THE LEAPFROG GROUP

LEAPFROG HOSPITAL SURVEY RESULTS

2008

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Informing Choices. Rewarding Excellence.
Getting Health Care Right.

INTRODUCTION

Many health care leaders consider the Leapfrog Hospital Survey to be the gold standard in transparent public reporting of hospital performance. The Leapfrog Group is the private sector's consensus public reporting initiative that each year captures information on American hospital safety practices, efficiency, quality and patient outcomes. The information is not available elsewhere in the public domain. Leapfrog is widely utilized by health care industry stakeholders, as well as by large private and public sector employer-purchasers of health care, to evaluate and compare patient safety records across hospitals and to drive purchasing and contracting decisions.

The questions Leapfrog asks on the survey are consistent with measures used by quality advocacy organizations such as The Joint Commission, National Quality Forum and Centers for Medicare and Medicaid Services (CMS). Leapfrog publicly reports the answers to those questions — the data we gather from assessing hospital adherence to nationally-endorsed quality measures.

Leapfrog data is thus the *only public source* of information on hospital adoption of health information systems (specifically, the computerized prescriber order-entry system), hospital efficiency, adoption of endorsed safe practices, survival predictors, presence of an intensivist in the ICU and risk-adjusted mortality rates for certain high-risk procedures.

The Leapfrog Group has administered the survey since 2001. Leapfrog is a member-supported nonprofit organization representing a consortium of major private and public purchasers of health care benefits – covering more than 37 million Americans in all 50 states. Leapfrog members represent tens of billions of dollars in annual health care expenditures. Leapfrog was named for its mission – to trigger giant "leaps" forward in the safety, quality and affordability of health care.

Research shows that if three of Leapfrog's standards were implemented in all urban hospitals in the U.S. (ICU staffing, medication ordering systems and use of higher-performing hospitals for high-risk procedures), the nation could save up to 57,000 lives, avoid as many as three million adverse drug events and save up to $12 billion in health care costs each year.[1]

[1] Lwin AK, Shepard DS. Estimating Lives and Dollars Saved from Universal Adoption of the Leapfrog Safety and Quality Standards: 2008 Update. The Leapfrog Group. Washington, DC: 2008.

Leapfrog Hospitals Are High-Performing

Numerous peer-reviewed studies have suggested that hospitals that participate in the Leapfrog Hospital Survey tend to be the best hospitals in the country. Completing the survey has been shown to correlate with a hospital's investment in structural, process and clinical improvements aimed at patient safety. Use of the survey also heightens awareness and accountability within the institution.

For instance, a study by Dr. Asish Jha, et al. published in the June 2008 peer-reviewed *Joint Commission Journal on Quality and Patient Safety* found that hospitals that performed adequately on the Leapfrog Hospital Survey have lower mortality rates and better quality of care than hospitals that declined to participate in the survey.

What accounts for the strong correlation between completion of the Leapfrog Hospital Survey and quality performance? Experts speculate that hospitals that have begun to implement Leapfrog's original three leaps are also hospitals that pay greater attention broadly to providing high-quality care. Participation also reflects their competitive drive in benchmarking themselves against other high-performing hospitals in the Leapfrog pantheon.

Leapfrog Hospital Survey Provides a Dashboard on Hospital Quality

The Leapfrog Hospital Survey contains a carefully selected dashboard of evidence-based and endorsed measures of hospital safety and quality. Based on studies that have examined Leapfrog's overall value as a predictor of performance, the Leapfrog dashboard appears to be a meaningful representation of the overall safety of each hospital. The Leapfrog dashboard includes steps, guidelines and outcomes that have the greatest impact on safety, quality and efficiency in American hospitals. Leapfrog members and its expert panel require that survey questions harmonize with other accepted quality measures, such as The Joint Commission and the Centers for Medicare and Medicaid Services (CMS), and, where possible, are NQF-endorsed.

