Dear Neighbor,

At Inova, we strive to ensure our patients and our communities have quality of care information available to them to make their health care decisions easier. We take this opportunity to reflect on the past 12 months and share our progress with you on a number of key quality, safety and patient experience measures.

2017 was a year of significant achievements. We are particularly proud of the gains we made this year in reducing patient harm, improving patient experience, and reducing the number of patients who experience unplanned hospital readmissions. In addition, we received a number of accolades from external organizations, including but not limited to:

- Three of our 5 hospitals (Inova Fairfax, Inova Fair Oaks & Inova Mount Vernon) received a CMS Hospital 5-star designation, making us the first 5-star rated hospitals in the entire Washington, DC region. Only 9% of hospitals across the country achieved a 5-star rating.
- Three of our 5 hospitals (Inova Fair Oaks, Inova Loudoun & Inova Mount Vernon) received an “A” safety grade from The Leapfrog Group, a recognition only achieved by 30% of close to 2,500 hospitals across the country. With the April 2018 update, both of our other two hospitals have a “B” grade and just missed the mark of receiving an “A.”
- Four of our 5 hospitals (Inova Alexandria, Inova Fairfax, Inova Fair Oaks & Inova Loudoun) received Healthgrades Clinical Excellence designation, representing the top 5% performance of hospitals nationally.*

This year’s report summarizes year-end data in many key quality, safety, and patient experience categories.

For the rest of 2018 and going forward, we will continue our focus on creating an excellent patient experience, with a particular focus on further reducing infections and other patient harm.

As you read the examples of the effective quality improvement programs across Inova this year, know that our programs’ success depend on the people who implement them. Their focus on maintaining quality and safety standards for every patient, every day is what makes a difference. We are fortunate to have an outstanding group of people at Inova, and we thank them for their commitment to our patients and our community.

Sincerely yours,

Loring S. Flint, MD
Executive Vice President
Chief Medical Officer

Deneen M. Richmond
Vice President, Performance Improvement & Outcomes

*Based on patient volumes for certain conditions, Inova Mount Vernon was not eligible to be evaluated for the Healthgrades Clinical Excellence designation.
Acknowledgements

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Overview

On behalf of our 16,000 employees, we are pleased to present Inova’s 2017 Quality Matters report to our community. This is Inova’s sixth annual public report on key quality and safety metrics. As an organization on a high reliability journey and a culture of safety, Inova places a high value on transparency and accountability.

Healthcare organizations are continuing to zero in on the issue of patient harm. The issue of patient harm and patient safety first gained national attention in 1999 after a study published by the National Institute of Medicine of the National Academies concluded that 98,000 patients die each year as a result of preventable medical errors, adverse events, infections, and other instances in which patients are harmed. Later studies put the number much higher.

National initiatives like the Center for Medicare and Medicaid Services (CMS) Partnership for Patients, which aims to reduce hospital-acquired conditions by 20 percent, are helping healthcare organizations focus their energies within the complex and dynamic healthcare environment. The first step toward solving this problem is engaging all stakeholders – patients, families, hospitals, doctors, nurses, government agencies, and private sector partners – in the issue. We hope that this quality report helps to continue this important national conversation.

The report’s organization reflects our focus on outcomes-related data covering patient safety, clinical care and patient satisfaction. Section 1 of this year’s report covers various types of patient harm, including infections, measures of serious complications, serious reportable events hand hygiene compliance and adverse drug events. Additionally, this year we have included Early Elective Deliveries and C-section rates. Section 2 includes patient outcomes, including readmissions, patient mortality, and patient experience. In section 3, we highlight examples of improvement-focused changes Inova teams made in 2017, including quality award-winning programs as well as additional system wide programs.

To give readers a broader context to understand the data’s importance, each of Inova hospital’s performance is placed alongside relevant external benchmarks, either government issued statistics or reliable comparative data from the Premier healthcare alliance, which includes over 1,200 hospitals across the country. Data from previous years is also included in this report for comparison. Following each section’s data summaries are details about where Inova is focusing improvement efforts moving forward.
Quality Highlights for 2017

Overall Hospital Rating by Patients

75% Excellent
4 hospitals improved ratings and 3 out of 5 hospitals rated better than the national average.

Communication with Patients

Patients Reporting Doctors ‘Always’ Communicated Well
- 82%

Patients Reporting Nurses ‘Always’ Communicated Well
- 81%
- 3 out of 5 hospitals met the national average.
- 3 hospitals exceeded the national average.

