Addressing Diagnostic Errors: An Institutional Approach

BY ROBERT TROWBRIDGE, MD, AND DOUG SALVADOR, MD, MPH, MAINE MEDICAL CENTER

Diagnostic errors have been a neglected topic in patient safety until recently but are now receiving increasing attention. These errors are defined as "a diagnosis that was:

- Unintentionally delayed (sufficient information was available earlier),
- Wrong (another diagnosis was made before the correct one), or
- Missed (no diagnosis was ever made), as judged from the eventual appreciation of more definitive information."1(p.1493)

Diagnostic errors are considered to be relatively common and to result in substantial harm to patients.1-6 A systematic review of the literature suggests that up to 8.4% of hospitalized patients are subject to a major diagnostic error.4

At Maine Medical Center (MMC), the patient safety agenda has focused on reducing patient harm and continually fostering a culture of patient safety. The institution's operational plan addressed medication safety, infection prevention, and communication errors in order to reduce patient harm. Improvement efforts have been dominated by prevention bundles, hand hygiene, team training, and the automation of the medication delivery system.

Quality Council addresses diagnostic errors

In December 2009, MMC's Quality Council met for an hour-long presentation and discussion about diagnostic errors. The statistics familiar to those immersed in patient safety—28% of reported errors involved diagnostic error and 11% of those resulted in the patient's death—were shocking to the assembled hospital executives, nursing leaders, and chiefs of service.3 Their reaction intensified when they heard stories from different MMC clinical areas of recent diagnostic errors that caused patient harm.

In the ensuing robust discussion, clinical and operational leadership acknowledged diagnostic error as a real problem that must be addressed. Several council members committed to initiating an improvement program and reporting back within 3 months. The group realized that to be successful, any improvement program needed to account for knowledge gaps among frontline providers and psychological barriers to reporting—or even admitting—diagnostic errors.

Increasing awareness of diagnostic errors

All episodes of patient harm resulting from care at MMC are now shared as the first agenda item of every Quality Council meeting. The 2009 discussion resulted in stories of harm being explicitly identified as diagnostic errors when appropriate—reinforcing among council members the importance of diagnostic error as a cause of patient harm at MMC.

“The Quality Council’s goal was to devise an anonymous system that could be integrated into the clinical workflow with a minimum of clinician inconvenience.”

Despite the Quality Council's acknowledgement that diagnostic errors contributed to many of the patient safety issues they discussed, the scope and characteristics of the local problem remained unclear. Discussions on interventions to reduce the chances of misdiagnosis-related harm made it clear that MMC needed a reliable means of establishing a baseline measurement of diagnostic failure and of assessing the effect of potential interventions on this metric. Thus, MMC's Diagnostic Error Reporting System (DERS) was designed and implemented.

Designing the error reporting system

Four themes drove the development of the DERS:

1. Institutional and physician diagnostic performance improvement depend on direct, specific feedback. Although MMC

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had made significant progress in fostering a culture of patient safety, most diagnostic errors remained “hidden, residing largely in the private memories of individual clinicians rather than becoming institutional knowledge for learning and improvement.”7(p.1886)

2. Physicians need to do the reporting. Although some patient safety issues such as medication errors may be reported by anyone involved in clinical care, recognizing diagnostic errors can be subjective and complex.8,9 Determining exactly when enough information is available for a physician to make a diagnosis, for example, requires the observer to be a diagnostic expert.

Among healthcare workers, physicians are most qualified to recognize and report a wide range of diagnostic errors on a reliable and consistent basis. Thus, physicians were made the target reporting population.

3. The system must allow busy clinicians to report errors in real time with a minimum of inconvenience. Although MMC had other institutional patient safety reporting systems in place, their level of detail and the reporting lexicon often prevented physicians from using them. The Quality Council’s goal was to devise an anonymous system that could be integrated into the clinical workflow with a minimum of clinician inconvenience.

4. Expert review of each reported case of potential diagnostic error is necessary—both to determine whether an error occurred and to identify its contributing factors. Determining and assigning the cause of error is a complex process and requires knowledge of both the terminology and the basis of diagnostic failure.1,8 Because not all physicians possess this degree of expertise, a central requirement of the system would be to identify, develop, and involve local experts.

