

focus on Patient Safety

A NEWSLETTER FROM THE NATIONAL PATIENT SAFETY FOUNDATION

Reconfiguring Clinical Teamwork for Safety and Effectiveness

BY PAUL N. UHLIG, MD AND COLLEAGUES

There is a question that seems pervasive in modern health care practice. It usually arises in puzzlement steeped with frustration, asked of care givers by patients and their families. The question is: "Don't you people talk to each other?"

'Of course we talk to each other'

Practitioners think in reply, "Of course we talk to each other. If you only knew how hard we work at it. We call each other, we page each other, we email, we write orders in the chart. We return phone calls, answer pages, discuss cases at conferences. We talk in the hallways, in the cafeteria, in the office, at the nursing station. We spend time talking with family members. It's not easy."

Yet, for all this hard work, the question persists. It is worth thinking about, because hidden within that question are hundreds of unintended consequences—many frustrating, some lethal.

Health care: A new, yet old system

The question that won't go away is a natural consequence of what happens when a human endeavor, such as health care, changes. In terms of scientific capability, health care is vastly more capable than in the early 1900s when the principles of "modern" scientific medical practice were first widely accepted. But the organizational structures and patterns of communication used today are persistent relics of this bygone era. Even the newest computer systems automate methods of practice that are nearly a century old.

At the heart of health care practice, then and now, is an implicit assumption that health care is an intensely individual activity. Yet knowledge and capability have expanded so remarkably that rarely does a single individual provide comprehensive care for most conditions. Practitioners train individually, think individually, take responsibility and are held accountable individually; yet actually practice collectively.

Health care has become a collective activity. But health care is not yet organized to support collective practice. Until health care assimilates this new reality—which

requires fundamentally changing the way practitioners think and perform their work—the question will not go away.

'Health care has become a collective activity. But health care is not yet organized to support collective practice.'

Clinical teams—or loose collections of practitioners?

A common-sense definition of teamwork is shared activity resulting in something greater than the sum of the individual parts. This understanding conveys ideas of collective identity and aligned effort. Yet, when health care "teams" are carefully examined, rarely do they show evidence of a collective identity; even more rarely are there signs of planning, practice, or review of performance as a functioning unit. Most clinical "teams" are in fact loose collections of individual practitioners attempting with varying degrees of success to connect with other individual practitioners.

Clinical microsystems, human factors science and the science of safety

Although true teamwork in health care is rare, Nelson, Batalden and others have pointed out that consistent groupings of people and resources come together in response to certain patterns of patient need. These groupings of people and resources are known as "clinical microsystems."

For example, a clinical microsystem such as an open-heart surgery unit would include the surgeons, nurses, pharmacists, therapists, nutritionists, social workers and others who routinely interact to care for open-heart patients, along

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If you have questions or comments about the Concord Collaborative Care Model, or wish to visit the Concord program, please contact Anne Nason, MS, ARNP at anason@crhc.org.

References for citations are available; contact Lorri Zipperer at info@npsf.org.

with the resources necessary to do their work. Clinical microsystems are seldom formally recognized in the infrastructure of health care; therefore the value of focusing on microsystems as leverage points for care process transformation is rarely appreciated.

There is extensive literature developed from other industries' experience in optimum conditions for individual and team performance, coordination of action and communication in human groups, and achieving high reliability in complex, dynamic environments. In contrast to health care, which has traditionally emphasized an individual approach to performance and safety, it is well-accepted in other disciplines that system-based, collaborative approaches are much more likely to produce superior outcomes.

The Concord Collaborative Care Model

Can these methods from other industries be used successfully in a health care setting? The Concord Collaborative Care Model is an ongoing effort to apply principles of clinical microsystem theory, human factors science, and the science of aviation safety to clinical practice in a cardiac surgery unit at the Concord Hospital in Concord, New Hampshire.

The center point of the work is a new way of making morning rounds. Rather than coming one at a time throughout the day to see each patient, members of the extended cardiac surgery team come together at one time each day to make rounds at each patient's bedside. Family members are encouraged to be present, and each patient and family member is encouraged to be an active participant in the rounds process. Every effort is made to speak in "ordinary language" instead of medical terminology.

Developing a collaborative communications cycle

Working with a human factors expert, a structured communications process for the rounds was developed, known as the "collaborative communications cycle." This cycle, repeated each day for every patient, begins with a review of the plan developed the day before. In turn the patient, family members, nurse, pharmacist, therapists, social worker, spiritual care provider, surgeon, and other members of the care team discuss the patient's progress, medications, and concerns.

