Pittsburgh Regional Healthcare Initiative

PRHI Executive Summary

Conference: "Talking about Medical Errors and Unanticipated Outcomes"

Safety Equals Respect

During morning rounds, the physician touches one patient, then moves on to the next without sanitizing her hands. The nurse notices.

- ✧ Does the nurse encourage the physician to stop and perform hand hygiene? If not, why not?
- ✧ Does the physician thank the nurse and comply? Or is the physician disrespectful? If so, why?
- ✧ If the physician is disrespectful, does the nurse know where to report the behavior? If she doesn't know, why not?
- ✧ If the nurse knows where to report the behavior, does she do so? If not, why not?
- ✧ If the behavior is reported, is action taken? If so, what action? If not, why not?

The answers to the question in this case, according to Dr. Lucian Leape, indicate not only how safe employees feel in reporting problems, but ultimately how safe patients are. When it comes right down to it, Safety Equals Respect.

On October 21, PRHI and the Allegheny County Bar Association's Committee on Alternative Dispute Resolution and Health Law Section co-sponsored a conference with Leape and several distinguished panelists. Leape is an Adjunct Professor of Health Policy at the Harvard School of Public Health. He is internationally recognized as a leader of the patient safety movement, starting with the publication in JAMA of his seminal article, *Error in Medicine*, in 1994. His research has demonstrated the success of systems theory applied in the prevention of medication errors.

Infection: Job One

Leape congratulated the Pittsburgh region for dedicating improvement efforts to hospital-acquired infections, which strike 2 to 3 million Americans each year, and from which 90,000 die.

"PRHI has made eradication of nosocomial infection Job One, and it's a good place to start," said Leape. He noted that the

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Lucian Leape, MD, from Harvard Medical School, addressed the region's medical and legal leaders on patient safety on October 21. A follow-up panel discussion centered on alternatives to litigation. Dr. Leape's slides and meeting materials are posted at ***www.prhi.org****.*

November 2004

Inside:

Ombudsman, mediation programs discussed

Dr. Leape's remarks were followed by panelists representing major hospital programs that support "telling the truth" about things gone wrong. These programs, along with recent PA Supreme Court developments, seem to be reducing legal claims.

Information and tools about these programs, together with Dr. Leape's slides, can be found on the PRHI web site at www.prhi.org. Representatives from three major national programs led the panel, which was mediated by Ann Begler of the Pittsburgh-based Begler Group:

- ✧ **The Healthcare Ombudsman-Mediation Program at the National Naval Medical Center** has managed approximately 500 incidences over the last three years. Kaiser Permanente, after a brief pilot, has deployed a similar program across 26 medical centers within the past year. Carole Houk of Resolve Advisors, LLC, which developed the program, and Barbara Moidel, the Ombudsman/Mediator at the Naval Medical Center shared their thoughts.
- ✧ **Drexel University College of Medicine** has developed an implemented a mediation program based on a modified model of a program developed at Rush-Presbyterian Medical Center. Carl Oxholm III, Sr. VP and General Counsel, at Drexel, described the insurance coverage crisis that led to the program, and the positive results it has generated.
- ✧ **The Pennsylvania Supreme Court**, over the last year, has taken several steps to support the early resolution of medical malpractice claims within the Commonwealth. These include directives to trial courts, development of new rules and outreach to healthcare institutions. Former Justice William Lamb conveyed the Court's commitment to progress in these areas.

Cardiac Surgery Teams share what they're learning

Cardiac Forum: lessons from the field

Next Cardiac Forum
January 19, 2005
6-8 pm
Allegheny General Hospital

Once again, Southwestern Pennsylvania's cardiac community came together to share ideas, experiences and learning related to coronary artery bypass graft surgery (CABG). Cardiac Forum VI, held October 6 at West Penn Hospital, was facilitated by the PRHI Cardiac Working Group (CWG), which encompasses the cardiac community in Southwestern Pennsylvania.

