

INTERVIEW

Is Hospital Patient Care Becoming Safer? A Conversation With Lucian Leape

Insights into how the health care system is changing in response to the growing emphasis on patient safety.

by Peter I. Buerhaus

ABSTRACT: According to Lucian Leape, patient safety in hospitals is improving, and it is now possible to get to a level of zero defects. Growing recognition of the need for team training, use of trigger tools, improving the competency of physicians, and full disclosure and compensation to injured patients exemplify positive developments. Yet formidable barriers remain, including separatism in how doctors, nurses, and pharmacists learn; inadequate instruction in communication and team-building skills; poorly developed quality and safety curricula; lack of leadership among CEOs and hospital boards; physician apathy; absence of effective systems for accountability; and failure to believe in the possibility of eliminating medical errors and injuries. [*Health Affairs* 26, no. 6 (2007): w687–w696 (published online 9 October 2007; 10.1377/hlthaff.26.6.w687)]

Peter Buerhaus: You were among the first to suggest that the way our health care delivery system is designed accounts for almost all of the problems that lead to errors, poor quality, and unsafe care. Are patients treated in hospitals safer today than when you wrote your 1991 landmark article, “The Nature of Adverse Events in Hospitalized Patients,” published in the *New England Journal of Medicine*?¹

Lucian Leape: Fortunately, patients hospitalized today really are safer than they were in 1991. The pace of improvement in patient safety has accelerated greatly. When we published the findings from the medical practice study in 1991, we had no idea what to do about the problem. We merely found that there was a

big problem, that a lot of people were being injured, and that there were many preventable deaths, but there was not much in the literature or in any of our personal experiences about what could be done about it. A few years later we recognized that cognitive psychology and human-factors engineering could teach health care a lot about analyzing errors and injuries that result from systems failures. We began to do work in that area to see if these approaches would work in health care. They did. But these lessons did not begin to catch on for most people until the Institute of Medicine (IOM) advocated these ideas in 1999 and declared that we could make a significant reduction in accidental injuries by changing sys-

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tems. The IOM committee and all those who worked in patient safety had no doubt that what we needed to do was change our systems. But because we had no experience in doing that, we were asking people to do something that was untried except in other industries.

Today we have a very large armamentarium of tested and proven safe practices. The Agency for Healthcare Research and Quality [AHRQ] has funded research, and the National Quality Forum [NQF] has done an outstanding job of identifying, validating, and certifying, if you will, safe practices that all health care organizations should implement. And the Institute for Healthcare Improvement [IHI] has been a major driver for systems change for ten years.

In December 2004, the IHI launched its 100,000 Lives Campaign, which ultimately involved the participation of more than 3,000 hospitals to implement six safe practices. This was a hugely successful experiment. At the end of eighteen months, the IHI reported that the hospitals had reduced hospital deaths by 122,000. Some have challenged the numbers, and even the IHI acknowledges that it is unable to attribute all of those lives saved to its interventions. However, if only half of them resulted from this effort, it is impressive. And, to answer the question, is health care safer, all 122,000 lives saved are evidence for that.

What was so striking with the 100,000 Lives Campaign is that more than half of the hospitals in the country committed to the campaign and are continuing their involvement. The IHI is now transforming the 100,000 Lives Campaign into a 5,000,000 Lives Campaign in which they are going beyond preventing deaths to focus on all preventable injuries. The IHI estimates that there are fifteen million preventable injuries per year, and this initiative is an attempt to cut that by one-third over the next two years.

Other impressive results—some included in the 100,000 Lives Campaign—are those achieved by Ascension Health, which has reported impressive reductions systemwide in birth trauma, pressure ulcers, and nosocomial infections, with an estimated 1,953 lives saved

over two years.² And, in Michigan, 100 hospitals in the Keystone project reported that they succeeded in reducing their central-line infections to zero.³

There is no question that we are seeing progress. We have a much clearer idea of what we need to do, and the momentum is increasing. It is a very exciting time. We have worked through a lot of skepticism, denial, fear, and confusion, which always attend new ideas, particularly if you are asked to change your behavior. While I was not too surprised that there was a lot of sputtering when we began, what is exciting is that these reactions have largely settled down.

