



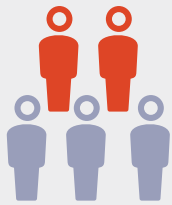
PREVENTING MEDICATION ERRORS IN HOSPITALS

DATA BY HOSPITAL ON NATIONALLY STANDARDIZED METRICS

FIGURE 1

COMPUTERIZED CHECKS DO NOT CATCH ALL MEDICATION ERRORS

When hospitals tested their computer systems using orders that all contained potentially harmful, preventable errors, the systems failed to flag the following:



39% of potentially harmful orders



13% of potentially fatal orders

When it comes to medication errors, one decimal point could mean the difference between life and death. Entering in a wrong dose could result in a patient receiving ten times the recommended amount of a drug. Equally dangerous, an unrecorded medication allergy could result in a deadly drug reaction. Roughly one in 20 hospital patients has experienced an adverse drug event (ADE).^{1,2} An ADE refers to any injury occurring at the time a drug is used, whether or not it is identified as a cause of the injury. These events are often preventable or caused by errors in the ordering process.³ Adverse drug events can result in a longer hospital stay and increased costs averaging \$3,000 per patient.⁴

TECHNOLOGY CAN HELP REDUCE MEDICATION ERRORS

Computerized Physician Order Entry (CPOE) systems are remarkably effective at reducing the rate of serious medication errors. A study led by David Bates, M.D., Chief of General Medicine at Boston’s Brigham and Women’s Hospital, demonstrated that CPOE reduced error rates by 55% – from 10.7 to 4.9 per 1000 patient days.

Rates of serious medication errors fell by 88% in a subsequent study by the same group.^{5,6} Research estimates that implementation of CPOE systems at all non-rural U.S. hospitals could prevent three million adverse drug events each year.⁷

Despite improvements in recent years, data from Leapfrog’s most recent survey of hospitals on this topic shows that not all hospitals

Using these combined criteria, nearly two-thirds of hospitals (64%) fully met the standard, showing a considerable improvement compared to 14% in 2010. However, some hospitals (4%) still reported that they did not have an inpatient CPOE system at all.

State-by-state comparisons also show where use and effectiveness of CPOE is lacking. Among the states with the lowest percentage of hospitals meeting Leapfrog’s standard were Indiana (25%) and Nevada (35%). Five other states also had fewer than 50% of hospitals meeting the standard (Figure 2). Among the states with the most hospitals meeting the standard were Maine (85%), Georgia (83%), and New York (81%). In addition, there were eight other states that had 75% or more hospitals meeting the standard.

HOSPITALS CAN PROMOTE GREATER ACCOUNTABILITY

Hospitals can supplement computerized checks with manual reviews to promote medication safety. Medication reconciliation is the process of identifying the most accurate list of all medications a patient is taking—including name, dosage, frequency, and route—and using this list to provide correct medications for patients.¹¹ This process can reduce medication errors and adverse drug events.¹²

Leapfrog asks hospitals a series of fifteen questions regarding their efforts to implement policies and procedures that can prevent adverse drug events. Over half (62%) of reporting hospitals indicated that they conduct all medication reconciliation activities in this list. Nearly all hospitals had implemented processes for documenting patient medications at admission (98% of hospitals) and shared the updated medication list with patients and their families or caregivers at discharge (99% of hospitals; Figure 3). However, not all hospitals had implemented the policies to ensure adherence to these processes. Only 84% of hospitals held their senior administrative leadership accountable for these processes through their performance review of compensation, and only 88% of hospitals had staff time or a budget allocated to developing best practices.