The CWG, modeled after the Northern New England (NNE) Cardiovascular Disease Study Group, has developed a CABG registry, a learning tool that now contains detailed clinical information on over 7,500 isolated CABG surgeries from 12 cardiac centers. Furthermore, the registry has confirmed findings by NNE regarding four specific factors known to improve outcomes of CABG surgeries:

- ✧ Use of pre-operative aspirin.
- ✧ Control of heart rate (<80 bpm) at induction of anesthesia through pre-operative beta blocker use.
- ✧ Use of internal mammary artery for graft.
- ✧ Avoid hemodilution (nadir hematocrit<21%) on the bypass pump.

Through data reports from the registry and sharing experiences at the forums, the region has shown improvement in these four areas *(Chart 1)*.

Chart 1. Improvement in Four Indicators

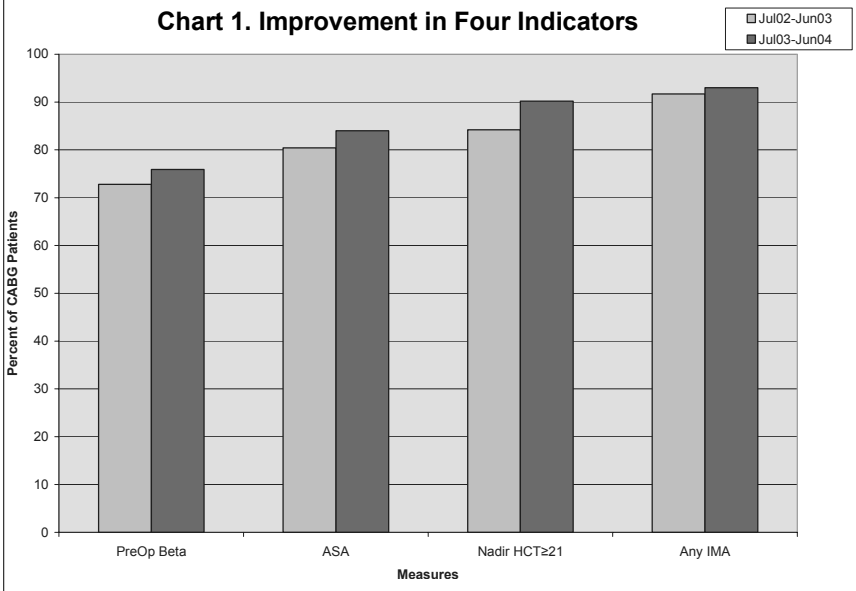
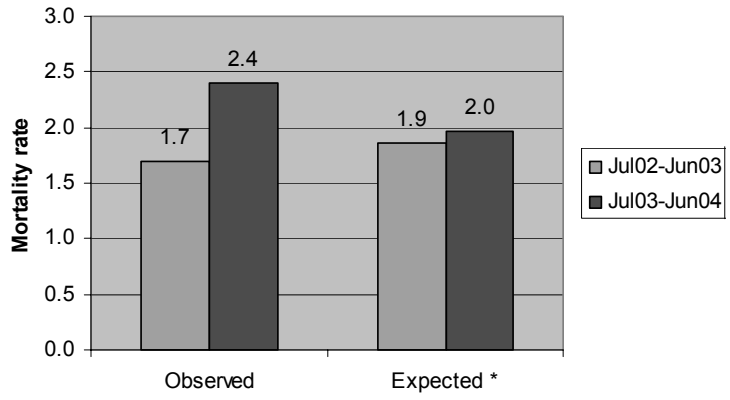


Chart 2. Observed vs. Expected Mortality Over Time



1 Expected rate is based on a modified version of the most current risk adjustment model used by the Northern New England (NNE) Cardiovascular Disease Study Group.

Mortality rates: more work needed

Despite these improvements, in-hospital mortality rate following CABG surgery is rising in our region. Between July 2002 and June 2003, the in-hospital mortality rate of 1.7 percent was slightly lower than the expected rate of 1.9 percent (as shown in Chart 2). One year later, the observed rate climbed to 2.4 percent while the expected rate[1] was only 2.0 percent.

✧ *What does this mean for cardiac care in our region?* Based on the data presented above, one might conclude that our improvements efforts in the four areas did not result in decreasing in-hospital mortality. However, absent the measurable improvements in the four target areas, our region may have seen an even greater increase in mortality.

