

American Hospital Quality Outcomes 2014:

Healthgrades Report to the Nation: Executive Summary

As millions of Americans consider new healthcare options available through the Affordable Care Act, we release the *American Hospital Quality Outcomes 2014: Healthgrades Report to the Nation*. This report focuses on hospital performance at over 4,500 hospitals nationwide covering 31 of the most common inpatient procedures and conditions during the 2010-2012 timeframe.

In addition to hospital quality, we review early findings from our study of the relationship between adverse patient outcomes and the resulting increase in direct costs incurred by hospitals. In our analysis, we document the increase in direct costs for procedures and conditions where a patient experiences a complication or dies during the hospital stay.

Lower Complication and Mortality Rates Improve Outcomes and Lower Healthcare Costs

American policy-makers are focusing on ways to lower healthcare costs and improve outcomes. Our findings indicate that lowering complications and mortality rates is an important factor in achieving that goal. The news for everyone—hospitals, physicians, and patients—is that we each have a role to play. Each group can take specific actions to help improve quality outcomes and lower costs.

Hospitals: Focus on Improving Quality

Hospitals are dedicated to providing safe and effective care and all strive for continued improvement. Findings from our study indicate that not only is there still significant variation in outcomes among hospitals, even after accounting for patients' severity of illness and population demographics, but that variation exists across key conditions and procedures.

Hospitals can focus on what is causing the variation by using clinical analytics and process improvements, and reduce mortality and complication rates as well as the associated direct costs that those rates drive.

Physicians: Utilize Current Techniques to Optimize Quality Outcomes

Physicians use their expertise to understand a patient's condition and risk factors, consider clinical evidence, and determine which techniques or methods will achieve the best overall outcome.

Results from our comparison of laparoscopic and open surgical approaches for colon resection/excision surgeries shows the use of laparoscopic procedures, when a patient's condition and other risk factors allow for it, can aid in reducing mortality and length of stay.

Physicians can help achieve the goal of optimizing quality outcomes by: staying current on the latest approaches

and techniques; performing procedures at hospitals that have been shown to have lower complication and mortality rates; and, using referral networks with surgeons who are trained in and take advantage of minimally invasive surgery options when appropriate

Patients: Use Quality Performance Data to Make Informed Choices

Patients have an important role to play in the decision-making process by recognizing that hospitals do not perform equally in all procedures. Patients can find out about a hospital's performance based on complication and mortality rates because this information is free and publicly available from resources like Healthgrades.

In addition to differences in clinical outcomes, consumers should be aware of variation in direct costs incurred by hospitals. Healthcare costs are passed on to the consumer in the form of higher premiums, deductibles, and co-pays. This report highlights the connection between higher complication rates and increased costs.

Patients can apply steps they routinely take for other purchases—researching costs, performance, and value prior to deciding what to buy and where—to their healthcare decisions to help make the best choices for their healthcare needs.

Health Insurance Plan Selection Can Influence Outcomes and Costs

Healthcare reform initiatives are designed to improve the efficiency and effectiveness of care, thereby reducing overall healthcare expenditures. The health insurance marketplace is the most recently implemented piece of the Affordable Care Act. The marketplace is where consumers compare insurance plans and buy the one that fits their needs.

Consumers should evaluate the providers who participate in the plan as well as the hospitals those providers utilize for hospital services. Ultimately, the insurance plan you pick dictates the doctors you can see, the hospitals you can use, and has the ability to directly influence the outcome and cost of your care.

We urge consumers to be informed and take advantage of available resources at Healthgrades.com to identify and compare hospital quality, readmission rates, timely and effective care, patient safety, and patient experience measures. Support your search at www.healthgrades.com/find-a-hospital.

American Hospital Quality Outcomes 2014: Healthgrades Report to the Nation

On March 23, 2010, President Obama signed into law the Patient Protection and Affordable Care Act. The goals of this legislation include rewarding efficient delivery of care, encouraging continuous improvement, and reducing overall per capita spending on healthcare. Specific objectives include:

- Make coverage more secure for those who have insurance, and extend affordable coverage to the uninsured
- Improve healthcare quality and patient safety
- Emphasize primary and preventive care
- Reduce healthcare costs while promoting high-value, effective care
- Ensure access to quality care for vulnerable populations
- Promote health information technology (i.e. electronic medical records).¹

Healthgrades Mission Supports Improvement Initiatives

Since 1998, Healthgrades has reported on the quality and safety of our nation's hospitals, using objective, clinical measures. We provide this information to consumers, supporting their efforts to become more informed when making healthcare decisions. Healthgrades was founded on the principle that providing transparency into clinical performance will drive efforts to improve quality, save lives, and decrease costs.