The team works together to develop a plan of care for the day. Roles and responsibilities are clarified and the plan is summarized for the patient's approval. Every patient, family member, and team member is asked about anything that didn't go as expected. These events, known as "system

glitches," are discussed openly by the care team, patient, and family members and are recorded for further review and action, immediately if possible, or later at a bimonthly team meeting known as "system rounds."

The Concord Collaborative Care Model is an ongoing effort to reconfigure clinical teamwork from a traditional, loosely connected individual activity to a coordinated, collective activity. Improved outcomes and high patient satisfaction have followed.

New teamwork system produces measurable results

Since the institution of the collaborative care model, morbidity and mortality have improved significantly (Northern New England Cardiovascular Study Group data); staff satisfaction has improved measurably (internal survey); and patient satisfaction has been maintained consistently in the high 90th percentile nationally on standardized surveys (Press-Ganey, and Associates).

There have been many challenges along the way, including the difficulty of finding a time for rounds that would not interfere with team members' schedules. It took time for practitioners to develop the trust and confidence necessary to discuss clinical situations openly with patients and families as active participants, and to accept input into their decision-making process.

Practitioners, patients and families respond positively

The most-frequently heard comment from practitioners is how rewarding it is to see how much the rounds process means to patients and families. Team members also comment that having a complete picture of what is happening leads to better decisions. Pharmacists note that the process helps avoid medication errors because it allows immediate interaction among all of the parties involved in medication decisions, including the patient.

Most practitioners have found the collaborative rounds process requires an investment of time up-front but saves time and more over the course of the day. The response of patients and families has been overwhelmingly positive.

The way it should be

By the way, patients and families don't ask anymore, "Don't you people talk to each other?" Since we started making rounds together—with them—they, and we, know exactly what is happening and what is planned...without question.

Isn't that the way it should be? **NPSF**

The Impact of Facility Design on Patient Safety

By John Reiling, President and CEO, and Amy Bauer, Administrative Fellow, St. Joseph's Community Hospital, West Bend, Wis.

"Charting the Course for Patient Safety" was the title of an April 18-19, 2002 Patient Safety Learning Lab sponsored by St. Joseph's Community Hospital of West Bend, Wis., a member of SynergyHealth, to explore the impact of facility design on patient safety. A national panel made recommendations that have changed the facility design process at St. Joseph's to better promote a culture of patient safety.

Winston Churchill said, "We shape our buildings and afterwards our buildings shape us." We agree. We shape safe hospital facilities, then safe hospital facilities shape us.

Seldom does an opportunity emerge to build a new hospital; most hospitals are in a continuous cycle of remodeling and expanding their existing facilities to adapt to changing demands. St. Joseph's Hospital is in the unique position of deciding to relocate and build a new hospital rather than redesign an existing facility.

In planning for its new facility, hospital leadership approached the hospital design process with a blank sheet of paper, an appreciation of the overwhelming evidence of the opportunity to improve hospital patient safety, and the belief that improving hospital facility design will not only increase patient safety directly, but will indirectly promote a safety-oriented organizational culture.

With millions of dollars spent annually on health care construction, there is a need to develop a set of safety-driven design principles for all health care systems, including remodeling and additions.

Inspired by the 1999 Institute of Medicine Report, *To Err is Human: Building a Safer Health System*, early internal discussion at St. Joseph's began to focus on how the new facility's design could affect patient safety. As hospital leadership spoke with national leaders in patient safety, a uniform response evolved that there was an opportunity to learn collectively and develop working ideas on how a facility could be designed to improve patient safety.

Convening the patient safety learning lab

St. Joseph's Hospital convened a patient safety learning lab composed of leaders and representatives of organizations committed to improving patient safety, as well as physician leaders from St. Joseph's Hospital medical staff.

Two keynote speakers set the stage; facilitators divided the participants into four groups to discuss a set of patient safety design issues.

Learning from other industries

During the learning lab, comparisons were made to the nuclear and transportation industries, including spacecraft design. All industries studied, including hospitals, deal with highly vulnerable and at-risk circumstances. Differences between the industries studied and hospitals include lack of technology, operators not being at personal risk, and a lack of focus on safety in the design process.

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Designing for patient safety

In the breakout session, each work group reviewed the traditional process for facility design. The task was to reconsider this fixed process in light of learnings from other industries and to generate principles and guidelines for a more contemporary facility development process driven by a commitment to patient safety.