✧ *What do the data suggest then?* When the CWG began, they identified only four of the improvement areas that had been identified by the NNE. Therefore, the data confirm what we already know: we have made improvements but still have more work ahead. The increasing in-hospital mortality rate signals that there are other areas where we need to concentrate our efforts to eliminate unnecessary deaths following CABG surgery.

✧ *What is* our *goal?* All successful initiatives have a clear goal and strategy for achieving that goal. In setting goals for the CWG, we have talked about *zero mortality* as a goal. But such a broadly stated goal can have unintended consequences. For example, one could achieve *zero mortality* by choosing not to

operate on high-risk patients. Such a decision is not in the best interest of patients, and is not the goal. We are striving instead to ensure that *patients get the care they need when they need it*. Terms like 'appropriate' care and 'unnecessary' deaths can be ambiguous. When CABG surgery is performed on a patient with a very high risk of death, and death occurs, 'appropriate' care has not been given. Although mortality is not unexpected in a clinical sense, a case like this should be considered an 'unnecessary' death, because the decision to perform surgery is as important as the surgery itself. Therefore, the goal of *zero 'unnecessary' deaths* is certainly appropriate as long as we all understand the bar of 'unnecessary' is set well above traditionally 'acceptable' clinical outcomes.

✧ *How do we get there?* The CWG has made great strides in perfecting cardiac care for patients in our region. But we have only begun and have a long road ahead. The CWG continues to look for ways to improve in the four original areas while moving forward with improvements in other areas.

Perfusion and glycemic control offer improvement opportunities

As Adam Cesnales (Ohio Valley Perfusion Associates) and Steve Stewart (UPMC Shadyside) described at the forum, perfusionists continue to examine their processes and improve them to reach the goal of having no patients with nadir hematocrit ≤ 21 percent. They have also identified further goals of reducing transfusion rates and re-explorations.

Drs. Culig (West Penn), Lippe (UPMC Shadyside), and Vasilakis (TMC at Beaver) discussed the importance of glycemic control following CABG surgery. Adequate glycemic control has been shown to reduce mortality, infection, length of stay and cost.

Most, if not all, facilities have insulin protocols. However, because they are generally complex and difficult to use, they are often overlooked. These three facilities shared their experiences in creating a protocol that achieves the clinical outcome of glycemic control while ensuring nurses and other staff can implement the protocol in a simplified way that reduces potential for human error. Several facilities have offered to share their protocols, which will soon be posted on the PRHI website, www.prhi.org.

The CWG will continue to take advantage of this regional collaborative to accomplish together what would not be possible alone.

Why is CABG riskier for women?

The Society for Thoracic Surgeons (STS) recently issued draft guidelines for CABG Surgery in Women. STS invited member surgeons to comment and provide feedback on the draft. The draft guidelines acknowledge that according to the STS cardiac surgery database, CABG operative mortality for women is 3.54%, but 2.15% for men. The question is: *why?*

Most of the recommendations mirror data that the PRHI Cardiac Forum has been analyzing for the past two years, many of which were derived from the Northern New England Cardiovascular Study Group. STS draft guidelines (Class I-II, Level A-B) include:

Use of the internal mammary artery (IMA).* This artery is about the same size in women as in men, although there's some evidence to indicate it's used less frequently in women. The guidelines recommend using the IMA whenever technically possible.

Management of hyperglycemia. There is an unambiguous association between diabetes and adverse post-operative outcomes, such as mortality and infection. Studies show that diabetes is 40-50% more common in women than men undergoing CABG. More importantly, the adverse clinical impact of diabetes on CABG outcomes is more pronounced in women than men. Lack of tight glycemic control, even in non-diabetic patients, is the most important predictor of whether a patient will develop a devastating post-operative infection of the sternum (mediastinitis).

Management of anemia.* ** As the NNE and the CWG have confirmed, excessive blood dilution (hemodilution) during CABG increases the risk of mortality and other postoperative complications. Because women generally have smaller blood volumes, they are particularly susceptible to hemodilution. Women have been shown to have lower hematocrit levels than men both before and during CABG. Members of CWG are even a step ahead of the draft guidelines as they implement improvements such as retrograde autologous priming (RAP) to keep nadir hematocrit above 21%.