We are pleased to announce that, this year, Healthgrades expanded the conditions and procedures we evaluate from last year to include two prostate surgery cohorts instead of one, three gastrointestinal surgery cohorts instead of one, and two brand new electrophysiology cohorts—pacemaker procedures and defibrillator procedures—which are being introduced this year.

Quality and Cost Vary Across American Hospitals

Healthgrades 2014 report on American hospital quality shows:

- Quality disparities persist within hospitals among different procedures and conditions, as well as between hospitals within local service areas.
- Patient complications and mortality in the hospital increase direct costs.
- Use of minimally invasive surgical techniques may hold promise for reducing mortality and length of stay.

AMERICAN CONSUMERS AGREE: INFORMATION IS KEY TO MAKING GOOD HEALTHCARE DECISIONS

A recent Harris Interactive Research survey of 1,000 consumers across the country reveals how prepared Americans are to make informed healthcare decisions. The survey showed that while consumers believe information is important to make a decision, they currently use other factors to make their choices:

- Americans are virtually unanimous (**97%**) in agreeing that having the right information is the key to making good healthcare decisions.
- Yet, they admit they are more likely to choose a hospital based on **convenient location (58%)** and **amount of co-pay (45%)** than on **quality outcomes data (30%)**.

Why the disconnect? Many Americans may not realize the information they desire is at their fingertips. Using Healthgrades.com or the HG app can provide the needed information regarding quality performance and outcomes.

HOW MUCH DOES AMERICA SPEND ON HEALTHCARE?

The Centers for Medicare and Medicaid Services (CMS) recently reported that total U.S. healthcare expenditures reached.²

\$2.6 trillion which equates to

17.9% of the U.S. gross domestic product.

The two largest contributors to healthcare costs are:

- Hospital care - \$814.0 billion
- Physician and clinical services - \$515.5 billion

REDUCING HEALTHCARE COSTS

Recent estimates show that health reform legislation will reduce healthcare spending by \$590 billion over 10 years and lower premiums by nearly \$2,000 per family by slowing the annual growth rate in national health expenditures.³

2014 STUDY HIGHLIGHTS

From 2010-2012, if all hospitals as a group, performed similarly to hospitals receiving 5-stars as a group, on average:

- **234,252 lives**
could potentially have been saved*
- **157,418 complications**
could potentially have been avoided*

*Statistics are based on Healthgrades analysis of MedPAR data for years 2010 through 2012 and represent 3-year estimates for Medicare patients only.

Hospitals Do Not Perform Equally

Hospital Quality Varies Significantly Within Local Service Areas

The assumption that the nearest hospital is as good a choice as any other is a risky one. Our analysis highlights significant differences, within the same city, in hospital performance and outcomes for specific conditions and procedures.

Here are just two of many examples that demonstrate the magnitude of difference in hospital performance between hospitals in the same service area based on the 2014 study:

Atlanta

- 33 hospitals were evaluated for Stroke. The risk-adjusted in-hospital mortality rates ranged from 0.8% to 13.4% among these hospitals.
- This means a patient's risk of dying is **17 times higher** if they go to the hospital with the higher mortality rate compared to the hospital with the lower rate. For comparison, the national average in-hospital mortality rate for Stroke is 6.8%.

Seattle

- 19 hospitals were evaluated for Colorectal Surgeries. The risk-adjusted in-hospital mortality rates ranged from 1.0% to 12.4%.
- This means a patient's risk of dying is **12 times higher** if they go to the hospital with the higher mortality rate compared to the hospital with the lower rate. The national average in-hospital mortality rate for Colorectal Surgeries is 5.1%.

To find the best care, consumers are urged to understand the measures that matter and research the quality of the outcomes at different hospitals.

Comparing Top and Bottom Performance

The Healthgrades 2014 quality achievement ratings evaluate hospital performance in 31 procedures and conditions—19 mortality-based cohorts and 12 complication-based cohorts (*see Table 1*).

To compare top and bottom hospital performance, we highlight a subset of these procedures and conditions because they represent a higher proportion of patient records and the observed cases of mortality or complications.

Mortality-Based Procedures and Conditions

We focus on six mortality-based procedures and conditions because together they represent half (51.2%) of all patients included in mortality-based procedures and conditions, and most (65.8%) of the deaths observed in our study.

These six conditions and procedures, and their associated risk-adjusted mortality rates (%), greatly increase the overall disease burden in the United States.