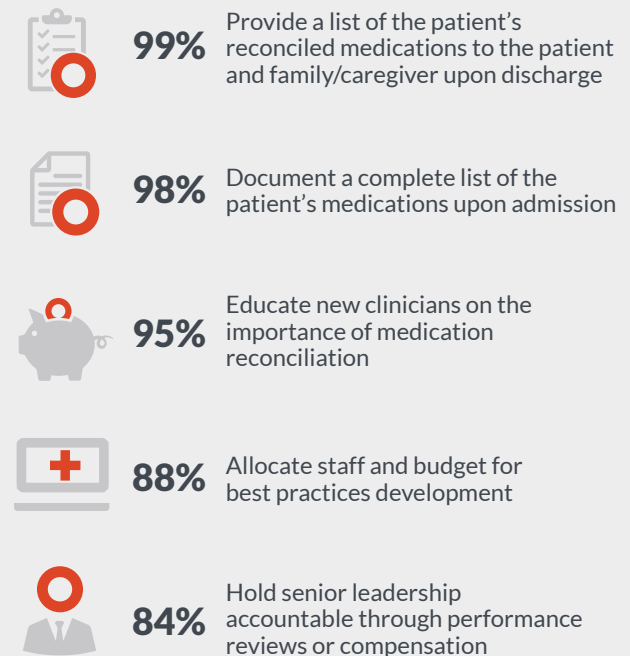
MORE TRANSPARENCY AND QUALITY IMPROVEMENT ARE NEEDED

Disappointingly, some hospitals declined to report their data at all. Leapfrog’s CPOE Evaluation tool is the only known system in the U.S. that allows hospitals to test how well their CPOE systems are detecting a wide variety of prescribing errors. An increase in the number of hospitals reporting to the Leapfrog Hospital Survey would allow more providers to test the efficacy of their medication safety tools, and identify areas where the tools could help to prevent harm to patients. Further, the publicly reported information by hospital can also empower patients to use the results to make more informed decisions when choosing a hospital for care.

FIGURE 3

HOSPITALS IMPLEMENT PROCESS IMPROVEMENTS BUT DO NOT ALWAYS ENSURE ACCOUNTABILITY

THE PERCENTAGE OF HOSPITALS THAT HAVE IMPLEMENTED PROCESSES TO DO THE FOLLOWING:





METHODS

The Leapfrog Group annually invites all adult general acute-care and free-standing pediatric hospitals in the United States to voluntarily report on topics such as high-risk procedures, maternity care, health care-associated infections, medication safety, nursing safety, and Never Events through its annual hospital survey. In 2015, a record 1,750 hospitals submitted a survey, representing 46% of hospitals nationwide. This report uses final hospital data from the 2015 Leapfrog Hospital Survey (data submitted through December 31, 2015).

The Leapfrog Hospital Survey includes measures that are endorsed by the National Quality Forum (NQF) and/or aligned with those of other significant data-collection entities, including the Centers for Medicare and Medicaid Services (CMS) and The Joint Commission. Leapfrog partners with the Armstrong

Institute for Patient Safety and Quality at Johns Hopkins Medicine to review survey measures and standards, and updates them annually to reflect the latest science. Additionally, panels of volunteer experts meet regularly to review the survey measures and recommend performance standards for each subject area covered in the Leapfrog Hospital Survey. The full list of survey measures included in the 2015 survey is available [here](#).

The Leapfrog Group's [CPOE Evaluation Tool](#) was developed by Dr. David Bates, Dr. David Classen, Jane Metzger and colleagues—with funding from the Agency for Healthcare Research and Quality (AHRQ) as well as others. Individual bricks-and-mortar hospitals are required to test their CPOE system annually and perform within specified parameters in order to fully meet the CPOE standard.

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About The Leapfrog Group: Founded in 2000 by large employers and other purchasers, [The Leapfrog Group](#) is a national nonprofit organization driving a movement for giant leaps forward in the quality and safety of American health care. The flagship [Leapfrog Hospital Survey](#) collects and transparently reports hospital performance, empowering purchasers to find the highest-value care and giving consumers the lifesaving information they need to make informed decisions. [Hospital Safety Score](#), Leapfrog's other main initiative, assigns letter grades to hospitals based on their record of patient safety, helping consumers protect themselves and their families from errors, injuries, accidents, and infections.

About Castlight Health: Our mission is to empower people to make the best choices for their health and to help companies make the most of their health benefits. We offer a health benefits platform that engages employees to make better healthcare decisions and guide them to the right program, care, and provider. The platform also enables benefit leaders to communicate and measure their programs while driving employee engagement with targeted, relevant communications. Castlight has partnered with more than 190 customers, spanning millions of lives, to improve healthcare outcomes, lower costs, and increase benefits satisfaction.

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