Adjustment of anesthetic and sedation medications. Doses of anesthetics and sedatives should be adjusted for body weight.

* *Processes of care currently tracked in the PRHI Cardiac Registry.*

** *(See "Cardiac Forum highlights role of perfusionist," October 2003* PRHI Executive Summary, *available online at* www.prhi.org/wpapers.cfm.*)*

Karen Feinstein editorial from Post-Gazette October 10 edition

The solution to high health-care costs is right here

Skyrocketing health-care costs and improving health-care performance in safety, clinical care and efficiency are on everybody's mind -- putting the nation and the region in crisis mode. But right in our own back yard, health-care providers are testing a solution based on a simple health-care value proposition. Relentless attention to removing waste and error and delivering nearly perfect care will lower costs while improving health -- inevitably. It's a solution worth a closer look.

Health benefit costs have soared again this year. Average premiums paid for family coverage top $1,000 a month among 5,000 local employers, almost 25 percent higher than the national average, according to Cliff Shannon, head of the region's SMC Business Councils.

Unfortunately, quality seldom climbs with cost. For instance, many regional players score high in rates of preventable hospital-acquired infections and low in indicators of basic care for diabetes, depression and other chronic conditions.

For a decade, the nation has spun its wheels attacking high health-care costs with "mega" solutions, such as managed care, the Hillary Clinton plan or vertically integrated systems. Nationally and locally, costs continue to rise energetically and quality crawls along.

Financial issues dominate. But quality care is the grail.

Think about this: Every time a nurse gets a wrong drug from the pharmacy, can't access needed supplies, receives confusing or inappropriate instructions or works in sub-par or unsanitary conditions, we ~ the patients ~ pay and suffer more.

Not surprisingly, four important Pittsburgh conferences within the past month have addressed these issues. What is surprising is that multiple national and regional leaders in health system performance recommend similar solutions.

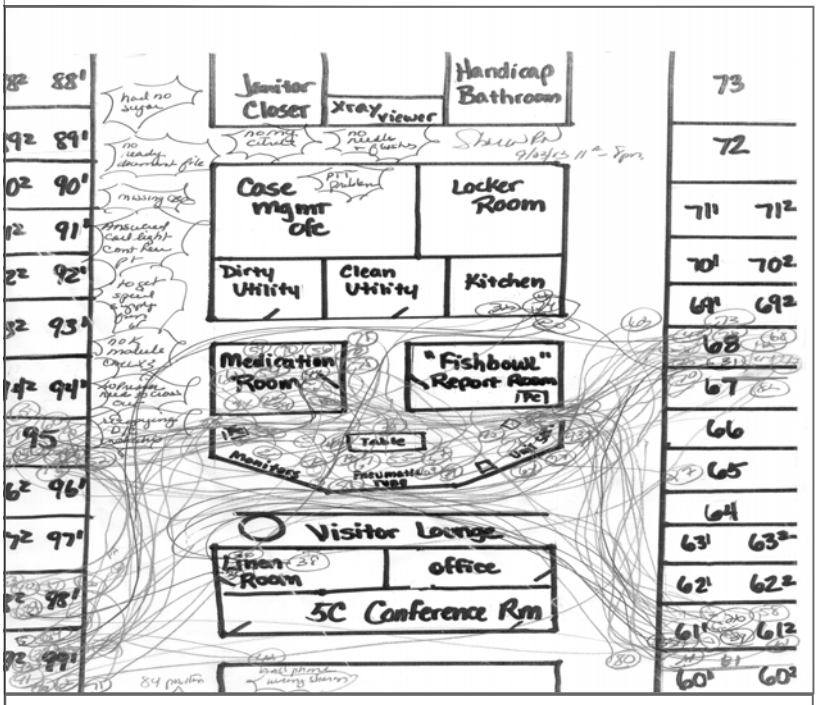
Rather than advocating a national policy fix, speaker after speaker called for improvements in basic service delivery. The current design of work, not the high cost of malpractice insurance or even the cost of prescription drugs, was identified as the major culprit.