With these guidelines in place, the DERS was designed as a collaborative effort between MMC’s Center for Performance Improvement and the leaders of the diagnostic error initiative.

Creating an error reporting process
The DERS was designed as a 2-step process:

1. The initial reporting of the error. This step is designed to be a broad and sensitive trigger to capture as many errors as possible. A “Diagnostic Error Reporting System” computer desktop icon was placed on all MMC clinical workstations to facilitate error reporting.

When accessed, the system prompts the user to anonymously submit the patient’s medical record number, the type of error (delayed, wrong, or missed diagnosis), a very brief description of the error (eg, “iron deficiency anemia for 2 years, delayed diagnosis of colon cancer”), and whether patient harm resulted. This information is recorded in a temporary database and a notification email is sent to one of the initiative leaders.

2. A detailed review of potential error cases by an expert physician reviewer. Reviewers were nominated by leadership in the participating departments and divisions and underwent training in how to recognize and classify diagnostic errors.

On assignment of a case, the reviewer completes a comprehensive examination of the potential error, including:

- A determination of whether an error occurred
- The likely contributing causes of error
- The context of care
- Misdiagnosis-related harm

Focusing on the error, not the clinician
The reviewer does not attribute the error to an individual physician, and patient identifiers are not included in the final database.

The initial error report, including a patient medical record number, is destroyed, removing all clear links to both individual patients and physicians. Then the accumulated data is fed back to institutional and departmental leadership in both aggregate and individual case form.

Getting physicians’ support
The most important step in implementing the system was obtaining physician buy-in. The error-reporting system could potentially be viewed negatively by clinicians as it could be seen to disrupt clinical workflow and make clinical performance subject to substantial scrutiny.

MMC began a small pilot program with its adult inpatient medicine service, consisting of both internal and family medicine physicians. Introductory sessions focused on the importance of diagnostic error as well as the system itself.

The outreach sessions were highly successful as the involved physicians quickly recognized the project’s potential and embraced the roles of both reporter and subject. Several other MMC departments, including critical care and...
Barcode-enabled medication administration (BCMA) uses computer technology to help prevent medication errors. In 2003, Hospital Corporation of America (HCA) began deploying BCMA technology at its 163 hospitals. BCMA adoption was a key strategy within a larger patient safety initiative.1 This article discusses two methods supporting bedside implementation that were tested at HCA: mobile carts with computers and computerized wall units in patient rooms.

In 2006, HCA administered approximately 136 million doses of medication through the BCMA system. The system generated approximately 2 million alerts, 300,000 of which were clinically significant.1

BCMA can be a valuable tool in reducing medication errors, specifically medication administration errors.2-4 BCMA provides a double check during the verification process to assist in avoiding errors involving the 5 rights:

- Right drug
- Right time
- Right patient
- Right dose
- Right route

Studies have shown a significant reduction in medication administration errors after implementing BCMA, thus decreasing the potential for adverse events resulting from these errors.2-4 BCMA also aids in improving the documentation process and reducing associated documentation errors.5

How does BCMA work?

BCMA safety technology uses a combination of computers and hand-held scanners to read barcode labels on medications and patient armbands. Each time a nurse scans a barcode label, the system checks the patient’s electronic medication record to provide vital information about the correct medication, dosage, time, and product type (oral, injectable, suppository, etc).

Two methods provide technology access at the bedside:
- Mobile carts with computers
- Computerized wall units in patient rooms

Implementing BCMA

Leadership at each HCA hospital determined its facility’s method of accessing the BCMA technology—mobile cart or wall unit—based on the layout of the patient care area, staff preference, and maintenance requirements. Although HCA used both methods of technology access, there was no definitive information on whether one method was more efficient than the other.

“Hospitals adopting BCMA technology should analyze each practitioner’s workflow in every type of care environment.”

Analyzing BCMA technology

HCA conducted an analysis to determine whether the mobile cart or the wall unit demonstrated a greater improvement in process flow. An observational investigation at 4 facilities evaluated the relative effectiveness of each technology in patient rooms.