Central Line-Associated Bloodstream Infections

3
3 out of 5 hospitals met the average performance goal for CLABSI.

Inova overall showed significant improvement with a rate of 0.976 which is a continued downward trend.

Discharge Instructions

Patients Felt They Were Appropriately Prepared for Discharge

4
4 out of 5 hospitals improved or sustained performance in the last two years.

Measures of Serious Complications

4 out of 5 hospitals exceeded the average performance goal of 0.91 for all patients.

1.49 out of 5 hospitals exceeded the national average performance goal of 1.49 for Medicare patients.

Hand Hygiene Compliance

+8% Improvement
Inova overall showed major improvements from 2016.
Section 1: Patient Harm Indicators

Healthcare-associated infections

What they are:
Healthcare-associated infections (HAIs) are infections that a person contracts while receiving medical care for another condition. Nationwide, HAIs are a significant cause of patient harm and patient deaths. Low HAI numbers indicate that a hospital is doing a good job of preventing infections.

Why it matters:
HAIs cause patient harm and may unnecessarily extend the need to remain in the hospital to be treated. HAIs can, in most cases, be prevented by following guidelines for safe care.

How HAIs are calculated:
HAIs are reported using a standardized infection ratio (SIR), which is a calculation that compares the actual number of infections in a hospital to an expected number, based on national benchmarks and adjusted for risk factors about the type of care the patient is receiving as well as other patient risk factors. The CMS SIR benchmarks will be different for each infection type and are based on national performance for that type of infection. Lower SIRs represent better-than-expected infection rates. A score of zero — meaning no infections — is best. When the number of expected infections is less than one, a SIR is not calculated. In those instances, the graph will note this by indicating the SIR is “Not Reported” (NR).

In this year's report, Inova has divided HAI data into four charts that report data for three of the most common and costly HAIs: central line-associated blood stream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs), Clostridium difficile (C. diff) and surgical site infections (SSI) after colon surgery and abdominal hysterectomy. Note: Per the CDC, there is a “rebaseline” which refers to updating the NHSN’s benchmark to 2015. This allows for better risk adjustment and comparison. Data from previous reported measures in previous Quality Matters reports will differ. https://www.cdc.gov/nhsn/pdfs/rebaseline/faq-general-rebaseline.pdf

Notes on HAI data
In comparing data points on these infection charts, it is helpful to remember that the Inova Fairfax Medical Campus is the largest hospital in the Inova system and the only tertiary care center. The Inova Fairfax Medical Campus has higher patient volume and a greater complexity of cases, and is expected have a higher number of infections. Other Inova hospitals have low expected numbers of infections relative to the Inova Fairfax Medical Campus. Therefore, a single infection at, for example, Inova Loudoun Hospital can result in an SIR higher than the CMS benchmark. The goal across Inova is always zero infections.
CLABSI: Central Line Blood Stream Infections

What they are:
A central line is a tube that is inserted into a large vein of a patient’s neck or chest to deliver medications. Central lines can be an easy way for germs to enter the body when they are not put in correctly or maintained clean, or are left in for a long period of time.

How they are prevented:
CLABSIs can be largely prevented by using central lines only when they are needed, using good infection control steps to insert them, keeping them as clean as possible, and removing them as soon as they are no longer needed.

CAUTI: Catheter-Associated Urinary Tract Infections

What they are:
A urinary catheter is a tube inserted into a patient’s urinary bladder that is left in place to collect urine. When a urinary catheter is incorrectly inserted, not maintained properly, or left in for long periods of time, it can become an easy way for germs to enter the body and cause a urinary tract infection. In those cases, the infection counts as an HAI because the catheter contributed to it.

How they are prevented:
Like CLABSIs, CAUTIs can be largely prevented by using catheters only when they are needed, using good infection control steps to insert them, keeping them as clean as possible, and removing them as soon as they are no longer needed.
Chart 2: Catheter-associated Urinary Tract Infections

Lower is better

Goal: 0.822
**Clostridium difficile (C. diff)**

**What they are:**
C. diff is a type of bacteria that causes inflammation of the colon. Many people have these bacteria in their intestines and never have any symptoms. However, if they are taking strong antibiotics for too long, the antibiotics may kill enough of the healthy bacteria inside of the body and allow C. diff to grow unchecked and make you sick. C.diff infections can also occur without taking antibiotics if you are exposed to the bacteria, especially for people who have a weakened immune system.