Government And Media Efforts

Buerhaus: How would you grade both federal and state governments in providing incentives to get providers to focus on reducing errors and improving safety?

Leape: I would give them an F, at best a D-, as they have done very little. Although there was some increase in funding for research early on after the 1999 IOM report, since then the federal government has not done much to provide incentives, financial or other, to improve safety. Some states have established reporting systems, but most of us do not think that those are very effective as incentives. It is a good idea to collect information and learn from it, but this is not a very powerful factor for change. There is a movement in a number of states to require hospitals and health care organizations to publicly report data. This is going to turn out to be fairly powerful, I believe—not so much in that it will help the public shop for their health care, as the economists always want to do. I don't think that happens very often. But public reporting makes hospitals realize they are not doing as good a job as they could, and that makes them do something to improve. I believe that every hospital in this country should be required to report its nosocomial infection rate. The public ought to know what percentage of patients developed an infection as a result of coming into the hospital, particularly infections with resistant organisms, and this information should be reported regularly in newspapers. If we did

that, we would begin to see hospitals take more action to reduce infections. If there is one area where there is clearly a great deal of room for improvement, as well as the know-how about how to do it, it is decreasing nosocomial infections. We need to get on with it.

Buerhaus: How would you characterize the media's portrayal of the quality and safety of the health care system?

Leape: The media have treated us very well. From time to time there are sensationalized reports, but nothing like they have experienced in Great Britain. The media have increasingly become more sophisticated; certainly the elite media—the *New York Times*, *Wall Street Journal*, *Washington Post*, *Boston Globe*—which do an excellent job. I was very heartened recently when *Newsweek* published a special issue containing eighteen stories about patient safety, all focused positively on improvements. Ten hospitals were profiled to show what changes they had made and what safe practices they were implementing. The emphasis was all on how things are getting better, and the results were awesome. It is a delight to see the media accentuating the positive. I think they have done pretty well by us.

“Hot Topics” In Patient Safety

Buerhaus: What are the hot topics today? What is new in improving safety?

Leape: The most exciting thing that has happened recently in patient safety—something that has truly changed our agenda—is that it is now apparent that we can use perfection as a benchmark. This means that we can stop talking about reducing medication errors by 50 percent or improving hand washing by 30 percent, and so forth. We now have convincing demonstrations that when the effort is made and new practices are implemented, we can actually eliminate certain adverse events. There is no reason to think that this cannot be expanded to the whole universe of adverse events. The IHI led this effort five or six years ago by teaching hospital teams how to reduce central-line infections and ventilator-associated pneumonia. Not a large number, but several hospitals had very impressive results.

Peter Pronovost, a physician at Johns Hopkins, demonstrated in his own intensive care unit [ICU] the ability to totally eliminate central-line infections. Let's put this in perspective. Thirty-six million people are hospitalized in the United States every year. Approximately 11 percent receive care in an ICU, so the total number of ICU days is eighteen million or so. Approximately half of the patients in ICUs have a central venous catheter, so the best estimate is that there are 9.7 million catheter days per year and 48,600 central-line bloodstream infections. Approximately one-third of those patients die because of those infections. The figures for ventilator-associated pneumonia—another major cause of morbidity and mortality—are similar. Pronovost's team at Hopkins was able to eliminate both of these types of infections by implementing protocols and rigidly enforcing them: ensuring that the five or six things that needed to be done every time were done and done right. The secret was a major team effort and commitment.

But the exciting thing is that Pronovost took the protocols to hospitals in Michigan, with support from Blue Cross and Blue Shield, and recently reported that 100 of those hospitals have reduced central-line infections to zero.⁴ For more than six months, sixty-eight hospitals had no central-line infections and no ventilator-associated pneumonia. I call this “getting to zero.” What Pronovost has shown is that this is not just something that one or two “safety nuts” can do, but, rather, anybody can do it if they put their mind to it. If sixty-eight hospitals in Michigan can achieve these results, then so can all 5,000 hospitals in the United States. We have a new ballgame and a new benchmark, and it is a very exciting development.