A trained observation team spent 2 days at each HCA facility to observe:

- The main morning medication pass (about 9:00 am)
- The main evening medication pass (about 9:00 pm)
- The hand-off process from one shift to the next on a medical-surgical unit and a critical care unit

The observers also interviewed pharmacists, respiratory therapists, and nurses about each access method. The primary outcome measure initiative was improved efficiency, as evidenced by the amount of time required for nurses to administer medications.

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Comparing advantages and disadvantages

Table 1 presents a list of advantages and disadvantages identified for mobile carts. Table 2 presents the same data for wall units in each patient room. Each system was assessed using the same criteria:

- Reliability of hardware
- Availability of medication administration utensils (cups, cutters, and crushers)
- Communication between pharmacy and the patient care unit
- Security and confidentiality of patient information
- Overall nursing efficiency (the physical impact on the nurse and the number of steps required for medication administration)

Which technology is more efficient?

The analysis did not identify either mobile carts or wall units as a clearly superior method of BCMA access for nurses working in medical-surgical units. While carts increased efficiency by enabling storage of individual patients’ medications, this advantage was offset by the physical demands of manipulating a larger cart. The hospital’s medication distribution system had a greater effect on nurse efficiency than did the method of technology access.

Conversely, respiratory care providers found the mobile carts more efficient than the wall units. These highly mobile workers saw significant improvements in efficiency when they could stay logged on to the mobile device as they moved from patient to patient.

Best approach depends on workflow

The choices for technology access continue to expand. However, results of HCA’s analysis would caution against a one-size-fits-all approach to providing barcode technology access at the bedside.

Hospitals adopting BCMA technology should analyze each practitioner’s workflow in every type of care environment. Different access solutions will be needed for various units—as well as for different caregivers in the same unit.

Critical areas for assessment include:

- Medication distribution system: cart fill versus central dispensing cabinets
- Physical unit characteristics: distance, floor coverings, uneven floor surfaces, anterooms
- Patient population: average number of medications per patient at peak administration times, frequency of

Table 1: Mobile Cart Advantages and Disadvantages

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<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>• Nurses have easy access to medication administration utensils as they are usually near the automated dispensing cabinet machine.</td>
<td>• The number of carts is often insufficient to accommodate students.</td>
</tr>
<tr>
<td>• The cart provides a secure place to store medications while transporting from the medication room to the bedside.</td>
<td>• Noise from the carts awakens and scares patients during night medication rounds.</td>
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<tr>
<td>• Respiratory therapists found mobile carts easy to move between units.</td>
<td>• Batteries on the carts can die during medication rounds.</td>
</tr>
<tr>
<td>• A nurse can remain logged in to the system throughout medication rounds.</td>
<td>• Physical effort to use the cart throughout a shift fatigues the staff.</td>
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Table 2: Wall Unit Advantages and Disadvantages

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<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td>• Nurses always have access to BCMA when in the patient’s room.</td>
<td>• Nurses are more likely to put medications in their pockets to get them from the automated dispensing cabinet to the patient’s room.</td>
</tr>
<tr>
<td>• Less preparation time is needed before administering medications.</td>
<td>• Every time nurses leave a patient’s room, they have to sign out of the system and log in again in the next room.</td>
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<tr>
<td>• Equipment needs to be cleaned only at discharge.</td>
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Barcode-Enabled Medication Administration CONTINUED FROM PAGE 3
emergency medicine, have since expressed an interest in using the system.

**DERS is designed to achieve a dual purpose**

1. DERS will identify the areas in local practice in which diagnostic failure is common or associated with substantial patient harm. By highlighting these areas, whether based in specific diagnoses, presenting complaints, or context of care, departmental and institutional leaders may be able to design effective interventions to prevent such errors.

2. The system will assess the success of these interventions by estimating the initiative’s effect on rates of diagnostic failure and misdiagnosis-related patient harm. By highlighting these areas, whether based in specific diagnoses, presenting complaints, or context of care, departmental and institutional leaders may be able to design effective interventions to prevent such errors.

**References**


**Barcode-Enabled Medication Administration**

The equipment options of wall mounts and mobile carts have expanded dramatically in recent years. It is advisable to take a cautious approach to large-scale purchases before using BCMA technology in a variety of patient care environments. NPSF

**References**


2010 NPSF Patient Safety Congress Focuses on Getting Results: Solutions that Work

BY LARRY STEPNIck, MBA, SEvEryN GROUP, INC, AND ANITA SPIelman, NPSF


Pre-Congress Programs

The main conference was preceded by 2 concurrent day-long workshops and 2 half-day sessions.

