



Beth Israel Deaconess
Medical Center



A teaching hospital of
Harvard Medical School



Official hospital of the
Boston Red Sox

Paperless is Powerful for Medication Reconciliation Process

Larry A. Nathanson, M.D., Richard Wolfe, M.D., Jayne Carvelli-Sheehan, MSN, RN, C.,
Shelley Calder RN, MsN, Kirsten Boyd, RN, MHA, Jason Laviolette

Departments of Emergency Medicine and Health Care Quality
Beth Israel Deaconess Medical Center, Boston, MA

Introduction

The Joint Commission requires that hospitals “Accurately and completely reconcile medications across the continuum of care to further advance patient safety.” Our charge was to begin with a paper based method of complying with the Medication Reconciliation requirement and transition to an all electronic mechanism integrated with the electronic health record.

A paper process was created in May 07, and a resource intensive medication reconciliation form was implemented to collect a full list on all patients. At times this process could take up to 30 minutes to collect all history from all sources to create a complete list. Although this system was in place we still encountered inconsistency in the completeness of the form and process, which further led to physicians re-investigating medication history, adding to care time. We investigated the integration of the process with our current electronic record and ultimately created an entirely paperless process which provided for a near 100% daily compliance for all discharged patients.

BIDMC's Electronic Medication Reconciliation System

Medication Reconciliation: RN Completes

1) ED Dashboard: Medication Option

2) Importing Medications from webOMR or prior ED visit

3) Example of importing select meds from webOMR

4) Medication List displaying imported meds. (Route and dose cannot be edited)

5) Add other medications (These can later be edited)

Medication Reconciliation: MD Completes

6) MD Completes Med Reconciliation

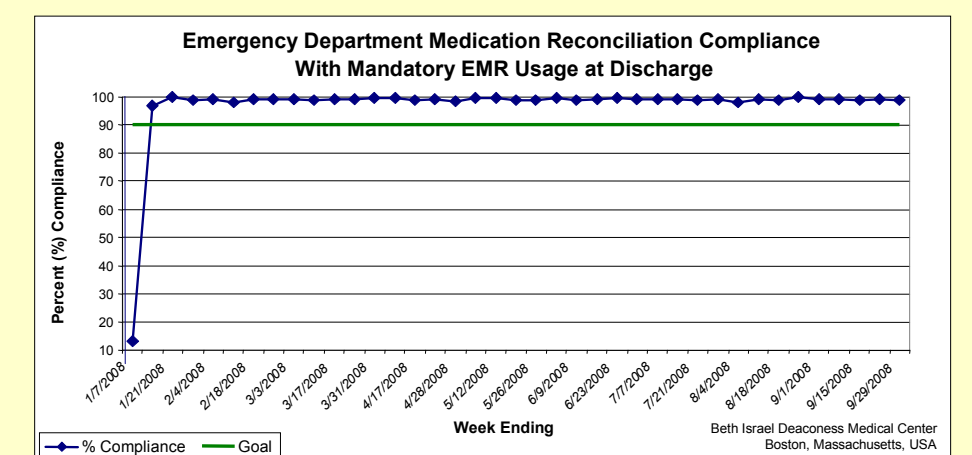
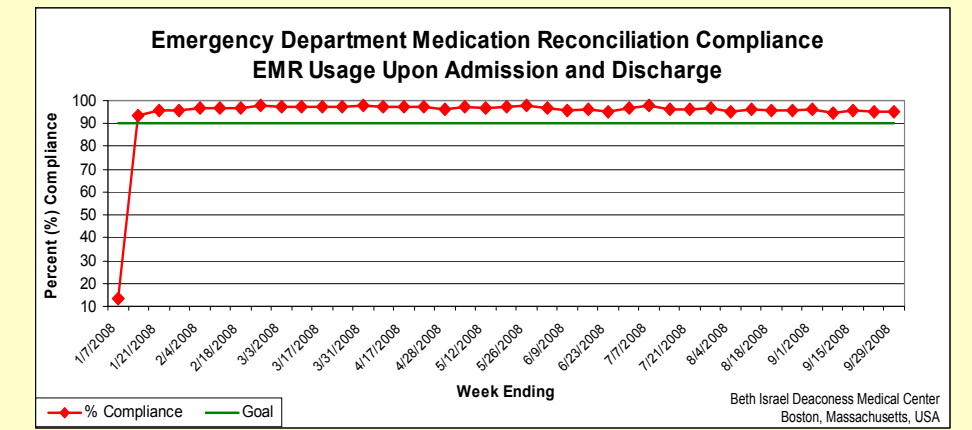
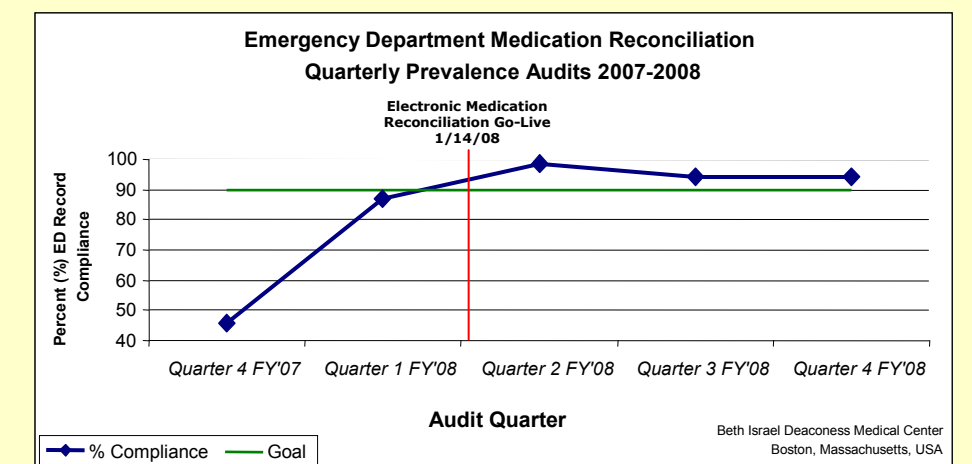
7) MD Completes Note