Robert Brook of the RAND Corp. cited results from his recent study which indicate that the average American adult receives recommended health care 55 percent of the time; he argues that better diagnoses and treatment decisions would save millions of dollars and lives. Many health care costs are attributable to unnecessary tests, procedures or preventable errors.

And Dr. Paul Uhlig of the Dartmouth Medical School declared that "health care will be transformed not by laws or regulations, but as it always has been ~ by people working together in news ways to give better care to their patients."

Other colleagues reached similar conclusions at the different programs hosted by Highmark, the Pennsylvania Health Care Cost Containment Council, the Pennsylvania Medical Society and the University of Pittsburgh Department of Pathology. Failures in basic service delivery go unrecognized ~ even rewarded ~ by the indifference of key stakeholders.

Many steps: typical waste in the work design of a nurse



Four separate health conferences in Pittsburgh pointed to the same root problem: *the current design of work, not the high cost of malpractice insurance or even the cost of prescription drugs, was identified as the major culprit in the feverish run-up of healthcare costs.*

Let's face it: Trustees and even consumers get more excited about breakthroughs in transplant surgery and new technology than in improved work flow, teamwork and communication.

Michael Porter, in his recent study published in The Harvard Business Review, urges: "Information is integral to competition in any well-functioning market. ... The most fundamental and unrecognized problem in U.S. health care today is that competition operates at the wrong level. ... It should occur in the prevention, diagnosis and treatment of individual health conditions. ... Providers should be rewarded for the best value care.

"Health insurers should be rewarded for helping customers learn about and obtain care with the best value. ... The health-care system can achieve stunning gains in quality and efficiency, and employers, the major purchasers of health-care services, could lead the transformation."

Why is information so important? Because hospitals and physicians will respond to community preferences. If purchasers and patients had good information, they could signal their enthusiasm for highest quality care from lowest cost providers by voting with their feet and their wallets. The incentives to provide the right care every time would multiply. This is working in California, and it could work here. Consider the many ways the system actually diminishes the importance of efficient, safe and evidence-based patient care.

Health-care providers don't receive higher reimbursement rates for better patient outcomes. Health-care professionals don't earn academic prestige or NIH funding for improving the safety and reliability of their daily practice.

Consumers should be impatient for opportunities for exponential improvement in care. Consider what has already been achieved locally.

When work redesign is applied rigorously, the results are stunning. Take the VA Pittsburgh Health System's main hospital. One unit used PPC principles to virtually eliminate a virulent, antibiotic-resistant staph infection in just two years. Such infections cost on average $38,000 per infected patient, and more than $110 million per year in our region.

They succeeded with simple, methodical systems developed by those working at the point of patient care, from managing wheelchair and latex glove inventories, to organizing and cleaning an equipment room, to educating and reminding staff about effective hand hygiene protocol.

They regularly document their progress, sharing infection rates, sharing successes throughout their system.

Allegheny General Hospital is not only working to eliminate infections but also to track the costs of hospital-acquired infections and their impact on its bottom line. Sifting through and analyzing the financial data at their disposal (devoting hundreds of staff hours to the task) they have documented the savings of dozens of lives and millions of dollars each year if such infections were eliminated.

Through real-time problem solving at the point of service, they are well on their way to both savings.

Allegheny General is not alone. The region's hospitals have slashed the rate of central-line associated bloodstream infections by 55 percent between 2001 and 2004, saving the lives of 25 percent or more of the people who die from such infections. Across the region, infection control professionals and others have succeeded by introducing "insertion kits," which ensure that every item needed for safe central line insertion is available when a health-care provider needs it, "procedure notes" in patient charts, which serve as checklists of recommended practice, and observations by staff teams to improve understanding of current line insertion and dressing maintenance.

One unit at the Pittsburgh VA hospital used Perfecting Patient Care principles to virtually eliminate a virulent, antibiotic-resistant staph infection in just two years. Such infections cost on average $38,000 per infected patient, and more than $110 million per year in our re-

Community-based health-care organizations are succeeding too.