- **Leadership Day**, created exclusively for C-suite and board-level attendees, focused on the role of executives in creating an organization-wide culture of accountability to improve quality and safety. The program featured a case study detailing how an organization responded to a high-volume, well-respected physician who appeared to have quality and safety problems.

- **Community Engagement from the Patient and Family Perspective** fostered ideas for including communities in patient safety work and offered participants insight into how to work with their communities’ healthcare systems. The program focused on strategies for promoting engagement at the grassroots level and for improving patient safety among diverse populations.

- **Simulation Fundamentals to Advance Your Patient Safety Agenda** introduced the uses of simulation to support patient safety and quality improvement. Interactive demonstrations allowed attendees to experience simulation-based learning.

- **Measurement Boot Camp: Strategies and Tactics for the Real World** offered an in-depth look at measurement projects for evaluating the effectiveness of patient safety efforts. This workshop gave attendees critical training and skills for measuring success and areas of improvement.

Learning & Simulation Center

This year’s Congress debuted the Learning and Simulation Center. This educational tactic featured a series of simulated clinical settings illustrating the use of medical simulation as a patient safety tool and showcasing real-world patient safety solutions. Attendees were encouraged to participate in the demonstrations, which offered diverse scenarios relevant to a broad range of healthcare areas closely integrated with the 2010 Congress core content.

The Music Paradigm—How Orchestras Mirror Complex, Dynamic Organizations

The opening plenary session was presented by Roger Nierenberg, a world-renowned conductor who uses the symphony orchestra as a metaphor for organizational behavior. Nierenberg, joined by members of the Orlando Philharmonic Orchestra, showed how individual attitudes and attributes as well as interpersonal dynamics shape the performance of the group. His presentation emphasized the critical roles of teamwork and leadership in delivering a high-quality performance.

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*The National Patient Safety Foundation invites you to participate in the webinar:*

**A NEW APPROACH FOR HEALTHCARE MEETINGS: USING SIMULATION TO ENGAGE ATTENDEES AND DRIVE TRAFFIC**

**Wednesday, October 27, 2:00pm Eastern**

**Featured Presenters:**

**Jeffrey B. Cooper, PhD**
Executive Director, Center for Medical Simulation
Professor of Anaesthesia, Harvard Medical School
Department of Anesthesia & Critical Care, Massachusetts General Hospital

**Diane C. Pinakiewicz, MBA**
President, National Patient Safety Foundation

This 60-minute webinar will provide techniques and lessons learned for taking new and innovative approaches to traditional healthcare meetings, conventions, and exhibit halls by incorporating healthcare simulation. It has been crafted specifically to benefit meeting and convention leaders and planners at healthcare organizations and associations, meeting organizers, and exhibit hall managers. Opportunities for technical assistance will also be discussed.

Register by visiting: [www.npsfstore.com/categories/Webinars/](http://www.npsfstore.com/categories/Webinars/)
As Nierenberg demonstrated, an effective leader doesn’t attempt to dictate every aspect of performance, but guides individuals to maximize their capabilities and helps the various functions work in harmony. Following Nierenberg’s presentation, attendees discussed the implications for the healthcare industry, including:

- **Importance of teamwork.** The presentation demonstrated why teamwork is critical, yet difficult to achieve in real-world hospital settings.
- **Perils of micro-management.** Overly controlling leadership conveys a lack of trust and risks creating a self-fulfilling prophecy. Employees who are micro-managed become disengaged from their work and may lose skills over time.
- **Helping others see the bigger picture.** As in an orchestra, healthcare professionals can feel so busy that they lose themselves in their jobs. They have no time to stop, breathe, or feel emotions, and instead follow a pre-written script. Overworked individuals may need support from an effective leader to elevate their sights beyond their own tasks, without interfering with their work.
- **Achieving a state of flow.** A combination of talent, dedication, and leadership can enable an organization to achieve a state of flow where everything works smoothly and easily.

