

Massachusetts Coalition
for the
Prevention of Medical Errors

Two New Statewide Patient Safety Initiatives Announced

MHA is working with the Massachusetts Coalition for the Prevention of Medical Errors to promote statewide collaborative improvement programs for two patient safety initiatives:

- **Reconciling medications**, a medication safety practice to eliminate errors of communication and information transfer at patient handoffs, such as at admission to hospital.
- **Communicating critical test results**, developing strategies for timely and reliable communication of critical test results to the clinician who can take action.

Topic selection: proactive risk assessment statewide

The selection of the two topic areas resulted from a comprehensive assessment of priorities among healthcare professionals statewide. The selection process involved the following steps:

- a) An *open-ended call for patient safety topics of greatest concern* (mailed to all hospital CEOs and QI Directors along with MA Coalition members and a sample of clinicians and other caregivers)
- b) A *vote* by members of the MA Coalition and additional hospital representatives from across the state on preferences among the top 10 topics identified in the open-ended survey
- c) A *compilation of available data* for each topic concerning a) its importance (frequency, severity), b) the availability of a Best Practice, c) evidence of effectiveness behind each practice, and d) feasibility of implementation in all hospitals in the Commonwealth
- d) Review of the data and selection of the two practices by a 17-person *Advisory Group* representing a cross-section of hospital-based physicians, nurses, pharmacists, and quality improvement staff from large and small hospitals across the state, along with representatives from various other interested groups (regulators, associations, liability insurers)

The two practices, Reconciling Medications and Communicating Critical Test Results, were the choices of the Advisory Group because of their potential for making substantial improvements in patient safety. They address fundamental issues in safety: communication, teamwork, and information transfer. Their importance resonated strongly with representatives from hospitals large and small statewide.

Coalition support

To facilitate participation in these initiatives, the Coalition will offer a wide range of support to hospitals implementing these recommended practices:

- a) Detailed definitions of the practices which have been developed by Consensus Groups, including strategies for successful implementation provided by experienced teams
- b) Statewide collaboratives at minimal cost with two meetings/year for improvement teams; these will provide specific implementation guidance, presentations by experts and hospital teams that have successfully adopted the recommended strategies, and networking opportunities

- c) Implementation worksheets to assist in identifying planning needs, projected tasks and timelines, and spreadsheets for estimating required resource utilization and long-term benefits from error reduction and workflow efficiencies
- d) Toolkits to support implementation including sample forms, policies and procedures, measurement protocols, risk assessment tools (process flow charts, FMEA examples), staff and patient education materials, case studies with examples of cycles of change, and copies of research articles
- e) Worksheets and examples to support utilization of this activity for JCAHO and MHQP reporting requirements
- f) Follow-up support through status reporting and opportunities for consultation with other healthcare providers engaged in specific implementation components
- g) A public campaign to promote consumer awareness and patient education
- h) Outreach to caregivers in ambulatory settings (PCPs, clinics, rehab, SNFs) to address crucial information transfer issues for medications and critical test results and to improve continuity of care

Background

Funding for the two new initiatives is being provided as part of a three-year federal grant from the Agency for Healthcare Research and Quality (AHRQ) to the Massachusetts Department of Public Health (DPH). The grant also supports an evaluation and enhancement of the Massachusetts system for mandatory reporting of medical errors (MARS), including a survey on views of hospital executives concerning MARS and patient disclosure preferences, programming modification of the MARS coding system to facilitate analytical needs, and a survey of recently-hospitalized patients to evaluate their perceptions and experiences of adverse events.

MHA's and the Coalition's component of the grant is to encourage implementation of best practices for improving safety through voluntary collaboratives. The program uses Consensus Groups and improvement collaboratives to develop, refine, and implement practices for each topic area, building on the Coalition's previous successes with release of Best Practices addressing medication safety and restraint and seclusion use.

Lucian Leape, MD, adjunct professor of health policy at the Harvard School of Public Health and one of the original consultants to the MHA Medication Error Prevention Project, is serving as clinical director for the Coalition's work under this grant. Dr. Leape has directed research on the causes and prevention of adverse drug events and other medical errors, and has been a leading advocate of the non-punitive systems approach to the prevention of medical error.