Leapfrog results are a powerful tool for informing health care consumers about the hospitals in which they receive care. The results are also a resource for health care policy makers, legislators and stakeholders on the state of health care quality in the U.S. Leapfrog's core membership, employers and other purchasers of health care, use Leapfrog results in contracting, benefits design, employee education and pay-for-performance programs.

THE LEAPFROG HOSPITAL SURVEY 2008 RESULTS

The 2008 Survey was voluntarily completed by 1,282 acute care hospitals across 37 regions in 44 states – representing more than 50% of targeted inpatient beds in these regions.* This report provides detailed information on 2008 Survey results and comments on trends from earlier years.

Individual hospital data are available at www.leapfroggroup.org.

Medication Error Prevention: The Leapfrog Computerized Prescriber Order-Entry (CPOE) Standard

The results of the 2008 Survey indicate that only 7% of hospitals fully meet Leapfrog's medication error prevention, CPOE, standard. Although disappointing, this is an improvement from 2002 when only 2% of hospitals met this Leapfrog standard. In 2007, 11% of hospitals fully met the standard, but in 2008 Leapfrog introduced a new requirement for fully meeting the standard: Hospitals must test their CPOE systems with Leapfrog's CPOE Evaluation Tool.

Research estimates that more than one million serious medication errors occur each year in U.S. hospitals, with 7,000 deaths annually from adverse drug events (ADEs). In addition to the human price paid, each ADE adds $2,000 on average to the cost of a hospitalization. This translates to more than $7.5 billion per year nationwide in hospital costs alone. CPOE systems can reduce the number of ADEs by up to 88%, preventing three million serious medication errors in the U.S. each year.

CPOE systems are electronic prescribing systems that intercept errors when they most commonly occur — at the time medications are ordered. With CPOE, physicians enter orders into a computer rather than on paper. Orders are integrated with patient information, including laboratory and prescription data. The order is then automatically checked for potential errors or problems.

The Leapfrog Group's CPOE standard includes having hospitals enter at least 75% of their inpatient medication orders through their CPOE system and having hospitals assess the implementation of their CPOE system with the Leapfrog CPOE Evaluation Tool to ensure their CPOE system is alerting prescribers to common, serious prescribing errors.

The CPOE Evaluation Tool is the only such tool in the public domain to test any form of health information technology (HIT) system. It is a six-hour simulation in which hospitals enter mock patients and patient profiles into their CPOE systems and then issue mock orders for those patients. Embedded in the order sets are prescribing errors, including a limited number of potentially fatal errors. Hospitals report to Leapfrog on which alerts were generated by their CPOE system, from which a score is derived.

Although this year Leapfrog did not release individual hospital scores from the tool, we have issued a warning to hospitals that systems generally did not perform well on the CPOE test. It will be critical in the future that U.S. investment in HIT infrastructure contain opportunities for ongoing monitoring and evaluation of the technology.

Leapfrog is planning an Executive Consortium on CPOE to work with providers, researchers, IT vendors, government agencies and legislators to study the barriers to CPOE adoption, assure the effectiveness of CPOE systems and expand CPOE implementation at hospitals across the country.

The Leapfrog Group Standard for High-Risk Procedures

Research indicates that a patient's risk of dying is reduced approximately two to four times, depending on the high-risk procedure, if care is obtained in hospitals that meet Leapfrog standards.[2]

Below are the percentages of hospitals that fully meet the Leapfrog high-risk procedure standard in 2008 for each of the following:

- 43% for heart bypass surgery (Coronary Artery Bypass Graft, CABG)
- 35% for heart angioplasty (Percutaneous Coronary Interventions)
- 7% for aortic valve replacement
- 5% for aortic abdominal aneurysm repair
- 23% for pancreatic resection
- 15% for esophagectomy
- 16% for bariatric (weight-loss) surgery
- 32% for high-risk deliveries

Over 3,000 deaths could be avoided each year if Leapfrog standards were implemented in all hospitals that electively perform the above procedures.[3]

[2] IBID
[3] IBID

The choice about where to have certain high-risk procedures or surgeries (also referred to as evidence-based hospital referral, EBHR) can mean the difference between life and death.