## Lucian Leape Institute Town Hall Meeting Addresses Medical Education

Members of the Lucian Leape Institute (LLI) and invited guests discussed how medical education needs to be reformed to advance patient safety. Participants reviewed and discussed the recommendations in a recently published LLI white paper.1

The discussion centered on reforming medical education, including the need for:

- **Simultaneous reform across all professions.** Necessary reforms in medical education and healthcare delivery systems should address all healthcare professions—not just physicians.
- **Speed.** Many industries take 30 to 40 years to embark on major transitions; panelists emphasized the need to compress this timeline.
- **Moving beyond teaching facts to teaching competencies.** Advancing patient safety requires rethinking the basic skills and knowledge taught in medical school, and increasing the emphasis on competencies such as interpersonal skills and teamwork.

- **Managing fatigue and handoffs.** Lack of supervision and resident fatigue contribute to safety problems, but arbitrary efforts to limit hours may inadvertently generate new opportunities for error by decreasing continuity of care.

## Exploring the Frontiers of Science and Human Potential

Mae Jemison, MD, a doctor, engineer, teacher, and the first African-American woman astronaut, offered her insights on patient safety:

- **The first (but not ultimate) responsibility.** Safety is the first responsibility of healthcare providers—that is, to do no harm. But safety does not represent the ultimate objective of patient care.
- **A greater responsibility in health care.** Because patients typically have less information about and control over the risks of health care than do astronauts about the risks of space travel, healthcare providers have a different, broader set of safety responsibilities.
- **Need for safety priorities.** The space shuttle program uses failure modes and effects analysis to evaluate and manage the risk that a particular system or operation will fail. The expected outcomes from the failure can be used to assign a criticality of risk to each subsystem, and to create priorities.

## LLI Town Hall participants:

- **Lucian L. Leape, MD**
  Lucian Leape Institute Chair and Adjunct Professor of Health Policy, Harvard School of Public Health

- **Susan Edgman-Levitan, PA**
  Executive Director, John D. Stoeckle Center for Primary Care Innovation, Massachusetts General Hospital

- **Gary S. Kaplan, MD, FACPME**
  Chairman and CEO, Virginia Mason Medical Center

- **Dennis S. O’Leary, MD**
  Dean, University of Central Florida School of Medicine

- **Deborah German, MD**
  Assistant Dean for Curriculum, Vice Chair for Quality and Safety, Co-executive Director of the Institute for Patient Safety Excellence, and Curriculum Director of the Master’s in Patient Safety Leadership Program at the University of Illinois at Chicago College of Medicine

- **David Mayer, MD**
  Associate Dean for Curriculum, Vice Chair for Quality and Safety, Co-executive Director of the Institute for Patient Safety Excellence, and Curriculum Director of the Master’s in Patient Safety Leadership Program at the University of Illinois at Chicago College of Medicine
Role of complacency and organizational issues. Many major safety events have little or nothing to do with poor engineering design, but stem from complacency and issues within the organization.

Focusing on what can be controlled. Sometimes the best strategy is to focus on what one can control. While working in the Peace Corps, Dr. Jemison’s job responsibilities included keeping volunteers—many of whom rode motorcycles—safe. She instituted an iron-clad rule that any volunteer caught riding without a helmet would be sent home, with no second chance.

Technology as tools, not solutions. Technologies represent tools, not solutions. Whether they help depends on how they are designed and used.

No substitute for wisdom and judgment. Data and information do not equate to knowledge. The key is to turn information into knowledge and to use that knowledge wisely.

Need for whole-brain thinking. Ensuring safety requires the use of both sides of the brain—the technical/analytical (left) side and the artistic (right) side.

Importance of accountability. Healthcare professionals must speak up and hold each other accountable for their actions.

The Faces of Medical Error … From Tears to Transparency
Attendees viewed the award-winning film The Story of Lewis Blackman, which chronicles the series of medical mistakes that led to a 15-year-old boy’s death. The film, developed by Lewis’s mother Helen Haskell in collaboration with leaders at the University of Illinois at Chicago, aims to help healthcare professionals learn from errors and learn how to respond after an error.