**How they are prevented:**
C. diff is contagious and can be spread from person-to-person by touch or by direct contact with contaminated objects and surfaces. C. diff infections can be prevented by strict hand washing, appropriately sanitizing all medical equipment and the environment, and using isolation precautions for patients with signs and symptoms of a C. diff infection. C.diff can also be prevented by using the right antibiotics for only as long as necessary.
**Surgical Site Infections (SSIs)**

**What they are:**
Surgical site infections occur when germs enter the body following surgery and cause serious infections to the skin, tissues under the skin, body organs or implanted material. SSIs can be especially high after colon surgeries.

**How they are prevented:**
The risk of an SSI can be prevented by following evidence-based processes of care, appropriate use and timing of preventive antibiotics, following pathways to enhance a patient’s early recovery after surgery, and other basic prevention strategies.

Chart 5: With the exception of Inova Fairfax, all of the other Inova hospitals had SIRs Not Reported (NR) due to the lower volume of abdominal hysterectomy procedures.
Hand Hygiene Compliance
Hand hygiene is the single most important thing healthcare providers can do to prevent an infection. In 2015, Inova began a system wide hand hygiene campaign aimed at improving hand hygiene compliance through accountability.

What we are doing:
In 2017, Inova remains committed to improving hand hygiene through peer-to-peer coaching as well as patient feedback. In addition to compliance observations and reporting, Inova uses internal checks and real-time coaching to improve compliance. Staff are trained in the World Health Organization’s “5 Moments for Hand Hygiene” protocol, which requires proper handwashing at five points: before patient contact, before an aseptic task, after body fluid exposure risk, after patient contact and after contact with a patient’s surroundings.¹

Inova’s improvement focus for healthcare-associated infections
Infection prevention depends on many things because there are many contributing factors that must be taken into account. Each Inova hospital has implemented process improvements and strategies that are widely known to reduce infections. Prevention bundles are groups of evidence-based guidelines and best practices from the content experts at the Centers for Disease Control and Prevention (CDC) and other agencies. Prevention measures for each type of infection are bundled together to form a consistent, evidence-based infection prevention practice. For example, a bundle to prevent a CAUTI includes only inserting an indwelling catheter when needed, using sterile technique to insert the catheter, keeping the area around the catheter clean, positioning the drainage bag below the level of the bladder at all times, and removing the catheter as soon as it is no longer medically needed.

Inova's infection prevention experts work with the doctors, nurses and other staff to educate, train and monitor that we are following the prevention bundles and all evidence-based practices to prevent infections. We regularly review each piece of the process to assess how we can improve and "hardwire" the practices into the way we deliver care.
Measures of Complication of Care

There are a number of patient safety indicators (PSIs) that were developed by the Agency for Healthcare Research and Quality (AHRQ), \(^2\) that measure how often patients had serious complications that are potentially preventable. Examples include blood stream infections after surgery, blood clots in the lung or a large vein after surgery, and pressure ulcers or bed sores.

### Why it matters:
When a patient develops a complication during their care, it can cause pain and suffering, may require a transfer to a higher level of care and can lead to a longer hospitalization.

### What is in the PSI-90 composite:
The PSI-90 Composite is a weighted average of the observed-to-expected ratios for 8 patient safety indicators, or complications:\(^3\)

- **Pressure Ulcer Rate** – Pressure ulcers, commonly known as bed sores, are injuries to a patient’s skin and tissue resulting from constant pressure over an extended period of time. People who are not mobile or who have trouble changing position are at greater risk of developing pressure ulcers, including hospitalized patients and people in wheelchairs. PSI-3 measures the percentage of patients who develop severe pressure ulcers while in the hospital.

- **Iatrogenic Pneumothorax Rate** – An iatrogenic pneumothorax is a lung injury, which can occur as a result of certain medical procedures. It occurs when air leaks into the space between the lungs, causing chest pain, pressure and shortness of breath. PSI-6 measures the percentage of patients who experience this complication.

- **Central Venous Catheter-Related Blood Stream Infection Rate** – Sometimes a patient may have a catheter inserted into a vein to make it easier to administer fluids or medicine. Another name for a central venous catheter is a “central line.” If the catheter’s insertion site becomes infected, it can cause serious blood infections, called central line-associated blood stream infections, or CLABSIs. PSI-7 measures a hospital’s CLABSI rate per AHRQ specifications. Note that AHRQ’s definition differs from the surveillance definition developed by the Centers for Disease Control and Prevention (CDC) that is used in the healthcare-associated infections section above.