8) MD Signs Discharge Plan

9) At Discharge, the Patient is given:

- New Prescriptions
- Discharge Instructions
- Two Copies of their Medication List (One for self and one for next provider of care.)

Results



Conclusions

- Hospital wide commitment to change is essential.
- Development of an electronic program by clinicians, understanding of work flow is critical. Our strong partnerships between clinical education staff and the ED Dashboard Development staff led to a user-friendly application that obtained buy-in from many initially resistant staff.
- Technology is meant to enhance process, however, ultimate source of accuracy remains with the patient.
- By creating and implementing a mandatory electronic medication reconciliation dashboard, the process was simplified and folded into existing work flow and provided for a near 100% daily compliance for all discharged patients.
- Ongoing challenges remain between various information platforms. Efforts are underway to build interfaces to strengthen the sharing of patient related data (medications, problems, allergies, immunizations, etc...) between service areas.

Aim

- To increase medication reconciliation compliance in the emergency department to 90% or greater.

Measures

- Quarterly Prevalence Audit** of all patient records for a 24 hr. period. (In association with the whole of BIDMC)
- Completeness of medication list for **ALL patients** on a daily basis. (Patients entered through Emergency Department.)
- Discharged patients** with a completed medication reconciliation process.

The Transition to Full Electronic Medication Reconciliation

Creating the System

- Identified our existing ED information system (“ED Dashboard”) as appropriate vehicle to incorporate electronic medication reconciliation system. The use of an existing electronic system helped to streamline process and ensure compliance.
- Enhanced ED Dashboard to allow for electronic collection of medication lists.
- Integration of FirstDataBank medication formulary into the application.
- Optimized software for data entry via tablet PCs to encourage bedside collection of data.
- Added functionality for users to pre-populate patients’ medication list with data collected during previous visits. This list is verified with patient and necessary changes are made at each new encounter.
- Limited free text area ensures compliance with TJC and other regulatory bodies.
- Added a stopgap at completion of medication list collection. User must electronically indicate that the list is complete (to the best of their ability), therefore reducing likelihood of using list prior to completion.
- Developed a forcing function where resident physicians were unable to discharge patients unless the medication reconciliation process was completed.

Transitioning the Process

- Allowed 2 week phase-in period for staff to transition from paper to fully electronic system.
- Trained all staff in new electronic system and assign roles to all steps of medication reconciliation process.
- Collaborated with inpatient units as they are still using a paper version.
- Added a comments flag for staff to express any difficulties experienced or suggestions for enhancement of the program.
- Reviewed daily electronic compliance record on a weekly basis. Real-time audits done for accuracy.
- Manually reviewed both paper and electronic records for all patients seen in the ED in a specified 24h period.

Future Opportunities

- System will eventually allow for improved continuity of care with Outpatient Clinician through access to medication list via integrated platform in Electronic Record. Outpatient clinician will have more information on ED visit to allow for med reconciliation in follow up visits.

Acknowledgements

- BIDMC acknowledges Forerun and Intel for their support in the development of the ED Dashboard and med. rec. integration process.