A major part of what Pronovost did was to make teamwork a reality and show that it makes a huge difference. Indeed, my second hot topic is team training, an idea that has finally caught on and has been greatly facilitated by simulation. Although simulation is expensive, it is a very powerful teaching tool. Everyone likes the idea of doctors, nurses, and anes-

thetists experiencing their first crisis on a plastic patient as they learn how to put a tube in, tap a chest, or give a medication. Simulation is sweeping the country and with it a new emphasis on and increased sophistication in team training. Many of us think that this is second only to implementing new practices in terms of its power to create a culture of safety and reduce accidental injuries.

The third important new development, in my opinion, is the use of more sophisticated ways to identify adverse events. The IHI trigger tool has proved very effective. This is a list of approximately fifty elements that can be found in the patient record, many of them laboratory tests or simple clinical observations. One searches for these, either in the electronic record or by going through a paper record, reviewing lab tests and so forth. You identify abnormal findings and investigate whether a patient has suffered an adverse event. We are moving away from looking at deaths (which is a rather crude measure)—in fact, even away from errors, because injuries are what count. It does not make any difference if we are preventing errors if we can't prevent the injury.

The frightening thing is that when hospitals have used this trigger tool—and now there are dozens that have—they find that not 4 percent of injuries, which is what we found in the medical practice study in 1991, but 40 percent of patients admitted will experience some sort of injury. Some are rather mild, such as when a patient suffers nausea after taking a drug, a slight rash erupts and dissipates, blood pressure drops, or some other minor occurrence happens that we did not count in our studies in the 1990s, which looked only at disabling injuries and deaths. But the fact that so many patients have untoward events is very sobering. I firmly believe that every hospital should be actively employing the trigger tool. All they have to do is review twenty charts per month, and they will find that probably eight or ten will contain something that makes them

realize that there is a problem, and they can then go to work on it. Let me finish talking about the trigger tool by saying that this kind of proactive searching for problems is much more effective than responding to reports of injuries and accidents after they happen. Indeed, we are finding that people who are aggressive at improving safety and quality use these prospective real-time tools rather than just responding to reports after they get them.

A fourth hot topic is the national-level effort to ensure the competency of physicians. The Federation of State Medical Boards has spearheaded a joint effort that involves all the national stakeholders: the AHA [American Hospital Association], AMA [American Medical Association], AAMC [Association of American Medical Colleges], and the Board of Medical Examiners, as well as the ABMS [American Board of Medical Specialties] and ACGME [Accreditation Council for Graduate Medical Education]. All of the participants are developing more effective methods for measuring physician competency and ensuring that it happens on a continuing basis. The ABMS has moved toward continuing assessment of competency, which they call maintenance of certification, rather than merely having a physician take a board examination on one occasion. The licensing boards are very interested in learning how to link this with licensure. We are going to see actual progress in that area, and it is long overdue. Many doctors have deficiencies that need to be identified and corrected.

The final hot topic is that the need for full disclosure and compensation is finally on the patient safety agenda. Acknowledging mistakes when they occur, fully explaining what happened, apologizing for errors, and providing compensation for the cost of the injuries we cause are things that we have to do. For too long, too many doctors and nurses have not been forthcoming and honest with patients when things go wrong. Just as patients some-

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times accuse, there has sometimes been a conspiracy of silence. Patients too often do not get the truth, the whole truth, and nothing but the truth, and it is time to stop that.

There are many reasons why physicians have been reluctant to be open and apologize after accidental injury, but a major factor has been bad advice from liability insurance carriers and hospital counsels, who have perpetuated the myth that informing the patient will increase the likelihood of being sued. There is not a shred of evidence to support this assertion—not a single study—yet the myth dies hard. Fortunately, evidence is now coming forth to prove just the opposite—first from the Lexington Veterans Affairs [VA] Hospital eight years ago, and more recently from COPIC [a liability insurer] in Colorado and the University of Michigan.⁵ The facts are that full disclosure and early compensation have led to substantial reductions in the number of suits filed and in the total payouts.

Although fear of litigation is very real, and understandable, I believe that a more powerful reason that doctors sometimes do not communicate fully with patients after a serious error is their sense of shame and guilt. Physicians hold themselves to high standards of performance. As a result, they find it difficult to deal with failure. And they get very little support, either from their colleagues or from risk management personnel. It turns out that full disclosure and apology when there has been an error are important for the physician as well as for the patient. We need to provide them with support to help make it happen.