Timeline:

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|--|--------------------------|
| a. Select topics | March, 2002 |
| b. Consensus Groups convened | April-June, 2002 |
| c. Consensus Groups recommend improvement strategies | April-December, 2002 |
| d. Improvement team collaboratives begin | March-May, 2003 |
| e. Support for implementation | Throughout 2003 and 2004 |
| f. Assess impact | Fall, 2004 |

Reconciling Medications:

A Medication Safety Initiative

sponsored by the

MA Coalition for the Prevention of Medical Errors

The Massachusetts Coalition for the Prevention of Medical Errors, together with the Massachusetts Hospital Association, is embarking on a new patient safety initiative designed to reduce medical errors by reconciling medication orders at admission. *Reconciling medications* is defined as the process of comparing the patient's list of current medications against the physician's admission, transfer, and/or discharge orders. Discrepancies are brought to the attention of the physician and, if appropriate, changes are made to the orders. Any resulting changes in orders are documented.

Need: Medication errors are one of the leading causes of injury to hospital patients, and chart reviews reveal that over half of all hospital medication errors occur at the interfaces of care. Medication errors that can be prevented by adopting the reconciling process at admission include errors associated with failure to continue needed home medications while in the hospital, failure to discontinue contra-indicated home medications, failure to resolve discrepancies in dosages or route, and missed or duplicate doses resulting from inadequate records of frequency and last administration at transfer.

Discrepancies in patient medication orders have been documented by many hospitals. A multidisciplinary check of medication orders for pediatric cancer patients revealed that 42% of the orders being reviewed needed to be changed [Branowicki 2002]. Another study, also of pediatric cancer patients, revealed variances between medication orders and information from patient/guardian or prescription labels on the container 30% of the time. A home medication omitted from admission orders was the most common error and incorrect dosages ordered in admission orders also exceeded errors attributable to errors in information obtained from the patient/family [Billman 2002]. Inaccuracy of patient/family provided information on medications, however, has also been noted as an underlying cause of several recently-reported medication errors with serious adverse outcomes.

Potential for impact: The reconciling process has been demonstrated to be a powerful strategy to reduce these errors: *A series of interventions, introduced over a seven month period, successfully decreased the rate of medication errors by 70% and reduced adverse drug events by over 15%* [Rozich, Resar 2001]. In another study, the utilization of pharmacy technicians to initiate the reconciling process by obtaining medication histories for the scheduled surgical population reduced potential adverse drug events by 80% within three months of implementation [Meisel 2002].

A successful reconciling process also reduces work and rework associated with the management of medication orders. After implementation, nursing time at admission was reduced by over 20 minutes per patient. Establishing a systematic approach to reconciling and then carrying it through the hospitalization also reduced pharmacist time at discharge by over 40 minutes [Rozich, Resar 2001].

Project Leadership, Consensus Group: Clark Fenn, Vice President of Management Services at Holyoke Hospital and Frank Federico, Loss Prevention Specialist from the Risk Management Foundation, are leading this initiative, supported by Gina Rogers from the Coalition. Members of the *Inpatient Medication Error Prevention Consensus Group* that supported the MHA/Coalition Medication Error Prevention Project's 1999 Best Practice recommendations form the core of the Consensus Group. Together with several new participants, the group now includes representatives from 22 Massachusetts hospitals, covering all geographic regions of the state, teaching and non-teaching hospitals, and a cross-section of physician, nursing, pharmacy, and QI/risk management/patient safety representatives. A Consensus Group list is attached.

Implementation Strategies: A working set of Best Practices addressing reconciling medications at admission is attached, including a matrix identifying implementation strategies adopted by different hospitals.

Contact: For more information, contact The Massachusetts Coalition for the Prevention of Medical Errors Phone: (781) 272-8000; Email: macoalition@mhalink.org

Reference Articles

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Reconciling Medications

Recommended Practices

(as approved at 11/12/02 Consensus Group meeting)

Core Recommendation:

Adopt a systematic approach to reconciling medications at admission

Reconciling medications is a systematic process that develops an accurate, up-to-date medication list for patients at admission, and then compares that list against the physician's admission orders. Discrepancies are brought to the attention of the physician and, if appropriate, changes are made to the orders. Any resulting changes in orders are documented. The process is designed to promote communication and information transfer at patient handoffs, a well-known opportunity for error.

Policies

- 1. Assign primary responsibility for reconciling to someone with sufficient expertise, within a context of shared accountability (the ordering physician, RN, and pharmacy work together to achieve accuracy)*
- 2. Reconcile patient medications within specified time frames*
- 3. Develop clear policies and procedures for the steps in the reconciling process*

Technique

- 4. Adopt standardized form for reconciling medications**
- 5. Place reconciliation form in consistent, highly-visible location in patient chart*
- 6. Provide access to drug information and pharmacist advice at reconciling*
- 7. Improve access to complete medication lists at admission*

Support & Maintenance

- 8. Provide orientation and ongoing education on procedures for reconciling medications to all healthcare providers*
- 9. Provide feedback, ongoing monitoring* (within context of non-punitive learning from mistakes/near misses)

*Includes both electronic and paper-based forms

Communicating Critical Test Results

A Patient Safety Initiative

sponsored by the

MA Coalition for the Prevention of Medical Errors

The Massachusetts Coalition for the Prevention of Medical Errors together with the Massachusetts Hospital Association is embarking on a patient safety initiative to promote timely and reliable communication of critical test results to the clinician who can take action.

