

## *Prevention of Adverse Drug Events*

**GOAL: PREVENT ADVERSE DRUG EVENTS (ADEs) BY IMPLEMENTING MEDICATION RECONCILIATION.**

### **BACKGROUND**

- ADEs are injuries attributable to the use of medications.
- Hospitalized patients who experience an ADE are almost twice as likely to die as those without an ADE.
  - Classen DC, Pestotnik SL, Evans RS, Lloyd JF, Burke JP. Adverse drug events in hospitalized patients. Excess length of stay, extra costs, and attributable mortality. *JAMA*. 1997;277:301-306.
- Death certificate data showed that almost 1,200 hospital deaths in 1993 were due to medication errors. In addition, the incidence of such deaths had more than doubled since 1983.
  - Phillips DP, Christenfeld N, Glynn LM. Increase in U.S. medication-error deaths between 1983 and 1993. *Lancet*. 1998;351:643-644.
- ADEs account for 6.3% of malpractice claims.
  - Rothschild JM, Federico FA, Gandhi TK, Kaushal R, Williams DH, Bates DW. Analysis of medication-related malpractice claims. Causes, preventability, and costs. *Arch Intern Med*. 2002;162:2414-2420.
- The Institute of Medicine has identified the prevention of ADEs as a priority area for national action.
  - Adams K, Corrigan JM, eds. *Priority areas for national action: transforming health care quality*. Washington, DC: The National Academies Press, 2003.
- The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has included improving the safety of using medications in its 2005 National Patient Safety Goals.  
[www.jcaho.org](http://www.jcaho.org)
- Medication reconciliation is one of JCAHO's 2005 National Patient Safety Goals.

### **INTERVENTION – MEDICATION RECONCILIATION**

- Forty-six percent of all medications errors occur at transition points (e.g., admission to hospital, transfer between units, discharge from hospital).
- Medication reconciliation ensures that patients receive all intended medications and no unintended medications following transitions in care locations.
- Medication reconciliation can virtually eliminate errors occurring at transitions in care.
  - Pronovost P, Weast B, Schwarz M, et al. Medication reconciliation: a practical tool to reduce the risk of medication errors. *J Crit Care*. 2003;18:201-205.
  - Rozich JD, Resar RK. Medication safety: one organization's approach to the challenge. *JCOM*. 2001;8(10):27-34.

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#### SUCCESS STORIES

- Luther Midelfort, Mayo Health System, Eau Claire, WI, eliminated virtually all ADEs in the Telemetry/Intermediate Care Unit by implementing a medication reconciliation system.  
- Rozich JD, Howard RJ, Justeson JM, Macken PD, Lindsay ME, Resar RK. Standardization as a mechanism to improve safety in healthcare. *Jt Comm J Qual Saf.* 2004;30:5-14.  
[www.ihi.org/IHI/Topics/PatientSafety/MedicationSystems/ImprovementStories](http://www.ihi.org/IHI/Topics/PatientSafety/MedicationSystems/ImprovementStories)
- OSF Healthcare System, Peoria, IL, reduced its rate of ADEs per 1,000 units of medication administered from 3.84 to 1.39 by implementing medication reconciliation and other measures to improve patient safety.  
- Whittington J, Cohen H. OSF Healthcare's journey in patient safety. *Qual Manag Health Care.* 2004;13:53-59.  
[www.ihi.org/IHI/Topics/PatientSafety/MedicationSystems/ImprovementStories](http://www.ihi.org/IHI/Topics/PatientSafety/MedicationSystems/ImprovementStories)

#### RESOURCES

- IHI Breakthrough Series Guide  
- Leape LL, Kabacoff A, Berwick DM, Roessner J. *Reducing Adverse Drug Events.* Boston: Institute for Healthcare Improvement, 1998.
- IHI/Premier Trigger Tool for Measuring ADEs  
- Rozich JD, Haraden CR, Resar RK. Adverse drug event trigger tool: a practical methodology for measuring medication related harm. *Qual Saf Health Care.* 2003;12:194-200.  
<http://www.ihi.org/IHI/Topics/PatientSafety/MedicationSystems/Tools>
- Massachusetts Coalition for the Prevention of Medical Errors  
- Reconciling medications: recommended practices, 2002  
[www.macoalition.org](http://www.macoalition.org)
- Pathways for Medication Safety – a coordinated and comprehensive set of tools designed to reduce medication errors, developed by the American Hospital Association, the Health Research and Educational Trust, and the Institute for Safe Medication Practices with support from The Commonwealth Fund.  
[www.medpathways.info](http://www.medpathways.info)

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We welcome your comments, suggestions for revision, and enhancements to this document. Please send suggestions, with contact information when possible, to [100k@IHI.org](mailto:100k@IHI.org).