The Story of Lewis Blackman highlights a broad array of patient safety problems that afflict many hospitals, including:

- Inadequate night and weekend care
- Inadequate communication across levels and professions in the organization
- Reluctance to ask for help. The culture of medicine, particularly in teaching hospitals, leaves residents and others reluctant to ask for assistance.
- Lack of accountability
- Importance of listening to the family. Family members may recognize nuanced changes that a caregiver may not notice.
- Importance of considering all signs collectively. Lewis experienced multiple symptoms, each of which was ignored or discounted. No one took responsibility for considering the totality of the symptoms.
- Failure to consider worst case. Like members of the space shuttle program, healthcare professionals need to consider and test for the worst-possible outcome.
- Tendency for premature close. Healthcare professionals should avoid confirmation biases by conducting the tests needed to confirm or rule out suspected diagnoses.
- Difficulties second guessing. The culture of medicine makes it difficult for healthcare professionals to consider the possibility that an initial diagnosis and care plan may be wrong.
- Lack of transparency and disclosure. After Lewis died, no one from the hospital expressed any concern or indication that something had gone wrong.
- Need for patient-activated response team. This case highlights the need for patients and families to be able to mobilize an experienced team if they feel there is an urgent situation and/or that they are not getting the attention they need.

The 2010 NPSF Annual Congress reinforced the need to focus on critical work in patient safety as healthcare reform begins to unfold. Without this focus, the industry will not be able to realize the Institute of Medicine’s aims for safer, more efficient, equitable, timely, and truly patient-centered health care. NPSF

Save the Date!

Be There. Be Accountable. Be part of the Patient Safety Community!
To learn more, visit www.npsf.org.
NPSF Launches Professional Learning Series

NPSF is pleased to announce the Professional Learning Series, a program of monthly educational webcasts offered to healthcare professionals nationwide and designed to deliver in-depth discussions on the most pressing patient safety topics, presented by distinguished faculty. Attendees will have the opportunity to share best practices, collaborate with colleagues in patient safety, and chat live with expert faculty during each webcast.

Continuing education credits are available for physicians, nurses, pharmacists, and physician assistants. The registration fee allows for an unlimited number of attendees to participate per connection. Continuing education credits are available to multiple attendees per line.

The upcoming webcast is “Improving Medication Safety and Patient Self Management: Lessons from Health Literacy Research” on Thursday, October 21, 2010, at 2:00pm Eastern Time. The featured speaker is David W. Baker, MD, MPH, Michael A. Gertz Professor of Medicine, Chief of the Division of General Internal Medicine, and Director of the REACH Practice-Based Research Network at the Feinberg School of Medicine, Northwestern University.

Patient Safety Awareness Week: March 6–12, 2011

Patient Safety Awareness Week (PSAW) is an annual NPSF-led education and awareness-building campaign for healthcare safety. Each year, organizations internationally take part in this program by prominently displaying the NPSF campaign logo and promotional materials within their facilities and providing NPSF educational toolkits to hospital staff. For the first time, NPSF is extending the sale of toolkits to all healthcare organizations.

Toolkits for 2011 include valuable resources for increasing awareness of patient safety and for implementing a successful PSAW campaign, with a special focus this year on the areas of reducing hospital readmissions and understanding cultural competency. Be a part of the celebration and commitment to safe health care by encouraging and strengthening collaboration between patients, families, and healthcare providers.

NPSF is the founding sponsor of Patient Safety Awareness Week and has led the event since 2002, annually creating a visible campaign theme and robust toolkits specific to vital patient safety issues.
Apply for the 2011–2012 Patient Safety Leadership Fellowship

Continuing a ten-year legacy, the AHA-NPSF Patient Safety Leadership Fellowship offers a unique combination of leadership development, action learning, and translation of the latest tools in patient safety science and performance improvement.

Each year the fellowship supports a diverse, cross-disciplinary group of senior and mid-level practitioners focused on designing reliable processes and accelerating culture change in their organizations.

The fellowship is a collaborative effort of the American Hospital Association and the National Patient Safety Foundation (NPSF), in partnership with the National Association of Public Hospitals and Health Systems (NAPHS) and Kaiser Permanente, continues to provide opportunities for safety-net hospitals to participate in the Patient Safety Leadership Fellowship through the Patient Safety Initiative at America’s Public Hospitals. Launched in October 2009 with generous funding from the Kaiser Permanente Community Benefit Fund, the Initiative serves to support public hospitals’ patient safety activities and the communities they serve. As one of the many benefits provided to participating organizations, three individuals were awarded scholarships to participate in the 2010–2011 Fellowship Class. Organizations represented include: Harborview Medical Center (Seattle, WA), Metropolitan Hospital Center (New York, NY), and Lincoln Medical and Mental Health Center (Bronx, NY).