With heart surgery, for example, studies have found more than three-fold differences in surgical mortality rates across hospitals. Similar variation in quality has been described for non-surgical conditions as well. Patients can expect the safest possible surgery at hospitals with low mortality rates or high rates of adherence to clinical practices or processes known to improve surgical outcomes.

For each high-risk procedure, Leapfrog's standard evaluates hospital performance on state, regional and national outcomes-assessment registries; adherence to nationally-endorsed quality-of-care process measures; and the number of each procedure-type performed at their facility, as higher volumes have been linked with better outcomes.

Leapfrog's expert panel sets performance standards based on evidence, and hospitals fully meeting each standard demonstrate lower risk-adjusted mortality rates, have high adherence to nationally endorsed process measures and perform significant volumes of the specific procedure.

The Leapfrog ICU Physician Staffing (IPS) Standard

Results of the 2008 Survey show that 31% of hospitals fully meet the Leapfrog standard for ICU Physician Staffing and another 7% plan to do so by the end of 2009. This is a major advance. In 2002, only 10% met the Leapfrog standard.

Mortality rates are significantly lower in hospitals with ICUs managed exclusively by board-certified intensivists (physicians trained in critical care medicine). Research has shown that in ICUs where intensivists manage or co-manage all patients, there is a 30% reduction in overall hospital mortality and a 40% reduction in ICU mortality.

Leapfrog's ICU Physician Staffing (IPS) standard requires hospitals to use intensivists for care management in all general medical, surgical and neuro ICUs for at least seven days a week, eight hours per day, with additional availability by pager within five minutes.

More than 54,000 deaths could be avoided and up to $4.3 billion saved each year if the IPS standard were implemented in all urban hospitals with ICUs.[4]

[4] IBID

Survival Predictor

In the 2008 Leapfrog Hospital Survey, the Survival Predictor was calculated for esophagectomy and pancreatic resection. Thirty percent of reporting hospitals providing this elective surgery offered best odds for survival for esophagectomy, and similarly, 40% of reporting hospitals providing elective pancreatic resections offered best odds for survival for pancreatic resection.

The Leapfrog Group calculated a Survival Predictor, a simple composite measure based on a combination of surgical mortality and hospital volume for two of the high-risk procedures. The measure, developed by Drs. John Birkmeyer and Justin Dimnick at the University of Michigan, and Dr. Douglas Staiger at Dartmouth, is designed to optimize the prediction of future risk-adjusted mortality based on these two inputs. The measure has been found to do a better job of explaining variations in mortality and predicting future hospital performance than either observed surgical mortality or hospital volume alone.

The Leapfrog Safe Practices Score

Results of the 2008 Leapfrog Hospital Survey found that 32% of hospitals fully meet at least 90% of the expert-weighted recommended policies and procedures.

The Leapfrog Safe Practices Score summarizes a hospital's adherence to 13 safety practices endorsed by the National Quality Forum, such as: maintaining a culture of safety, hand hygiene, nursing workforce and prevention of infections.

Efficiency of Care

The percentage of hospitals that fully met Leapfrog's Efficiency standards in 2008 by demonstrating both high quality of care and low resource use were:

- *24% for heart bypass surgery (Coronary Artery Bypass Graft, CABG)*
- *21% for heart angioplasty (Percutaneous Coronary Interventions)*
- *14% for heart attacks (Acute Myocardial Infarction)*
- *14% for pneumonia*

The Leapfrog Hospital Survey is the only national survey to report a hospital-efficiency score, which is a combination of a hospital's quality of care and resource use.