The challenge to participants was to consider: the design process; organizational work processes and systems; technology and equipment; and the physical environment, and to recommend how this traditional process should be changed to facilitate designing for a safe facility.

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John Reiling is President and CEO of St. Joseph's Community Hospital in West Bend, Wisconsin. Amy Bauer is an Administrative Fellow at that institution.

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Top 10 recommendations

The national participants prioritized the results of the learning lab and developed their top 10 recommendations.

1. Employ failure mode and effects analysis (FMEA).

The participants proposed completing FMEA on the current facility and at every design stage focusing on facilities.

2. Involve patients and families in the design process.

The hospital should consider simulation tapes, mock-ups, focus groups, surveys as well as design-plans review as ways to involve patients and their families.

3. Standardize location of equipment, supplies and room layout, as well as care processes.

Medical equipment, technology, space, room orientation, and procedures should be standardized to the extent possible, without losing sight of optimal care.

4. Develop a checklist for current and future design.

Lessons learned from this process should be documented as a checklist for future designs of any hospital construction project.

5. Reduce noise.

Facility, equipment, and communication planning should support a philosophy of quiet care delivery.

6. Articulate a set of principles by which everything is measured.

Every employee and physician involved with design should apply a set of safety design principles to the facility.

7. Bring critical decision-making information close to the patient.

Critical information used for decision-making should be close to the patient with easy access at the point of service.

8. Begin equipment planning on day one.

Not only should equipment from vendors be reviewed for safety requirements, but planners should work with vendors to promote standardization across all similar products, ie, fittings, hook-ups, tubes, labeling, and review process for equipment malfunction. The equipment planning process should begin on day one.

9. Begin room mock-ups on day one.

To enable workflow analysis and identify existing and potential hazards, mock-ups and simulations should begin the first day of design and continue throughout the process.

10. Use adaptive systems to allow for future function.

Flexibility, scalability, and accessibility were identified as critical and interrelated design principles. Facility design also requires flexible design to eliminate unsafe conditions from new technology and processes with respect to ceiling height, wiring, tubing, lighting, door and hall width, and building materials.

Modifying the design process

The design process was modified to determine which services, technologies, and equipment at the front end should be deployed, guided by the design principles, thus maximizing patient safety within the financial resources available. Mock-ups were also developed the first day of the session.

The teams agreed on 10 design principles

1. Design around precarious events.
2. Standardize.
3. Automate where possible.
4. Make information visible to patients and staff.
5. Plan for obsolescence of facilities, equipment and technology.
6. Review design for human factors.
7. Reduce or eliminate noise.
8. Involve patients and families with care.
9. Allow patients and families to review design.
10. Make the facility adaptive—scalable, flexible and accessible.
11. Minimize staff fatigue.
12. Design for the vulnerability of patients.
13. Focus design on organizational processes, not just departmental processes.

Using facility design to promote patient safety

Any remodeling or new facility construction should consider design focused on patient safety. St. Joseph's Community Hospital's safety culture has and is evolving as a result of this safety-focused facility design. As the facility design progresses, much more will be learned to assist in developing patient-safe facilities. **NPSF**

Getting Started: Four Practical Facility Design Improvements

Example #1

Equip the MRI ante room with metal detectors. Lock the MRI door to assure anyone who has magnetic substances either with them (staff personal material) or in them (a screw in a knee) are discovered before serious damage could occur.

Example #2

Ideally every piece of equipment and the facility would be standardized. Every organization should start standardizing equipment. Any remodeling or new building should incorporate standardization as much as possible. The ultimate standardization for patient rooms would be replicable rooms, not back-to-back.

Example #3

Automate where possible. Example: Design materials flow to minimize or eliminate human contact. Investigate vertical and horizontal systems, eg, tube systems, dumb waiters, elevators, etc.

Example #4

At the beginning of any facility process, define and assess the relationship between equipment technology, the facility and the impact on each guiding principle. Consider a technology fair, facilitating matrix development and Failure Mode and Effects Analysis (FMEA) training for application on facilities.

NPSF, AMA, AHA Team up to Help Patients Prevent Infections During a Hospital Stay

As part of its *Stand up for Patient Safety* campaign, NPSF is working with the American Hospital Association and the American Medical Association to help educate patients about ways to prevent infection. The groups will help distribute a new NPSF consumer guide that provides patients with helpful principles for managing their health care.