We recently issued a consensus statement from all Harvard-affiliated hospitals in which we attempted to lay out the rationale and evidence for a more open, honest, and forthright approach.⁶ The response has been gratifyingly positive. Doctors and hospitals have always wanted to do the right thing but have been afraid of the consequences. Those fears are subsiding, and there is at last a growing interest in disclosure that is very encouraging and long overdue. Health care organizations also need to provide the training and support needed to turn aspiration into reality.

P4P And Patient Safety

Buerhaus: What are the implications of pay-for-performance (P4P) initiatives for improving safety?

Leape: I think that the implications are rather provocative. Essentially, it suggests that you can get quality by paying for it. The idea seems sound, but whether the results will confirm it remains to be seen. It certainly is a concept worth trying, given that our current system of paying for health care is rife with perverse incentives. As some wag observed, health care is the only industry where you get paid more for a defective product! But, it's true: Hospitals and doctors receive more income when things go wrong than when they go right. And it works both ways: You get paid less for good care. That is clearly not what we want. Here is a classic example: A doctor does a good job treating patients with asthma, teaching them to manage themselves, and the end result is exactly what we want—patients have fewer attacks. They are not going to the doctor's office as often, they are not going to the emergency room, and they are not being admitted to the intensive care unit and being intubated. But the net result is that both the doctor and the hospital lose money. That does not make any sense, and we need to change that. Our fee-for-service system also emphasizes providing services rather than providing care, and that also needs to be changed. We should pay for good-quality care.

On the flip side, I am one of those people who support another new idea. Some payers have said they are no longer going to pay for so-called never events, those twenty-seven events that should never happen according to the NQF, such as a surgeon removing the wrong leg, a mother dying during normal childbirth, that sort of thing. First in Minnesota and now in other places, some payers are no longer going to pay for never events because they are so egregious that the hospital has a responsibility to make sure they do not happen. This policy will not have much financial impact on a hospital because these events are fortunately very rare. Nevertheless, it sends an important message to hospitals.

Pay-for-performance, though, has some ma-

for problems that we have to sort out. I do not know how they are going to be resolved, but let me at least briefly mention a few. The first is whether you should pay for process or for outcomes. Second, how do you pay: Do you pay a bonus for good care, or do you punish people who fail? Let us say you pay a bonus for somebody who does a better job of making sure that all patients who have a heart attack get beta-blockers afterward. We have pretty good data that this makes a difference in outcomes, so one thing to do is say, "If you achieve a high level—say, over 90 percent of your patients get beta blockers—we will pay a premium." Or do you not worry about that and focus on outcomes? Going back to the asthma example, "If you are able to keep your asthmatics out of the hospital, we will give you a bonus." I much prefer the outcome approach, but it is often easier to measure processes than outcomes, if for no other reason than you have many processes for each outcome. For example, you have to give beta-blockers to hundreds of people to be able to show that you reduced mortality. It is not a simple issue.

Another concern with pay-for-performance involves whether we are paying for the right performance—that is, do we have good enough data that establish that the treatment we want to see happen actually makes a difference? A treatment gets challenged quickly if there is any debate over its effectiveness, and rightly so. We have to be very careful that we link compensation to a specific performance that we know makes a difference.

I am also concerned about the possibility of perverse effects. Any time you change payment, you change behavior, and that often has unintended consequences. If we concentrate on paying for outcomes, will we in effect devalue and direct attention away from the "soft stuff" that means so much to patients: time spent listening to them, caring about them, communicating with them? If we do not pay for that, then is it going to be diminished? I would hope not, but one must be aware of that possibility. And there is always a concern that people will game the system and figure out a way to make pay-for-performance work to

their financial advantage. You can only do so much in terms of clever design. The bottom line is that pay-for-performance is today's "new thing," it is the current fad, and it has some appeal on the surface. We have a lot to learn about it and how effectively it can help improve quality and safety.