For example, through work redesign and problem-solving at the point of service, the UPMC Lawrenceville Family Health Center has improved the care of patients with diabetes, dramatically increasing the rates of regular eye and foot examinations, blood pressure screenings and blood sugar tests.

A region can get what it wants, if we all do our part.

Health-care providers must generate good information – making errors, dangerous practices and

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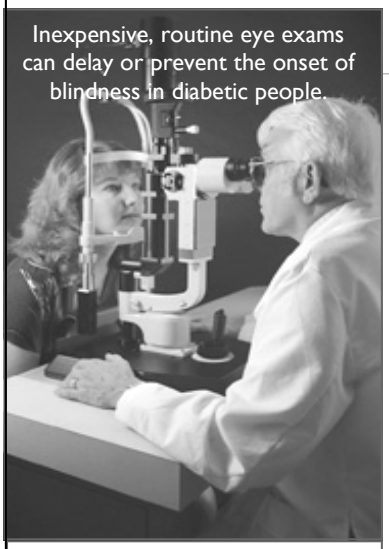

Inexpensive, routine eye exams can delay or prevent the onset of blindness in diabetic people.

Competition [in health care] operates at the wrong level. ... It should occur in the prevention, diagnosis and treatment of individual health conditions.
Michael Porter,
Harvard Business Review

Feinstein Editorial, from page 5

inefficiencies transparent, so that care teams can find root-cause solutions and implement changes rapidly. They can also assure that their staff teams are well trained, capable of redesigning their work to incorporate the best safety science and clinical practices, and the fewest "work arounds" and daily goofs.

The Pittsburgh Regional Healthcare Initiative's Center for Shared Learning has already trained hundreds of health professionals in our region and across the country in Perfecting Patient Care, a system adapted from the Alcoa Business and the Toyota Production systems. But this work requires support, recognition and reward when incorporated in their home workplaces.

Employers, as health-care purchasers, can ask for and use data on health-care outcomes, and share it with their employees ~ if health insurance plans would make the information easily available. Health insurance plans, in turn, also can reimburse facilities that have higher quality, safer care with higher payments and withhold or reduce reimbursement to facilities whose quality and safety measures falter.

Such a commitment among employers and the health plans they choose is possible. The Florida Health Care Coalition succeeded in saving their community $50 million in one year alone by supporting quality improvement efforts that benefit the over 2 million residents of central Florida. Its president, Becky Cherney, says that employers joined the coalition because "we were spending a ton of money on health care but had no idea what we were buying. ... We employers were going to be brokers of information."

We believe that information is key. Data can transform. The question is, how do we speed this along? The national debate on health care would be elevated if the policy framers had attended Pittsburgh's four regional dialogues this month. Best-practice medicine, applied rigorously, using the scientific method to measure results and produce consistently better outcomes, is the grail.

But it won't appear miraculously. It takes a region to support, expose, recognize and reward excellence.

Congressional Aides visit PRHI partners, talk policy

On October 12 and 13, PRHI coordinated a Pittsburgh site visit by three Congressional health care staffers: **Diana Birkett**, responsible for advising the Senate Finance Committee and Sen. Max Baucus on health quality issues; **Michael Zamore**, who staffs Rep. Patrick Kennedy, a bi-partisan leader on health care quality, payment and IT issues in the House of Representatives; and **Jay French** is economic development advisor to our Senator Rick Santorum and long-time supporter of our community's collaboration.

The visitors followed the PRHI model, starting "at the bedside" reviewing patient safety improvement activity to prevent infections and corresponding business case analyses at two local hospitals (AGH and the VA Hospital, Oakland). They then touring the University of Pittsburgh's WISER patient safety simulation training center.

Discussion focused on the policy implications of what "getting it right, patient by patient" demands. Other major topics included:

- How best to expand demonstration programs and payment reforms to reward good outcomes and change system behavior.
- The value of passing a fully protected federal patient safety reporting system. (Legislation is currently in conference committee and could be passed in a post-election lame duck session).
- The value of expanding new consensus JCAHO-AHA-CMS public reporting measures, while shedding non-consensus and often duplicative data.
- The potential value of a detailed business case analyzing the "cost of poor quality/value of good quality" at a few leading medical institutions. (Estimated research cost: $5-10 million.)
- How medical simulation training like that offered at WISER could most rapidly be expanded into "standard operating practice" across the nation.