- Heart Attack (8.00%)
- COPD (1.48%)
- Pneumonia (4.57%)
- Stroke (6.79%)
- Colorectal Surgeries (5.14%)
- Sepsis (18.20%)

QUICK FACTS ABOUT KEY MORTALITY-BASED PROCEDURES/CONDITIONS

- **Heart Attack** and heart related conditions resulted in a total medical cost of \$107.2 billion in 2010.⁴
- **COPD** accounts for more than 120,000 U.S. deaths each year.⁴
- **Pneumonia** diagnoses were associated with 1.1 million patient discharges in 2010.⁵
- **Stroke** is the number 4 cause of death and a leading cause of disability in the United States.⁶
- **Colorectal Surgery** In 2010, hospitalizations for resection of the colon had a mean inpatient cost of \$23,788 per patient.⁴
- **Sepsis** resulted in an average in-hospital length of stay of 8.8 days in 2010.⁴

WHAT IS DISEASE BURDEN?

Disease burden refers to the impact that health problems have on our society. Burden is measured by financial cost, rates of disease (morbidity), chronic disability, and years of life lost (mortality).

Diseases and injuries with **the highest mortality or largest number of years of life lost** (YLLs)⁷ in 2010 were:

- Ischemic heart disease (due to coronary artery disease)
- Lung cancer
- Stroke
- COPD (chronic obstructive pulmonary disease)
- Road injury

Although life expectancy increased by about three years from 1990 to 2010, morbidity and chronic disability now account for nearly half of the U.S. disease burden.

Diseases with the **highest morbidity or largest number of years lived with disability** (YLDs)⁷ in 2010 were:

- Low back pain
- Major depressive disorder and anxiety
- Musculoskeletal disorders
- Neck pain

It is imperative that American consumers take charge of their own health, manage their own risk factors, and make informed choices on where, and from whom, to receive care.

Differences in Risk of Mortality

Clinical outcomes differ dramatically between hospitals in the top and bottom Healthgrades hospital performance categories.

Patients being treated at a hospital receiving 5-stars in a particular procedure or condition have a **lower risk of dying** during a hospital stay than if they were treated at a hospital receiving 1-star in that procedure or condition.

We show the difference in the risk of dying between a hospital receiving 5-stars versus 1-star for the six mortality-based procedures and conditions (average mortality rate for hospitals receiving 1-star versus average mortality rate for hospitals receiving 5-stars):

- Heart Attack: 48.1% lower risk (11.0% vs. 5.7%)
- COPD: 81.0% lower risk (3.1% vs. 0.6%)
- Pneumonia: 65.9% lower risk (8.0% vs. 2.7%)
- Stroke: 54.6% lower risk (10.1% vs. 4.6%)
- Colorectal Surgeries: 70.4% lower risk (9.1% vs. 2.7%)
- Sepsis: 41.9% lower risk (24.2% vs. 14.1%)

Complication-Based Procedures and Conditions

We focus on four complication-based conditions and procedures because together they represent over half (52.4%) of all patients included in complication-based cohorts, and 46.8% of in-hospital complications studied by Healthgrades.

The four conditions and procedures and their associated complications rates (%) greatly increase the overall disease burden as measured by financial cost, morbidity, or other indicators.

- Hip Replacement (8.10%)
- Total Knee Replacement (7.76%)
- Carotid Surgery (9.43%)
- Gallbladder Removal Surgery (22.09%)

Differences in Risk of Experiencing Complications

Patients being treated at a hospital receiving 5-stars in a particular procedure or condition have a **lower risk of experiencing complications** during a hospital stay than if they were treated at a hospital receiving 1-star in that procedure or condition.

We show the difference in risk of experiencing a complication between a hospital receiving 5-stars versus 1-star for the four primary complication-based procedures and conditions (average complication rate for hospitals receiving 1-star versus average complication rate for hospitals receiving 5-stars):

- Total Knee Replacement: 63.4% lower risk (12.2% vs. 4.5%)
- Hip Replacement: 69.1% lower risk (13.6% vs. 4.2%)
- Carotid Surgery: 66.9% lower risk (15.0% vs. 5.0%)
- Gallbladder Removal Surgery: 52.5% lower risk (30.2% vs. 14.4%)

KEY MORTALITY RISKS

Difference in Risk of Death between Hospitals Receiving 1-Star and Hospitals Receiving 5-Stars

Healthgrades compared risk-adjusted in-hospital mortality outcomes in hospitals receiving 1-star and hospitals receiving 5-stars for performance in the following conditions and procedures from 2010-2012, and found that patients treated in hospitals with 1-star, on average, are:

Heart Attack

- **1.9 times** more likely to die*

COPD

- **5.3 times** more likely to die*

Pneumonia

- **2.9 times** more likely to die*

Stroke

- **2.2 times** more likely to die*

Colorectal Surgeries

- **3.4 times** more likely to die*

Sepsis

- **1.7 times** more likely to die*
key complications risks

KEY COMPLICATIONS RISKS

Difference in Risk of Complications between Hospitals Receiving 1-Star and Hospitals Receiving 5-Stars

Healthgrades also compared risk-adjusted complications outcomes in hospitals receiving 1-star and hospitals receiving 5-stars for performance in the following conditions or procedures from 2010-2012. We found that patients treated in hospitals with 1-star have, on average, a:

Hip Replacement

- **3.2 times** higher risk of complications*

Total Knee Replacement

- **2.7 times** higher risk of complications*

Carotid Surgery

- **3.0 times** higher risk of complications*

Gallbladder Removal Surgery (Cholecystectomy)

- **2.1 times** higher risk of complications*

*Statistics based on Healthgrades analysis of MedPAR data 2010-2012 for Medicare patients only.

Complications and Deaths Increase Costs

In March 2013, the Institute of Medicine (IOM) released a study on healthcare spending and quality. The study's preliminary results showed that there is substantial variation in healthcare spending and utilization of services. More specifically, direct hospital costs vary by the price of services as well as by the quantity of services. Price depends on negotiations between who is paying for the services (payer) and who is providing the services (provider). Both price and quantity can vary by state, city, hospital, and even locally among single provider practices.⁸

In light of the IOM's findings, Healthgrades developed an approach to study the impact of complications and mortality on direct hospital costs. Direct costs are defined as the costs related to caring for a patient during a hospital stay. While this is not a measure of what the patient pays, it does represent the investment made by the hospital in a patient's care and is a meaningful portion of what will need to be paid to the hospital from the patient or payer, such as the patient's insurance company.

Healthgrades used a convenience sample of data from 57 hospital locations, which included an analysis of 258,040 patient records and direct cost data across a subset of cohorts featured in this report.* We share our early findings in this report, focusing on variation in risk-adjusted direct cost by specific condition or procedure when impacted by complications and/or mortality.

* Nine out of 10 of the key cohorts featured in this report were included in the analysis.

How Does Hospital Direct Cost Relate to Reimbursement?

A hospital's direct cost is a measure of the base expense of a patient encounter. It is represented as a proportion of total charges and actual reimbursement. As such, direct cost gives us a foundation to compare potential proportionate increases in consumer fees and hospital reimbursement in the presence of complications and mortalities.

Complications Increase Costs Nearly Two-Fold

We found that complications increased the total risk-adjusted direct cost, on average, by 1.8 times across four key complication-based procedures.

The range of risk-adjusted direct cost for procedures with complications is 1.3 times to 2.3 times higher than the cost without complications. The biggest difference was observed in Gallbladder Removal Surgery, which, for example, had an average direct cost of \$4,680 without complications. This average cost increased to \$10,717 for cases where the patient had one or more complications. As a comparison, the lowest proportionate increases in direct costs were observed in Total Knee Replacement (1.3 times) and Hip Replacement (1.3 times) (see *Figure 1*).

WHAT ARE DIRECT HOSPITAL COSTS?

The hospital direct cost is a combination of consumable goods, such as bandages, medication, non-reusable devices, needles, and IVs the hospital uses to treat a patient. It also includes a pre-determined amount for other categories, such as, staff salaries, testing (MRI, CT, X-ray), and room charges.

Source: OMB Circular A-21, Section D.1 and E.1 FAR Cost principles Guide (January 2013).

WHAT IS A RISK-ADJUSTED DIRECT COST RATIO?

In order to evaluate cohorts and hospitals equally, direct costs are risk-adjusted using a statistical technique called a Hierarchical Linear Model. This technique accounts for expected variation in cost related to patient diagnoses and procedures as well as the unexpected variation due to hospital differences.

The result is an estimate of direct cost balanced for more costly patients and procedures. Healthgrades reports risk-adjusted direct cost values as ratios of average cost for patients with a complication, or who die (or both), divided by the average cost for patients with no complication or mortality.

The **risk-adjusted direct cost ratio** tells you, regardless of the initial cost of a procedure, how much more the procedure would cost in the event of a complication, mortality, or both.