The Survey measures resource utilization by a hospital's risk-adjusted average length of stay, further adjusted by their readmission rate. Readmission rates are important to consider as they reflect on both the quality of care received during the previous hospitalization, as well as the institution's resource use, since the most costly part of a hospitalization is typically during the first 24 hours.

To obtain efficiency measures, Leapfrog integrates the resource-use metric with quality, which is measured by risk-adjusted mortality rates. Hospitals that fully meet the efficiency standard for a procedure/condition must satisfy two standards: first, fully meet the quality standards for that procedure/condition; second, rank below the national median for resource use (average length of stay and readmission rates) for that procedure/condition.

Common Acute Conditions

The results of the 2008 Leapfrog Survey found that 26% of reporting hospitals fully met the Leapfrog quality standards for the treatment of Acute Myocardial Infarction, and 34% of hospitals fully met the standards for the treatment of pneumonia.

The Leapfrog Hospital Survey measures whether the hospital is following evidence-based national guidelines for treatment of two common acute conditions - acute myocardial infarction (AMI) and pneumonia. Examples of the evidence-based national guidelines include aspirin at arrival for AMI patients and pneumococcal vaccination for pneumonia patients.

Hospital-Acquired Infections

Overall, 65% of hospitals do not have all of the recommended policies in place to prevent many of the most common hospital-acquired infections. This is an improvement from 2007, when 87% did not have the policies in places. Only 49.9% of reporting hospitals have implemented all of the recommended policies and practices for preventing aspiration and ventilator-associated pneumonia and central venous catheter-related bloodstream infections. Only 50.5% of reporting hospitals had in place all of the recommended policies for hand-hygiene practices.

Each year two million people - one out of every 20 people who obtain care at an American hospital - contract an infection during their care, and 90,000 of them die. To put that into context, hospital acquired infections kill almost twice as many people as breast cancer and AIDS combined. These results are disappointing, since they suggest that even Leapfrog hospitals, the nation's highest performing overall, lag behind in implementing the steps recommended to prevent infection.

Hospital-Acquired Conditions

Results of the 2008 Leapfrog Hospital Survey found that 30% of hospitals have fewer than 0.25 hospital-acquired pressure ulcers per 1,000 inpatient days and 25% of hospitals have fewer than 0.07 hospital-acquired injuries per 1,000 inpatient days.

CMS will no longer pay hospitals for the increased costs of care that result when a patient is harmed by one of several conditions acquired in the hospital that have been determined to be preventable by following generally-accepted guidelines. The Leapfrog Hospital Survey reports on the frequency of two hospital-acquired conditions: hospital-acquired pressure ulcers (sometimes referred to as bedsores) and hospital-acquired injuries (burns, falls, etc.).

Between one quarter and one third of hospitals met Leapfrog standards for the two hospital-acquired conditions in the Survey. One surprising finding was the wide variation among hospitals. Six percent of hospitals reported at least 10 times as many hospital-acquired pressure ulcers as those hospitals that fully met the standard; 10% of hospitals had at least 10 times as many hospital-acquired injuries as those hospitals that fully met the standard.

Leapfrog's Never-Events Policy – Managing Serious Errors

In 2008, 65% of hospitals responding to the Leapfrog Hospital Survey have agreed to implement Leapfrog's Never-Events Policy. This is improved from 2007, when 53% agreed to the policy.

The Leapfrog Group was the first national organization to issue a never-events policy in 2006, which is based on the NQF list of 28 Serious Reportable Events. Never Events are serious medical errors that should "never" happen to a patient. Examples include wrong-site surgery, death or disability from contaminated drugs, leaving a foreign object in a patient during surgery and discharging a newborn to the wrong mother.

Leapfrog asks hospitals to agree to take four steps when a Never Event occurs at their facility, including: apologizing to the patient and/or the patient's family, conducting a root cause analysis of the event, reporting of the event to a patient safety organization and waiving the incremental costs associated with the event.

