

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 (the Coalition) together with the Massachusetts Hospital Association (MHA) has embarked on a patient safety initiative to promote timely and reliable communication of critical test results to the clinician who can take action. Critical test results are any values/interpretations where delays in reporting may result in serious adverse outcomes for patients.

This topic was selected by a multi-stakeholder advisory group convened by the Coalition and the MHA in March 2002. The topic resonated with caregivers, addressing patient safety issues they recognized as significant hazards encountered in everyday practice, and tangible evidence of reduced errors at several institutions implementing effective safety practices. Solutions required addressing fundamental issues of communication and teamwork at the interfaces of care.

Need: Delays in communicating life-threatening test results to the responsible physician are widely recognized as a serious problem. 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, and out-of-range PTT/INR values).

Problems in communication of critical test results in the ambulatory area are receiving increased attention. Concern over the incidence of unreported abnormal EKGs was expressed by the Patient Care Assessment Committee of the Massachusetts Board of Registration in Medicine (2000). Thirty-three percent of women with abnormal Papanicolaou (Pap) smears are “lost to follow-up” (Marcus, 1992). In one study, 31% of women with abnormal mammograms do not receive follow-up care consistent with well-established guidelines (Haas, 2000), while in another 36% did not receive appropriate and timely follow-up (Poon, 2004). In addition 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%. The structured alerting system was found to reduce the mortality rate of patients with critical test results by half (13% in the control group vs. 7% in an intervention group). [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].

Safe Practice Recommendations: The Coalition convened a Consensus Group in June 2002 to identify a set of safe practice recommendations and accompanying implementation strategies. This multi-disciplinary group was led by Dr. David Bate, Chief of General Medicine, Brigham & Women's Hospital and supported by Doris Hanna from the Coalition. It included representation from physicians, nurses, radiologists, cardiologists, laboratory managers and directors, and representatives from administration, practice, education, patient safety and quality departments from a cross-section of hospitals across the state.

The focus of the project was defined broadly. The Consensus Group addressed issues associated with communicating critical tests in the inpatient, emergency, and outpatient settings. The types of test results/interpretations covered include laboratory, radiology, cardiology, pathology, and other diagnostic tests. The Consensus Group reviewed the literature and developed a set of safe practices to promote timely and reliable communication of critical test results. These recommendations can be found in their entirety at www.macoalition.org/intitiatives. The practices include: agree on which tests are categorized as "critical", communicate the result directly to the responsible provider who can take action, require acknowledgement of the receipt of the test results, have a clear backup system with clear delineation of when to escalate, use central call systems to coordinate call schedules, use the same policy across domains, and other recommendations addressing supporting policies and infrastructure.

The original recommendations were released in May 2003 and the Coalition then convened a statewide Communicating Critical Test Results Collaborative to promote their adoption. Hospitals working on the project met together four times (May and November 2003 and March and September 2004). Using rapid-cycle improvement strategies, participating teams tested implementation strategies, used common measures to monitor their progress, and shared successful strategies and lessons learned in team reports at the Collaborative meetings and over a list serve. Learnings from the Collaborative, as derived from the reports of participating teams and from an evaluation survey, were then used to refine the original safe practice recommendations.

Implementation Tools: A set of supporting materials was also collected to promote implementation of the safe practices. This includes a starter set of critical test values/interpretations, sample FMEA's, policies, successful implementation strategies, implementation worksheets, and references. In addition, a set of measurement protocols and accompanying excel spreadsheets for collecting data and generating graphs of the core evaluation measure – Percent of tests meeting the time targets – has been made available.

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A full reference list is available on request