DEVELOPING A MODEL FOR HOSPITAL DIRECT COSTS

To understand the relationship between hospital direct costs and medical outcomes, each model utilized patients in diagnostically and procedurally similar groups or cohorts. The resulting models suggested strong statistical fits. The Indiana Statistical Consulting Center (ISCC) independently evaluated the Healthgrades methodology for statistical validity.

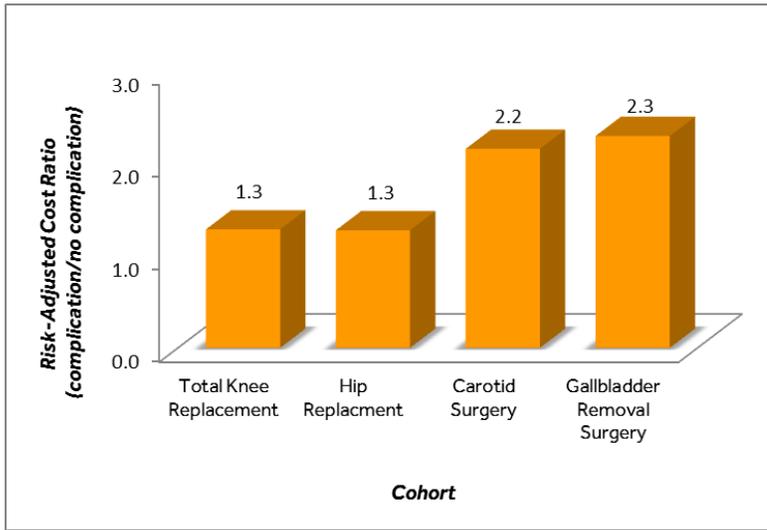
SPECIFIC COMPLICATIONS IMPACT DIRECT COSTS

Specific complications, such as sepsis in Gallbladder Removal Surgery can increase the risk-adjusted direct cost 2.3 times.

Additionally, the risk-adjusted direct cost for Gallbladder Removal Surgery cases with Sepsis resulting in mortality is 4.9 times higher than cases that do not result in mortality.

Source: Convenience sample of data from 57 hospital locations.

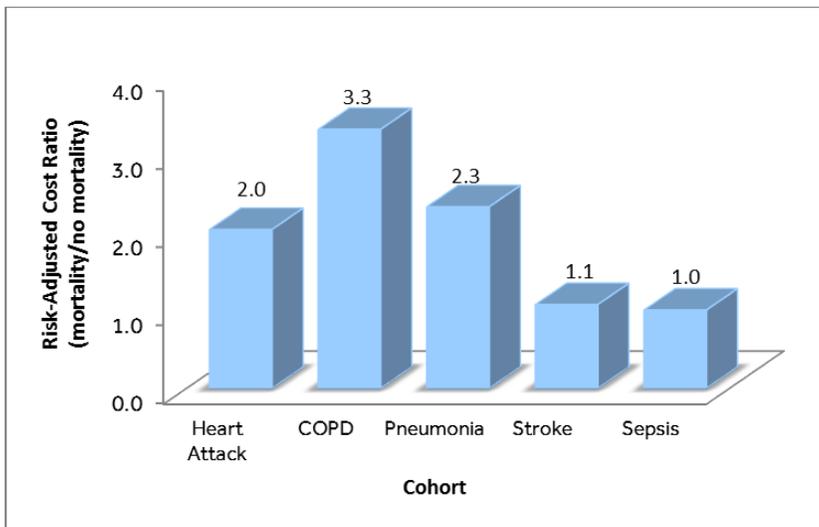
Figure 1: Complications - Proportion of Increase on Risk-Adjusted Direct Costs



Mortality Increases Costs Three-Fold

We found that mortality can increase the average risk-adjusted direct hospital cost as much as 3.3 times when measured across five of the six key mortality cohorts featured in this report. (The newest mortality cohort, Colorectal Surgeries, was not available at the time of this analysis). Similar to the impact observed for complications, if treating a patient for a specific condition typically costs \$15,000 in cases where the patient does not die during the hospital stay, it may cost anywhere from \$16,500 on the low end to \$49,500 on the high end, if the patient dies during the hospital stay. The lowest proportionate increase in direct costs was observed in Sepsis (1.0 times). The highest proportionate increase was observed in COPD (3.3 times) (see Figure 2).

Figure 2: Mortality - Proportion of Increase on Risk-Adjusted Direct Costs



THE HEALTH INSURANCE MARKETPLACE

The Marketplace is a new way to find quality health coverage. It can help if you don't have coverage or if you have it but want to look at other options.