When people have studied progress in quality and safety, two approaches have been shown to be most effective in driving change. One of them is a Joint Commission [on Accreditation of Healthcare Organizations] requirement. If the Joint Commission requires you to implement a practice, you will implement it. The second approach, which is even more powerful, is data and feedback. When you show people they are not doing well, they improve. Everybody in medicine, perhaps everybody in health care, thinks they are from Lake Wobegon—that they are "above average." It is very hard for any doctor, for example, to be called average. When you are average, that means that 50 percent of the people are performing better than you. But nobody thinks they are average; they think they are above average. And when they find out from the data that they are below average, they begin to do something about it. We saw this years ago in Pennsylvania and New York with the publishing of results of coronary artery bypass graft surgery. Invariably, hospitals at the bottom of the list in one year moved up the next year, some of them to very near the top of the list. Nobody wants to be at the bottom.

An even more impressive example is the National Surgical Quality Improvement Project run by the VA, which is now being rolled out in the civilian sector. This consists of collecting a large amount of data on every patient who undergoes surgery, and then using that information to determine risk-adjusted death and complication rates. The results are then fed back, not by individual doctor, but by medical specialty, to each hospital. Each VA hospital's surgical specialty department receives observed versus expected mortality and complications scores, which allow them to see how they compare with everybody else. When they discover that they are in the bottom

quartile, they do something about it. The end result has been a significant and sustained reduction in deaths and complications in VA hospitals over the past decade. The collection of meaningful data and feedback, as well as making that data publicly available, have been very powerful. We are going to see more of this, which I believe is a positive development.

Consumer Involvement

Buerhaus: The consumer has become more involved in health care, particularly as market forces have begun to influence the system and the portion consumers pay for health insurance premiums have increased. In addition, we seem to be placing greater emphasis on transparency and public accountability. How do you see these developments affecting error reduction and quality improvement?

Leape: I'm all for it. Patients are becoming increasingly sophisticated in understanding, demanding, and actually looking at data. More and more people use the Web to obtain information and advice, and that is good. A well-informed patient is a safer and happier patient. However, I believe that the economists are wrong in one respect, in that until now, patients have not seemed interested in a big way in shopping for quality. That is, most people do not want to pick their doctor or hospital by a set of scores posted on the Web. Some do, but it is a very small number, and my guess is that it will always be that way. Most people prefer to get their advice from their doctor whom they trust, or their friends. Thus, I do not think that the data on hospital and physician performance have had as much effect on patient choice as some people think they should. However, they have had an effect on patients' sophistication and understanding, and that is certainly positive.

As premiums increase, one hopes that this will create consumer pressure for health care systems to become more efficient. I would like to see this evolve into the development of a new form of managed care. It is almost impossible to provide safe care as an individual, as a doctor in solo practice, or even in a two- or three-physician practice. You need to have

groups. Safety is much more the property of organizations than it is of individuals. Individual vigilance and competence are clearly important, but safety is tied mostly to systems, and it is organizations that have systems. We need to move more into an organizational approach to health care and manage our care accordingly. The increasing costs of health care as well as increasing consumer sophistication are already pushing us that way.

One of the surprises for those of us who work in safety—something we did not see coming—was the rise of patient advocacy groups. We now have at least a half-dozen of these groups in the United States, in addition to others around the world. These organizations were developed by aggrieved patients—CAPS [Consumers Advancing Patient Safety], PULSE [Persons United Limiting Substandards and Errors in Health Care], MITSS [Medically Induced Trauma Support Services], and others. Each of them developed not because of someone's desire to improve safety but in reaction to how they were treated when something went wrong. These groups are saying, "When something goes wrong, you need to be honest and open with us and treat us like human beings, give us support, and apologize." They are shaking the medical profession by the shoulders and saying, "Listen to us and treat us the way you want to be treated yourself." That has been a very effective and important development. That part of the consumer movement has been very helpful.

More Effective Health Care Professions

Buerhaus: What barriers exist in the way in which nurses and doctors are educated and interact clinically that need to be overcome before either profession can be more effective in reducing errors?

Leape: One of the encouraging developments of the safety movement is the growing recognition in both the professions of nursing and medicine that their relationship needs to improve if we are to make major strides in improving patient safety. James Reason says that in one sense, safety is all about relationships,

and I agree. The nurse-doctor relationship is crucial to providing safe care, and too often it doesn't work smoothly.