NPSF Welcomes 2010–2011 Fellows

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<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Title</th>
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<tr>
<td>Jason Adelman, MD, MS</td>
<td>Montefiore Medical Center</td>
<td>Patient Safety Officer</td>
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<tr>
<td>Pauline Arnold, MSN, MSA, RN, HACP</td>
<td>National Patient Safety Foundation</td>
<td>Executive Director, Quality and Safety Outcomes</td>
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<tr>
<td>Julie A. Bastien, MBA</td>
<td>University of Miami School of Medicine</td>
<td>Senior Director, Programs</td>
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<tr>
<td>Jacquelyn M. Billingslea, MSA, RN</td>
<td>Howard University Hospital</td>
<td>Director of Patient Safety</td>
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<tr>
<td>Darlene M. Booth</td>
<td>University of Louisville</td>
<td>Clinical Risk Manager</td>
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<tr>
<td>Mary Beth Bowen, MSM</td>
<td>Mounted Medical Center</td>
<td>Vice President, Nursing</td>
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<tr>
<td>Ross Ehmantraut</td>
<td>Harborview Medical Center</td>
<td>Patient Safety Officer</td>
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<tr>
<td>Scott J. Ellner, DO, MPH</td>
<td>Saint Francis Hospital and Medical Center</td>
<td>Director of Surgical Quality</td>
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<tr>
<td>Rosemarie Fernandez, MD, FACEP</td>
<td>Wayne State University School of Medicine</td>
<td>Assistant Professor</td>
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<tr>
<td>William R. Griffiths, RN, MSHS</td>
<td>Oneida Healthcare Center</td>
<td>Manager, QM/UM Department</td>
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<tr>
<td>Daniel J. Hanson, MD, FHM</td>
<td>Virginia Mason Medical Center</td>
<td>Hospital Medicine Service Director</td>
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<tr>
<td>Katherine Herrmann, RN, HEM, CPHQ</td>
<td>Henry Ford Health System</td>
<td>Clinical Quality Facilitator</td>
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<tr>
<td>Jason Hickok, MBA, RN</td>
<td>Hospital Corporation of America</td>
<td>AVP, Patient Safety and Infection Prevention</td>
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<tr>
<td>Kamal Jamal, MPH</td>
<td>The Valley Hospital</td>
<td>Director, Cardiac Services</td>
</tr>
<tr>
<td>Pranish Kantesaria, PharmD</td>
<td>Riley Hospital for Children</td>
<td>Director of Pharmacy</td>
</tr>
<tr>
<td>Ami Keatts, MD, FACOG</td>
<td>New Rockingham Memorial Hospital</td>
<td>OB/GYN Physician</td>
</tr>
<tr>
<td>Thomas Macaluso, MD</td>
<td>Memorial Healthcare System</td>
<td>Director of Medical Affairs</td>
</tr>
<tr>
<td>Manu K. Malhotra, MD, FACEP</td>
<td>Henry Ford Health System</td>
<td>Director of Operations, Department of Medicine</td>
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<tr>
<td>Abdul S. Mondul, MD</td>
<td>Lincoln Medical and Mental Health Center</td>
<td>Patient Safety Officer, Associate Director</td>
</tr>
<tr>
<td>Alison Patterson, RN, MS</td>
<td>MetroHealth Medical Center</td>
<td>Director of Quality and Outcomes Management</td>
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<tr>
<td>Jennifer Ritz, RN</td>
<td>Holmes Regional Medical Center</td>
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<tr>
<td>Tracey A. Ross, EdD, CST</td>
<td>Lancaster General Hospital</td>
<td>Patient and Employee Safety and Quality Officer</td>
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<tr>
<td>Robert G. Salter, MTS, MHR</td>
<td>Rush University Medical Center</td>
<td>Director, Employee Health and Safety</td>
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For more information or to request a 2011–2012 application, visit www.ahafellowships.org or contact the Fellowship team at 312.422.2931. NPSF

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