With one Marketplace application, you can learn if you can get lower costs based on your income, compare your coverage options side-by-side, and enroll.

TIPS FOR SHOPPING THE MARKETPLACE

1. Determine your needs. Before you start comparing plans in your area, think about what types of care you need. Do you visit the doctor often? Do you need surgery soon? Do you take medications frequently?

2. Review your options. Plans are categorized into bronze, silver, gold and platinum. They differ by how much you pay for healthcare services vs. how much the insurance company pays. They also differ by provider choice. The more expensive the plan, the more provider choices you have.

3. Evaluate performance. As you begin to compare plans, consider the network of providers available to you. You have access to this information through the Marketplace. You can look at hospital quality performance and provider patient satisfaction ratings on www.healthgrades.com.

4. Check your budget. Your budget is a practical matter. You still want to check that your most affordable plan gives you a choice of high-quality doctors and hospitals to meet your specific medical needs.

10 ESSENTIAL HEALTH BENEFITS

The Affordable Care Act requires that all plans cover a range of care categories. These are essential health benefits. However, the law does not define specific services, amounts, or duration of care. Therefore, it is important to read the details of each plan.

The 10 categories of essential health benefits are:

1. Ambulatory patient services
2. Emergency services
3. Hospitalization
4. Maternity and newborn care
5. Mental health and substance use disorder services including behavioral health treatment
6. Prescription drugs
7. Rehabilitation and habilitation services and devices
8. Laboratory services
9. Preventive and wellness services and chronic disease management
10. Pediatric services including oral and vision care

Costs Multiply With Both Complications and Mortality

The increase in direct hospital cost is compounded when complications and mortality occur during the same hospital stay. Across the four complication cohorts, in patients who experienced complications and then died during the same hospital stay, total hospital risk-adjusted direct cost ranged from 2.0 times to 3.8 times more compared to a patient who survived with no complications.

If the cost of complication free Hip Replacement Surgery typically costs \$9,370, for example, our study shows that it will cost \$19,208, on average, for cases where a patient experiences complications and then dies during the hospital stay.

Length of Stay Contributes to Direct Costs

Length of stay (LOS) has the largest impact on risk-adjusted direct cost, regardless of condition or procedure. Our findings showed that length of stay is the single strongest predictor of direct costs. LOS accounts for 31% to 68% of the total variation in direct hospital costs across the different procedure categories evaluated. This means differences in LOS have a greater impact on direct cost than any other variable in the model.

Geographic Variation in Direct Hospital Costs

Our preliminary results show that complications or mortality (or both) significantly impact length of stay (LOS) and risk-adjusted direct hospital costs. We observed substantial variation from hospital to hospital in the exact proportion of these increases. The results provide insight into the role hospital performance plays in direct hospital costs. But as is the case with convenience samples, the hospitals in this analysis may not serve as a representative sample of all hospital types, locations, payer mixes, or ownership status (non-profit or for-profit).

A larger study planned in the near future will focus on state-to-state and local differences, as well as the impact on hospitals with 5-stars compared to those with 1-star in specific conditions and procedures.

Mortality and Length of Stay in Minimally Invasive Surgery

Minimally invasive surgery involves one or more small incisions, using a laparoscope (a thin, lighted tube with a camera on the end) to allow the surgeon to visualize and conduct the procedure through the small incision, instead of a larger open-skin surgical incision. Studies have shown that many minimally invasive procedures are associated with lower mortality rates, shorter length of stay, and require a shorter recovery period, permitting patients to return to their normal activities more quickly.^{9,10,11}

Because of the link between some minimally invasive procedures and lower mortality rates, Healthgrades took a closer look at seven colon resection/excision surgeries from our Colorectal Surgery cohort, which can be performed using either laparoscopic technique or open surgery (see list in sidebar). We analyzed MedPAR data from the most recent study period (2010-2012) for 252,610 patient records in 2,501 hospitals across the nation, comparing mortality and length of stay associated with each type of surgical approach.

WHAT YOU CAN DO TO BECOME AN INFORMED HEALTHCARE CONSUMER

To stay informed and prepared as a consumer, before you become a patient, you can:

- *Access healthcare quality information* and learn about how well doctors and hospitals treat other patients before choosing one that is right for you.
- *Collect information about a specific hospital's performance* on conditions and procedures that apply to you. This way, you will make informed decisions about your healthcare.
- *Research specific hospitals and physicians* to determine your risk of experiencing a complication or dying in the hospital.
- *Learn about important quality measures* like mortality and complication rates, patient experience, and patient safety, to understand how they are associated with hospital performance.
- *Know how to stay as healthy and informed* as possible and how to keep small health problems from becoming bigger ones.