One of the sources of tension relevant to error prevention stems from different approaches in their education. Much of the emphasis in nursing education is on learning practices and following rules. Physicians are taught analytic thinking and individual responsibility; rules are much less important and are sometimes regarded as subject to individual veto. Not surprisingly, these different approaches can produce conflicts.

A more serious problem is that some physicians don't treat nurses as valued colleagues. For decades nurses have legitimately chafed at not being respected by physicians for the high level of professionalism and expertise they bring to patient care.

Even worse, surveys show that a majority of nurses have experienced disrespectful conduct from physicians.⁷ Although a small minority of physicians are responsible for these episodes, effects on morale and doctor-nurse relationships can be substantial. So, I would frame the question as, What barriers in our educational systems perpetuate these cultural differences that are so detrimental to patient safety?

One of the obvious barriers is separation. Nurses and doctors should be learning together—obviously, not everything, but they should be having experiences in which they learn together by actually working together. We have done a pilot program where nursing students and medical students got together for clinical problem-solving exercises focused around a case. They talked about how to manage the case—technical issues as well as psychosocial aspects. It was very successful; both medical students and nursing students were very positive about it. One of the nursing leaders made the comment that it was important for doctors to understand how nurses think about the problem and vice versa. I agree, but I think it is even more important for all of them

to have the experience of working together to solve a problem. The best way to learn teamwork and how to respect and collaborate with your colleagues is by doing it. What we were providing was a hands-on experience, not didactic material. Sadly, our experiments, while successful, still face the problem of getting woven into the curriculum. I believe that the time is long past that medicine, nursing, and pharmacy—the health care professions for whom training is long and who will work with each

other all the time—should have significant joint exercises. Hopefully, we will see much greater expansion in this area over the next several years.

The second barrier is that we are still very much prisoners of science. Most people think of medical education as learning the science of medicine—basic anatomy, physiology,

pathology, medications, problem solving, technology, and technical proficiency. There is no question that this is absolutely critical, but too often the other half of the practice of medicine, which is how you apply that knowledge to the care of a human being, gets short shrift. We do not give our medical students enough experience in how one actually carries out a treatment plan, communicates effectively with a patient and manages their care, and works well and communicates effectively with the other team members. In other words, we don't do a very good job with the “soft stuff”—the absolutely critical aspects of how we work together to make health care happen. Medical education is still very much caught up in the romance of medical science and continues to ignore the practical aspects of application.

The third barrier is that students in medicine, nursing, and pharmacy receive insufficient basic education in quality and safety. At a minimum, in the first year of school, all of them should learn the basics of error theory, why people make mistakes, and how to prevent them. Later, they should learn how to analyze systems, how to identify systems' failures, and

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how to redesign systems. As we mentioned, they need to learn how to work in teams by doing it, and doctors especially need to learn the basics of leadership. They need to learn much more about how to communicate more effectively, how to handle their own feelings and concerns, and how to handle the shame and guilt they will feel when things go wrong, so that they can still be effective caregivers. They need to learn how to apologize. These are things that are currently not being taught to our budding doctors. In most schools, we have not provided students in any of these disciplines even the rudiments of what they need in basic knowledge in safety, what is known scientifically; nor have we given them the instruction and the experiences they need to develop communication, managerial, and team skills. That has to change.

Role Of Hospital Executives

Buerhaus: How significantly have hospital executives changed their attitudes and behavior toward improving patient safety? How much progress have you seen in the creation of a nonpunitive environment in hospitals?

Leape: I certainly hope they have changed more than I see! This is the single most disappointing aspect of the safety movement for me: the difficulty in getting CEOs of hospitals and health care systems to make safety a priority. On the other hand, we have begun to make some progress in reducing the punitive environment: It certainly is not acceptable anymore to admit that you punish people for errors. Every hospital says, "Oh, yes, we have a nonpunitive environment." In reality, that is often far from being true, but at least they are paying lip service to it, so that's a start.