- **Postoperative Hip Fracture Rate** – Patients can be susceptible to fractures after surgery. However with proper care, most fractures can be avoided. PSI-8 measures how many surgical patients break a hip after surgery.

- **Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate** – A pulmonary embolism (PE) is a life-threatening condition that occurs when a blood clot breaks off,
travels through the blood stream and becomes lodged in the lungs. Deep vein thrombosis (DVT) is a blood clot in a deep vein. PSI-12 measures these two serious complications that can largely be avoided through proper preventative measures.

- Postoperative Sepsis Rate – Sepsis is a life-threatening condition that arises when the body’s response to an infection injures its own tissues and organs. PSI-13 measures postoperative sepsis, a rare complication of surgery when sepsis occurs shortly after surgery and affects one or more body organs.

- Postoperative Wound Dehiscence Rate – PSI-14 measures how often patients’ surgical wounds in the abdominal or pelvic area re-open after surgery. Good post-surgical care should prevent wound dehiscence.

- Accidental Puncture or Laceration Rate – PSI-15 measures how often patients are harmed by an accidental puncture or cut (laceration) during surgeries or procedures.
Inova’s improvement focus for patient safety indicators

One of the PSIs (PSI-12 PE/DVT) is heavily weighted in the composite score. Most of each hospital’s PSI rate can be attributed to a single indicator: PSI-12, blood clots that develop after surgery and become lodged in the lungs or clots that develop in a deep vein. To reduce these blood clots, Inova has focused on the following:

- Assessing each patient’s unique risk for developing a blood clot and making the results of these assessments easily visible in the electronic health record to everyone on the care team so that the right treatment plans are followed
- Making sure that patients wear special stockings and use sequential compression devices to improve circulation in the legs
- Increasing how quickly patients are out of bed and walking after surgery

A Clinical Effectiveness Sprint on Mobility began in 2017 to aim at improving ambulation and mobility for patients to help reduce risk of pressure ulcers/DVTs. Patients in acute care or ICU/step down units are at most risk for pressure ulcers. The Mobility protocol focused on progressive mobility including bed positioning, supine exercises, transfers, ambulation in room, and ambulation of out room.
Serious Harm Events
A serious harm event\(^4\) is an adverse event in which a patient suffers death or serious harm because of an error that is usually preventable. They include injuries that occurred during the patient’s care (not due to the patient’s disease) as well as harm that occurred because a healthcare worker did not follow standard care or hospital protocols.

It is important to note that an increase in the number of serious harm events is not likely to be the result of an increase in events. Rather, because of Inova’s system wide focus on increased reporting, increased numbers are more likely the result of better data capture.

Inova’s improvement focus for serious reportable events

Falls
Most of the serious harm events at Inova in 2017 were falls. Improvement teams made several changes to the process for assessing each patient’s risk of falling while in the hospital, using a valid and reliable tool. We have identified fall risk interventions customized to the patient’s risk for falls. These interventions include things like bed alarms and mats around the patient’s bed. In addition, we round more frequently on patients, assist patients to the bathroom, and share our findings and best practices across the system. Though some hospitals have improved their fall occurrences in 2017, we remain focused on identifying causes and prevention strategies. The Mobility Clinical Effectiveness Sprint protocol included mobilizing patients faster to build their strength, thereby reducing risk of falls.

High reliability culture
Since 2015, Inova has focused on developing each hospital’s culture of reliability. To that end, Inova’s current safety initiatives have several components, including regular safety checks and a redesigned safety event workflow. Reporting great catches and serious safety events are critical to developing a high reliability organization.

\(^4\) The serious harm event measurement was developed by the National Quality Forum (NQF). The NQF’s mission is to improve healthcare quality across the country by establishing and promoting shared quality standards. For more information, visit qualityforum.org.
Great Catches
Senior leadership and representatives from various departments meet every day to briefly discuss “great catches” (i.e., near misses) and safety events/concerns that have occurred in the last 24 hours and review the anticipated needs for the next 24 hours. The goal is to create an environment of open communication to mitigate risks and system failures that could potentially lead to events of patient and employee harm.

Reporting great catches, precursor safety events and serious safety events are critical to a high reliability culture. Creating a user-friendly process to report safety events is one component of this process. Another part is streamlining the workflow and creating a process to notify leaders of high harm safety events in real time. The real time element is essential to ensure teams deploy adequate resources right away.
Section 2: Patient Outcomes

In healthcare, we are shifting away from some process measures – that look at the things healthcare providers should do, to outcome measures – that look at what happened to a patient as a result of the care he or she received. For example, patients coming in with a heart attack should expect certain processes to always occur, such as receiving intervention within a certain amount of time and receiving certain medications during and after hospitalization.