Our guests appreciated the detailed view of real work in the trenches, and have already been in touch with PRHI partners with follow up questions.

PRHI partners with interests in these and related topics are invited to contact Ken Segel (ksegel@prhi.org) or Naida Grunden (ngrunden@prhi.org) at any time.

From page one: Lucian Leape, MD

Safety Equals Respect

World Health Organization's Patient Safety Alliance will call this month for a major reduction in such infections across the world in 2005.

Culture: the way we do things

Dr. Leape's opening hypothetical case on hand hygiene seems all to real to many healthcare workers, and illustrates the difficulty of overcoming *culture* in a hospital. Leape defines *culture* as "the way we do things around here." Hospital workers, he noted, generally work in autonomous, isolated units "side-by-side but not together." In addition to the lack of teamwork, a human factors engineer observing hospital culture would notice:

- ✧ No one is in charge.
- ✧ Safety is not the top corporate priority.
- ✧ Failure to observe basic safety practices, and widespread tolerance of that failure.
- ✧ Absence of systematic data collection on things affecting safety, like medication errors and missed diagnoses. Reliance on "reporting" instead of measuring system performance.
- ✧ Defense, not analysis, in response to accidents.
- ✧ Reliance on punishment and training instead of system redesign.

Just what is the culture of safety that we seek?

- ✧ Everyone agrees on the values and goals. Patient safety, the Number One priority, is understood implicitly from Board room to break room.
- ✧ Each employee shares a sense of personal responsibility for the safety of each patient. (It's not just the Patient Safety Officer's job.) Any person can stop a process that is unsafe.
- ✧ Electronic medical records are used and supported through training.
- ✧ Patient-centeredness. (*When there's an interaction, who waits?* It should not be the patient.)
- ✧ Multidisciplinary teams.
- ✧ Non-punitive response; accountability, analysis and system redesign when things go wrong.

Change requires leaders, MDs

Change will require institutional leadership, but especially physician involvement. Perhaps physicians don't believe the numbers, believing the large number of errors and problems don't square with their experience.

However, most mistakes are not recognized by providers. In one experiment, three-quarters of the breaks in a surgical sterile practice noted by a human factors engineer were not recognized by anyone on the surgical team. Of hospital prescriptions, 11% are errors; of physician office prescriptions, 8% are errors, and 20% of those are serious. In autopsy studies, 20-40% of patients had major unsuspected diagnoses, half of which led to the patient's death. These errors often pass unrecognized.

Most errors go unrecognized. In autopsy studies, 20-40% of patients had major, unsuspected diagnoses. Half of them led to the patient's death.

Breaking through physician resistance involves changing the sense of "free agency," and disarming guilt, shame and fear of punishment. In the aftermath of an error, the second victim is the caregiver. Systems analysis—a learning system that improves systems in response to every error—is the antidote to shame.

And leadership?

"If safety were the Number One priority among physicians, hospital leaders would follow," said Leape.

In the hand hygiene example, he says, the physician ideally would thank the nurse for her vigilance. If the response involved disrespect, the nurse would know immediately where to turn, and would know with certainty that action would be taken and that the behavior would not recur. Fear of recrimination would not even occur to the nurse.

In the end, said Leape, Safety Equals Respect. Acting out that respect every day for patients, colleagues and oneself is a "moral journey" that will result in a finer, less expensive, more effective American medical system.

Pittsburgh Regional Healthcare Initiative

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Calendar, December 2004

Wednesday, Dec. 1	Leadership Obligation Group	2-4 pm
	Location TBA	
Tuesday, Dec. 7	PPC 101, Centre City Tower, 5th floo*	8a-5p
	Centre City Tower, 5th floor	
	Pre-registration required*	
Tuesday, Dec. 14	Obstetrical Working Group, PRHI Offices	5:30—7p

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