"Infections can happen after many types of medical procedures, especially surgery," explains Robert Krawisz, NPSF executive director. "But there are simple steps a patient can take to prevent the risk of infections during, or even before their hospital stay."

Suggestions from the new brochure, "Preventing Infections in the Hospital—What You as a Patient Can Do" include:

- Keep skin around dressings or intravenous catheters clean and dry.
- Wash hands carefully and thoroughly.
- Diabetics and their doctors should closely monitor blood sugar; high blood sugar greatly affects the risk of infection.
- Keep catheters or drainage tubes secure or notify nurse promptly.

- Ask friends and relatives not to visit if they feel ill.
- Before a hospital stay, quit smoking to prevent the risk of post-operative lung infections.

In an effort to provide the broadest distribution possible, the groups teamed up to disseminate the information to physicians and hospitals across the country. "With the recent attention on the incidence of infection in hospitals, we believe this brochure will provide patients across the United States with some sensible principles to managing their own health care and becoming an active partner in their health care team," explains Dr. Donald Palmisano, AMA president-elect.

"Hospitals follow a strict set of protocols to prevent infections. Hospital staff need the help of patients, families and visitors to prevent infections and this brochure will enhance current efforts," says Dr. Don Nielsen, senior vice president for Quality Leadership for the American Hospital Association. "The AHA, AMA, and NPSF will continue to update and improve this brochure and make it widely available." [NPSF](http://www.npsf.org)

Under the banner of Stand Up for Patient Safety, 17 leading hospitals from across the country are joining forces with NPSF to mobilize a groundswell of activity and support among all hospital leaders to reduce errors and improve patient safety.

The brochure, 'Preventing Infections in the Hospital—What You as a Patient Can Do,' is available online at www.npsf.org.

Business Coalitions Get Employers Involved in Improving Patient Safety

BY GREGG O. LEHMAN, PhD

According to a study by the Harvard School of Public Health, more than 50% of US physicians believe their ability to deliver high-quality care has decreased over the past five years; 25% of these physicians rated their hospitals as fair or poor in addressing medical errors.

On May 29, 2001, the *New York Times* reported that in the past decade, 84% of HMOs and 60% of hospitals have never reported a single adverse action to the government—even though tens of thousands of Americans die each year due to medical errors.

What can businesses do to achieve a value-driven health care market in every community? The National Business Coalition on Health (NBCH), an organization of 85 member coalitions, is dedicated to helping employers achieve community-based reforms resulting in measurable improvements in health care value.

A 5-step strategy for improvement

NBCH's National Health Leadership Council, composed of business executives and health care industry stakeholders, has developed five strategies to improve patient safety and reduce medical errors:

1. Develop and support consumer awareness of safety issues.
2. Support standardized reporting.
3. Support rewarding providers for quality, safe, affordable health care.
4. Support and demonstrate the development of safe-practice indicators.
5. Support development and use of contract standards for safety.

In light of NPSF's focus on the patient's role in improving patient safety, this article focuses on point one: developing and supporting consumer awareness of safety issues.

Leveraging the power of local coalitions

NBCH is deploying the capabilities of local coalitions as a fulcrum to engage a large number of employers and employees in promoting patient safety awareness. The coalition structure is uniquely positioned to get the message out to a large number of employees very rapidly—with the credibility of a respected, neutral third party. Many employees are looking for reliable online information, but there are a number of non-credentialed Internet sites;

it's difficult for employees to tell whether these sites are legitimate. If NBCH deploys a coordinated strategy through the local coalitions, it can access 8,000 employers across the country that could affect 34 million Americans.

NBCH is positioned to serve as the aggregator of best practices in patient safety, and disseminate the information through the NBCH Web site, or via the local coalitions' Web pages.

'The coalition structure is uniquely positioned to get the message out to a large number of employees very rapidly—with the credibility of a respected, neutral third party.'

This information would help educate employees, making them aware of the key issues in patient safety, as well as the questions they should be asking their health care providers. It's a "pull-through" strategy from the national organization implemented through the local coalitions.

Because some employers block their workers' access to the Internet, NBCH also plans to offer the same information on CD-ROM for employers to offer on their intranets.

What are the local coalitions doing?

NBCH now has a significant number of its member coalitions actively engaged in local patient safety initiatives. For example, some coalitions are incorporating the Leapfrog standards in their contracting methodology with health plans; they're putting patient safety criteria into their requests for information.