The Leapfrog Group, Leapfrog Hospital Survey Results
National Performance Detail 2008

Leapfrog Recommended Standards	% Fully Met Standard (4 bars)	% Substantial Progress (3 bars)	% Some Progress (2 bars)	% Willing to Report (1 bar)
Prevent Medication Errors *Computerized Physician Order Entry*	7%	3%	49%	41%
Appropriate ICU Staffing *ICU Prescriber Staffing*	31%	2%	3%	64%
Steps to Avoid Harm *NQF Safe Practices Score*	25%	25%	25%	25%
Heart Bypass Surgery - Quality of Care *Coronary Artery Bypass Graft (CABG)*	43%	8%	33%	16%
Heart Bypass Surgery – Resource Use *Coronary Artery Bypass Graft (CABG)*	24%	25%	25%	26%
Heart Bypass Surgery – Efficiency *Coronary Artery Bypass Graft (CABG)*	24%	32%	34%	10%
Heart Angioplasty- Quality of Care *Percutaneous Coronary Intervention (PCI)*	35%	30%	32%	3%
Heart Angioplasty- Resource Use *Percutaneous Coronary Intervention (PCI)*	26%	25%	25%	25%
Heart Angioplasty- Efficiency *Percutaneous Coronary Intervention (PCI)*	21%	43%	35%	1%
Aortic Valve Replacement - Quality of Care *AVR*	6%	46%	4%	43%
Abdominal Aortic Aneurism Repair - Quality of Care *AAA Repair*	5%	18%	44%	34%
Pancreatic Resection - Quality of Care *Pancreatectomy*	23%	12%	21%	44%
Esophageal Resection - Quality of Care *Esophagectomy*	15%	6%	9%	70%
Weight-loss Surgery - Quality of Care *Bariatric Surgery*	16%	28%	9%	47%
High-Risk Deliveries - Quality of Care	32%	22%	21%	25%
Heart Attack – Quality of Care *AMI*	26%	24%	31%	18%
Heart Attack – Resource Use *AMI*	26%	25%	25%	25%
Heart Attack – Efficiency *AMI*	14%	38%	40%	8%
Pneumonia – Quality of Care	34%	38%	24%	4%
Pneumonia – Resource Use	25%	26%	25%	25%
Pneumonia – Efficiency	18%	49%	31%	2%
Reduce Pressure Ulcers *Hospital-acquired pressure ulcers*	30%	23%	22%	25%
Reduce In-Hospital Injuries *Hospital-acquired falls and burns*	25%	26%	22%	27%
Managing Serious Errors *Leapfrog's Never Events Policy*	65%			35%

Please see next page for standard definitions.

Definitions of Fully Meeting Standards

Quality of Care: Meets/exceeds volume thresholds, has lower than average risk-adjusted mortality, and/or adheres to quality processes.

Resource Use: Places in the best quartile, as measured by severity-adjusted average length of stay, further adjusted by the readmission rate.

Efficiency: Places in best performance group for quality of care and is below the national median for resource use.

Survival Predictor: Places in the best quartile nationally on a composite outcome measure that combines volume and observed mortality.

* Leapfrog Group Targeted Regions

Alabama
California
Colorado
Florida - Central
Georgia - Savannah, Atlanta
Illinois
Indiana – Southern; Central & Northern
Iowa
Kansas - Wichita
Maine
Maryland - DC/Baltimore
Massachusetts
Michigan
Minnesota
Missouri - Kansas City, St Louis
Nevada
New Jersey
New York - Metro NYC;
New York (excl. NYC)
North Carolina - Raleigh/Durham/
Chapel Hill; Western
Ohio – Cincinnati; Columbus; Toledo;
Northeast; Southeast
Oregon - Western
South Carolina - Upstate
Tennessee – Memphis; East/Mid
Texas – Dallas-Fort Worth
Virginia
Washington – Seattle; Greater
Wisconsin

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