PROTECT YOURSELF FROM COMPLICATIONS

How do you protect yourself from hospital complications? www.bettermedicine.com/article/protecting-yourself-from-hospital-complications

OPEN VERSUS LAPAROSCOPIC SURGICAL OUTCOMES

We analyzed MedPAR data from the most recent study period (2010-2012) for 252,610 patient records in 2,501 hospitals across the nation, comparing clinical outcomes associated with each surgical approach.

The seven surgeries analyzed represent nearly 70% of the total volume in the Colorectal Surgeries cohort include:

- Multiple Segmental Resection of Large Intestine
- Partial Excision of Large Intestine
- Resection of Transverse Colon
- Right Hemicolectomy
- Left Hemicolectomy
- Cecectomy
- Sigmoidectomy

Mortality in Colon Resection/ Excision Surgeries

Our analysis showed that overall risk-adjusted inpatient mortality rates were higher in open surgeries compared to laparoscopic surgeries for these seven colon resection/excision surgeries, specifically:

- The average risk-adjusted in-hospital mortality rate in patients undergoing open colon resection/excision surgeries was 5.9%, compared to 2.4% for those having laparoscopic surgery. This means patients have a 2.5 times greater risk of dying from open compared to laparoscopic surgery.

Length of Stay in Colon Resection/Excision Surgeries

Length of stay also varies between open and laparoscopic procedures. After risk-adjusting for patient characteristics and removing mortality cases, the average length of stay for a patient undergoing a laparoscopic colon resection/excision procedure is 6.3 days. When compared to the average of 10.4 days for an open surgical procedure, the laparoscopic approach results in a 39.4% reduction in the length of stay at the hospital.

Deciding Which Type of Surgery Is Best for You

It is important to remember that every surgery has risks. In making a decision on which type is best for you, it's important to understand your condition and your surgery. Ask your surgeon about problems he or she has encountered with each surgical approach, and ask about your specific risks for both open and laparoscopic surgery. Learn about the minimally invasive approach and discuss it with your doctor to determine if it would be an appropriate option for you.¹²

Consumers need to access resources available to them, research specific information about where and from whom to obtain care for specific conditions and procedures, and then apply the information to make decisions about healthcare for themselves and their loved ones.

QUESTIONS TO ASK ABOUT DIFFERENT TYPES OF SURGERY

To make the right decision on whether laparoscopic or open surgery is best for you, ask your doctor the following questions.¹²

- **Are there other ways of treating this?**
Learn about how well doctors and hospitals treat other patients before choosing one that is right for you.
- **What percent of these operations are done open versus the minimally invasive way in the U.S.?** Understanding how many patients across the nation have had successful outcomes for each type is important.
- **What percent of these operations do you do open versus the minimally invasive way?** Studies show that when physicians do more of a specific type of surgery, patient outcomes are better.
- **What are the differences in complication and mortality rates for each?**
You will need to understand what types of complications are associated with each type and your chances of experiencing one.
- **How many days will I be in the hospital if I have it done one way versus the other?**
You should err on the side of less is more in terms of staying in the hospital. Understand the extent of your recovery with each type.
- **What is the difference in cost between the open and minimally invasive procedure?**
The more days in the hospital, the more costly it is for hospitals to care for you. Complications also increase the cost of your care, and take you away from normal activities if you need to stay in the hospital to recover.

LEARN MORE ABOUT QUALITY AT THE HEALTHGRADES QUALITY CENTER

The Healthgrades Quality Center provides you with information about:

- How well hospitals and doctors are performing when treating patients
- How quality is measured in healthcare, what the measurements mean, and why they matter
- How to use quality information to make a choice or decision that improves your health the most

www.healthgrades.com/quality

Summary

The Healthgrades 2014 report on American Hospital Quality adds additional data to a growing set of evidence that a focus on quality can both improve outcomes and lower the costs associated in delivering that care.

Key takeaways include:

1. Variations in clinical outcomes continue to exist, even within the same city. Do not assume the closest hospital is the best for the necessary procedure.
2. Higher complication and mortality rates not only have a personal impact to those patients, they have a financial impact to the organization and all healthcare consumers.
3. Minimally invasive procedures, when clinically appropriate, can help lower mortality rates and length of stay, and likely, direct hospital costs.
4. Every healthcare stakeholder has a role to play in improving outcomes and lowering costs.