This project is being coordinated nationally by NBCH, which is building a database on how the health plans are responding. The database offers information on how more than 71 health plans are implementing patient safety

standards in 2002. NBCH performs a weighted-average scoring of how the health plans are performing with their provider networks and on patient safety initiatives. In addition to the Leapfrog standards, NBCH is using other measures that some employers feel are important to their markets. If a hospital is in a town with a single-source provider, for example, some of the Leapfrog standards may not be completely applicable. The results of this research can have a noticeable impact in 2003 and beyond.

NBCH employs global strategies

The NBCH is continually looking for ways to disseminate information to local coalitions and employees. For example, NBCH is evaluating an informational patient safety checklist from eHealth Solutions Group that could be distributed via CD-ROM to local coalitions.

NBCH is also working to provide more employee-based resources through its own Web site, www.nbch.org. There is a disease-management Web page called HealthSmart.org that is geared to employees; NBCH may add patient safety checklist items to that site.

Through another of its URLs, BenefitDirections.net, NBCH disseminates articles from respected individuals across the country on topics ranging from employee benefit strategies to patient safety strategies. This site serves as a forum for educating human resource and benefit professionals who belong to local coalitions.

Getting employers involved

Creating awareness of patient safety requires employers to have "skin in the game." Local coalitions help employers get involved in improving patient safety in several key ways.

- **Promoting internal and external awareness.** Coalitions can help employers promote awareness of patient safety throughout the organization. External awareness should extend from local media to community opinion leaders. Coalitions can make the employers' voice clear, concise and provocative.
- **Coalitions are powerful motivators.** Business coalitions serve as a catalyst for motivating providers, health plans, and the public at large. Companies should build

Lorri Zipperer Returns as Focus Managing Editor

NPSF is happy to welcome back a familiar face. Beginning with this issue, Lorri Zipperer will resume her role as managing editor of *Focus*.

Lorri launched *Focus* in winter 1997 and served as managing editor until summer 2000. She also edited *Lessons on Patient Safety* (ISBN 1-57947-188-9) with Susan Cushman for the Foundation in 2001.

Lorri Zipperer is known to many people in the patient safety community through her work in the past as monitor for patientsafety-I, the NPSF's e-mail discussion list. We're glad to have her back at the helm of *Focus*.

on their organizations' mission, send consistent messages, find political leaders to support the cause—and never underestimate the power of the dollar.

- **Develop patient-safety champions.** People with a passion about patient safety come both from employers and the community. These individuals can put a face and a voice on the need for patient safety reform. The most effective champions have technical knowledge, high visibility, the ability to articulate the issue—and sustaining energy.
- **Implement solutions.** Putting the program into action is the most difficult step. Leading-edge employers can make a difference for many companies by providing concrete models and examples.
- **Measure success.** Building the methodology for measuring progress is critical to achieving improvement. The goal is to produce actionable data, and make it useful by putting it in the hands of health care purchasers. For example, California's Department of Managed Care contracted with the Pacific Business Group on Health (PBGH) for report cards.

Local business coalitions are in a perfect position to improve communication and dialogue at the local level, ensuring that patients are involved in improving and monitoring of the health care system. Employers can access information from their local coalition, NPSF, or Leapfrog. The first step is to be better informed and make tools and checklists available to employees. [NPSF](http://www.npsf.org)

Gregg O. Lehman, PhD, is president and CEO of the Washington, DC-based National Business Coalition on Health, and serves as an NPSF board member.

For more information on the Leapfrog Group, an organization launched by the Business Roundtable, see the Winter 2001 issue of Focus on Patient Safety, available online at www.npsf.org. Or visit the Leapfrog Web site at www.leapfroggroup.org.

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Plan Now to Attend 'Let's Get Results: Improving the Safety of Patients' March 12-15, 2003 in Washington, DC

On March 12-15, 2003, NPSF will convene its 5th Annual NPSF Patient Safety Congress, the latest in a series of landmark conferences focused on reducing health care errors and improving the safety of patients. The meeting, formerly known as the "Annenberg Conference," will be held at the Renaissance Washington, DC Hotel, 999 9th St NW, in Washington, DC.

To register, visit www.npsf.org and click on the 2003 NPSF Congress Link. For more information, contact Carol Lieser, CMP, at 760-770-0288 or e-mail her at clieser@npsf.org. If you are interested in being a conference exhibitor or sponsor, contact Paul Quin at 952-746-2522 or e-mail him at paulquin@hotmail.com.

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