Lack of inspired, consistent, and forceful leadership is a major drag on progress. CEOs are a "sea anchor" on progress, and that has to change. To be sure, there have been a few exceptions, organizations that have made a great deal of progress. However, no organization can make the significant changes that are necessary to develop a culture of safety without vigorous leadership at the top. I think of the Dana Farber Cancer Institute in Boston, the Virginia

Mason Clinic in Seattle, Ascension Health, and others, and characteristically it is the passion from the CEO that makes change happen. It must happen at this level because middle managers and people at the grassroots of the organization who are eager to make changes cannot do so without support. Getting CEO leadership remains a major unsolved problem in moving patient safety forward.

Barriers Remaining

Buerhaus: Finally, what are the most important problems or barriers that still must be overcome to make health care safe for everyone?

Leape: We can pick up on what we were just talking about, including leadership. We need to reach higher in the organization and get boards of trustees of hospitals and health care organizations involved. If boards have patient safety as a concern, then so will CEOs. Perhaps what we need to do is develop more significant negative consequences for organizations when they provide unsafe care, in terms of either fines, reduced payments, publication of safety data, or sanctions. Clearly lack of leadership is a barrier.

Other barriers I see are ones that do not seem to be much related to safety, but in reality are: namely, our perverse financing system and the perverse incentives it provides, which I mentioned earlier. I believe that we need to have universal coverage. It has now gotten to the point that several states (I am proud to live in one of them, Massachusetts) are trying to achieve this, but it should be a national effort, and it ought to occur tomorrow. I hope that universal coverage will be a major theme in the 2008 presidential election. I mentioned before that we need to facilitate, encourage, and fund managed, comprehensive, patient-centered care, not services. There is no way to do that unless we retire the fee-for-service system. The lack of appropriate financing is one of the major barriers to progress in health care, but particularly to improving quality and safety.

Another barrier is persistent physician apathy. In spite of everything that has occurred, the majority of doctors today are still not very involved in the promotion of patient safety.

There is less resistance—certainly less complaining and carping—but there is not the active participation that is needed. Safety is not a daily concern of most doctors, and it should be. Nursing is way ahead of us on this, but even there things can be improved. Physician apathy continues to be a real drag.

An even more important barrier to achieving safe health care is the absence of effective systems for accountability at every level. Physicians and nurses are not held accountable for safe practices. Why are nosocomial infections such a scourge in this country? We have the highest resistant infection rates in the Western world, and yet we tolerate the fact that in most hospitals fewer than 50 percent of doctors routinely disinfect their hands. It is absolutely incredible that hospitals tolerate deliberate deviation from a known safe practice, and equally incredible that state health departments do nothing about it.

What we are talking about is accountability at every level. While no individual should be punished for making an error, which by definition is an unintended act, willful disregard of safe practices or knowingly engaging in unjustified hazardous conduct must not be tolerated. We call this a “just” culture: no blaming for errors, but no tolerance for misconduct. By the same token, organizations that permit unsafe conduct or perpetuate known hazards should be held responsible. Until those who are responsible are willing to get tough and make sure that we all do what we know we should do, both as individuals and as organizations, lack of accountability will continue to be formidable barrier to making progress.

The final barrier is psychological. Most people do not believe that truly safe care is possible, that it is possible to eliminate medical injuries. They do not believe that we have the knowledge or the methods. Clearly, we are not going to give improving patient safety the effort, the enthusiasm, or the money that is needed unless we believe it is possible to really make health care safe.

The experience with eliminating central-line infections and ventilator-associated pneumonia in Michigan and the great strides at As-

ension Health have changed all that. We now see that it is possible to totally eliminate certain adverse events. A health care system that is almost entirely injury free no longer seems impossible. What we need now is the will to make it happen. Yes, the last barrier is the psychological one, of not believing that we can all do what is now clearly possible.

Buerhaus: Thank you, Lucian, and best wishes.

Leape: Thank you; it has been good to talk with you again.

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The author thanks Brenda Compton for her assistance transcribing and editing the manuscript.

NOTES

1. L.L. Leape et al., “The Nature of Adverse Events in Hospitalized Patients: Results from the Harvard Medical Practice Study II,” *New England Journal of Medicine* 324, no. 6 (1991): 377–384.
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