Perhaps the timeliest of all conclusions, given the current focus on healthcare quality, cost and choice, may be this:

*Your choice of health plan and associated network of physicians and hospitals may influence the outcome of your care. Make your decision count by looking at complication and mortality rates and other quality information first.
Choose wisely—you want the best outcome possible.*

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HOSPITAL PERFORMANCE CATEGORIES

credible consumer healthcare information. Since 1998, the company has provided consumers critical information at the time they need it most: when selecting a physician or hospital to care for themselves or family members.

Based mainly upon federal data, Healthgrades consumer information includes:

- Risk-adjusted hospital quality outcomes based upon analysis of the Centers for Medicare and Medicaid Services (CMS) MedPAR data.
- Hospital readmission rates and timely and effective care measures based on the CMS Hospital Compare Report.
- Hospital patient experience metrics based on Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data.
- Hospital patient safety performance outcomes for 13 indicators of patient safety developed by the Agency for Healthcare Research and Quality.
- Information on more than 900,000 physicians in all 50 states and the District of Columbia.

How Healthgrades Measures Hospital Performance

Every year, Healthgrades analyzes three years of Medicare Provider Analysis and Review (MedPAR) data to produce a detailed report on mortality and complication rates in America's hospitals. Healthgrades findings empower consumers to evaluate and compare hospital performance. Healthgrades analyzed approximately 40 million Medicare-patient records for nearly 4,500 short-term, acute care hospitals nationwide, assessing hospital performance relative to each of 31 common conditions and procedures.

The Healthgrades methodology uses multivariate logistic regression to adjust for patient demographic and clinical risk factors that influence patient outcomes in significant and systematic ways. Risk factors may include age, gender, specific procedure performed, and co-morbid conditions, such as high blood pressure and diabetes. Individual risk models are constructed and tailored for each of the 31 conditions or procedures relative to each specific outcome (*see Table 1*).

Model outcomes reflect clinical-based measures of patient disposition during and after care and include in-hospital complications, or in-hospital and 30-day post-admission mortality. Detailed information on our methodology may be found at [2014 Healthgrades Hospital Quality Methodology](#).

Healthgrades groups hospital quality performance into three categories:

- **5-stars** reflect hospital performance that is statistically better than expected in treating a condition or conducting a procedure, as measured by clinical outcome rates for risk-adjusted mortality and complications.
- **3-stars** reflect hospital performance that is not statistically different than expected in treating a condition or conducting a procedure, as measured by clinical outcome rates for risk-adjusted mortality and complications.
- **1-star** reflects hospital performance that is statistically worse than expected in treating a condition or conducting a procedure, as measured by clinical outcome rates for risk-adjusted mortality and complications.

Detailed performance information, such as cohort-specific outcomes data and quality achievements for individual hospitals may be found at www.healthgrades.com/find-a-hospital.

Table 1. Healthgrades Mortality & Complication Rate-Based Procedures in 2014 Fall Release (2010-2012)

Mortality Rate-Based Conditions and Procedures by Specialty Area
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Cardiac Surgery

- Coronary Artery Bypass Graft (CABG) Surgery
- Valve Surgery

Coronary Intervention

- Coronary Interventional Procedures (Angioplasty, Stent)

Critical Care

- Pulmonary Embolism
- Diabetic Emergencies
- Sepsis
- Respiratory Failure

Gastrointestinal

- Bowel Obstruction
- Colorectal Surgeries*
- Esophageal/Stomach Surgeries*
- Gastrointestinal Bleed*
- Small Intestine Surgeries*
- Pancreatitis

Heart Attack

- Heart Attack

Heart Failure

- Heart Failure

Neurosurgery

- Neurosurgery

Pulmonary

- Pneumonia
- Chronic Obstructive Pulmonary Disease (COPD)

Stroke

- Stroke

Complication Rate-Based Procedures by Specialty Area

Joint Replacement and Treatment

- Hip Fracture Treatment
- Hip Replacement
- Total Knee Replacement

Prostate Surgeries

- Prostate Removal Surgery*
- Transurethral Prostate Resection Surgery*

Spine Surgery

- Back and Neck Surgery (without Spinal Fusion)
- Spinal Fusion

Electrophysiology

- Pacemaker Procedures*
- Defibrillator Procedures*

Other Vascular Procedures

- Abdominal Aortic Aneurysm Repair
- Peripheral Vascular Bypass
- Carotid Surgery

Gastrointestinal

- Appendectomy
- Gallbladder Removal Surgery

*New cohorts introduced in 2014 Fall Release