The scope of the project is being defined broadly to include all test values where delays would result in serious adverse consequences for patients. The recommendations will address the communication of findings from laboratory, cardiology, radiology, pathology, and other diagnostic areas to inpatient, emergency and ambulatory settings.

Need: Studies have shown that delays in treatment of critical results are common. A retrospective study of 1,938 critical laboratory test results showed a median time interval until appropriate treatment was ordered of 2.5 hours, with a delay of greater than five hours in over one-quarter of the cases [Kuperman 1998]. Another study found that only 51% of “life-threatening” laboratory results were treated appropriately [Tate 1990]. Such treatment delays clearly have serious potential adverse consequences since they cover the most critical conditions (e.g. hypoglycemia, very low platelet counts, out-of-range PTT/INR values).

Problems in communication of critical test results outside the inpatient setting are also receiving increased attention. Concern over the incidence of unreported abnormal EKGs has recently been expressed by the Patient Care Assessment Committee of the Massachusetts Board of Registration in Medicine. Follow-up of abnormal cancer screening tests is also a serious issue. Data from the Risk Management Foundation show that one-quarter of diagnosis-related malpractice cases were attributable to failures in the follow-up system for critical test results.

Potential for impact: Improving communication systems and strategies can reduce adverse events that result from delays in communicating critical test results. For example, implementation of an alerting system to automatically notify the responsible provider via the hospital’s paging system decreased the mean time until appropriate treatment was ordered by 11% [Kuperman 1999]. Electronic mail alerts have been shown to reduce time to adjust nephrotoxic or renally excreted medications [Rind 1994]. The potential for reducing ADEs by use of technology has been assessed to exceed 9% [Bates 1994].

Project Leadership, Consensus Group: Dr. David Bates, Chief of General Medicine, Brigham & Women’s Hospital, chairs the consensus group, supported by Doris Hanna from the Coalition. The Consensus Group includes physicians, radiologists, cardiologists, laboratory managers and directors, nurses from administration, practice and education, and QI/risk management/patient safety representatives. The group represents 23 Massachusetts hospitals, all geographic regions of the state and both teaching and non-teaching hospitals. The Consensus Group has convened four times since June 2002, with another meeting scheduled for December. A Consensus Group list is attached.

Best Practice Domains: A draft listing of topic areas and patient safety strategies under this initiative is attached. The issues being addressed include:

- What test results represent dangerous values and hence require immediate response;
- Who should the test results go to (ordering physician, or the covering physician, designated as responsible, with forcing functions at the point of test order to capture complete contact information);
- Who should the results go to when primary call-back contact is not available (time limits for initiating further contacts, elements of a successful call system, strategies for communicating results after hours/after patient discharge, fail-safe back-up plan);
- How should responsible practitioner(s) be notified: what communication modalities work best (phone/beeper/pager/text pager/fax/computer alerts), strategies for receipt acknowledgement and tracking systems;
- What information should be included when results are communicated?
- How to improve communication among the clinical care team responding to a critical test result?

- How to build an infrastructure to enhance timely and reliable communications and support clinicians in providing safe care

Contact: For more information, contact Doris Hanna, MA Coalition for the Prevention of Medical Errors (Phone: 781-272-8000 X385; Email: dhanna@mhalink.org)

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- AHRQ #43, Chapter 42.4 Notifying patients of abnormal test results.

Communicating Critical Test Results

Domains and Best Practice Recommendations

Developing best practices to promote timely and reliable communication of critical test results (lab, ECG, radiology, pathology and other tests) to the clinician who can take action

- 1. Define what test results require accelerated/timely communication**
- 2. Identify who the results should go to**
- 3. Identify who the results should go to when the responsible practitioner is not available**
- 4. Identify how to notify the responsible practitioner(s) (what communication system works best)**
- 5. Improve communication between individuals on clinical care team responding to critical test results (process and protocols)**
- 6. Decide what information should be included as a minimal data set to be communicated to the responsible person**
- 7. Address organizational issues to improve communication of critical test results**
- 8. Partner with patients/family in the communication about critical (vital) test**