talking about. I will give you an example: disclosure is a huge area now in the quality movement, so during the AACC annual meeting, we had Dr Thomas Gallagher talk about best practices for disclosing harmful medical errors to patients.

Another talk we had was based on the idea of improving lab utilization and physician accountability by using physician report cards. Other issues could be some of the things we just have talked about, like morale issues associated with Lean or even errors in automated environments. Basically, we are trying to fill what we think are gaps. Instead of being an umbrella for everything that is patient safety, we want to focus on the topics that receive less attention – or even those no one wants to talk about – and talk about them as sincerely as possible, without romancing them.

acutecaretesting.org: Two years from now where will we be in terms of patient safety?

Michael Astion: I hope lab utilization will have been recognized as a big patient safety issue and that we will have increased patient safety by decreasing overutilization of the lab. I also hope we will see less obsolete tests being run in the lab.

There is a also a broader perspective that needs to be considered when talking about patient safety and that is access to care.

Access to healthcare in places like the US, where you do not have nationalized health insurance, is a tremendous patient-safety issue. Similarly, in countries with nationalized health, wait times are a huge patient-safety issue.

In the US, when you avoid getting tests that you need because you cannot afford them, you are delaying your care and possibly endangering it – sometimes with fatal consequences. I do not have the answer to the access problem, but lack of access to healthcare is a much bigger patient-safety issue than any of the things we have talked about and it is definitely something that needs to be addressed.

For example, many of us working on laboratory quality are trying to implement changes to decrease the rate of mislabeled specimens from about 1 in 1000 to 1 in 10,000.

That is an important quality improvement project, but in the United States this problem is minor compared to the importance of getting millions of sick, uninsured citizens the laboratory testing that they need.

Interviewee

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