Patient death rates and readmissions are two important outcome measures. For both of these measures, Inova benchmarks its results against the performance of the Premier healthcare alliance. A score of 1.0 indicates that there is no difference between the hospital’s actual rate and the expected rate. A score of less than 1.0 means hospital performance is better than expected based on patients’ medical condition and risk profile. A score of greater than 1.0 means that the hospital performance was worse than expected based on the same risk parameters. Note: There was a recalibration of data due to the shift from ICD-9 to ICD-10 for all outcome measures such as Readmissions and Mortality. Data in previous Quality Matters reports will be different from this year’s report due to recalibration.

Severity-Adjusted Patient Death Rates
A hospital’s mortality (death) rate refers to risk-adjusted information about the number of people who die while in the hospital. In other words, the death rate takes into account how sick patients were when they were hospitalized, as well as a person’s age, medical condition and other risk factors that may increase the likelihood of death. Risk-adjusting the death rate is necessary to have fair and meaningful hospital comparisons, since some hospitals treat sicker patients. Death rates provide information about important aspects of hospital care that can affect patients’ outcomes – such as prevention of complications and early recognition and response to a change in a patient’s condition. Thus, data about a hospital’s death rate can be an important indicator of that hospital’s overall quality.

![Chart 10: Severity Adjusted Death Rates](image.png)
Inova’s Improvement Focus for Severity-Adjusted Death Rates

In 2016, even though all five Inova hospitals performed better than expected on severity adjusted death rates, we are continuing to focus on reducing our death rates even further. Inova created a proactive plan to reduce sepsis deaths by early identification and management of sepsis patients. This plan includes new screening tools and order sets, metrics and reporting that help with early identification to aid in earlier treatment. The identification and treatment plans include patients in the Emergency Department, Critical Care, and Inpatient non-Critical Care. Treatment of sepsis is very time sensitive and the use of standardized screening tools will help to reduce sepsis death rates.
Unplanned Hospital Readmissions

Why it matters:
A hospital’s 30-day readmission rate is a quality indicator of whether a patient received high quality care while in the hospital and had an effective transition to care after the hospitalization. When a patient has an unplanned readmission to the hospital a short time after being discharged, it can indicate a problem that a patient developed as a result of the care they received, or it can indicate that the problem for which a patient was treated was not fully resolved. It could also indicate that the patient did not have the support they needed once they left the hospital, with follow up care, medications or community resources, and thus did not transition to the outpatient setting successfully.

In other cases, the readmission is unrelated to the care the patient received during a previous hospital stay. For example, a heart failure patient who is discharged from the hospital and breaks a leg in an automobile accident two weeks later would be counted, even though the trauma is unrelated to the previous admission for heart failure.

How it is measured:
The risk-adjusted rate takes into account risk factors such as a patient’s age, medical history, and other medical conditions that may make a readmission more likely. Accounting for differences in patients’ risk profiles ensures that hospitals are compared with each other fairly. Readmission data is presented as a ratio of a hospital’s observed readmission rate to its expected readmission rate (often called the observed-to-expected, or o/e, ratio) as mentioned previously.

Inova benchmarks its performance using Premier healthcare alliance data. Chart 11 shows three years of 30-day readmission data for all inpatients, all payers. In 2017, Inova’s system-wide rate (0.95) was better than expected. Five of the five Inova hospitals performed better than expected on all inpatient, all payers readmission.
30-day risk-adjusted readmission rates: all inpatients, all causes

Charts 12 – 17 show three years of 30-day readmission data for focused Medicare populations of individuals age 65 or older. For all of these charts, a rate less than 1.0 indicates that the hospital/system performed better than expected.

Heart attack readmissions

Chronic obstructive pulmonary disease readmissions
Heart failure readmissions

Pneumonia readmissions

Hip and knee joint replacement readmissions
Coronary Artery Bypass Graft (CABG) readmissions

CABG procedures are only performed at two of the Inova hospitals.

Inova’s improvement focus for readmissions

Inova remains focused ensuring the quality of discharge from the hospital and the transition to home, with particular attention to making sure patients are taking the right medications after they leave the hospital. Specific steps include:

- Identifying a patient with a high readmission risk at admission, using a predictive analysis tool in EpicCare, so that the right treatment plans can be put in place.
- Staffing each hospital’s emergency department with case management staff to make sure that patients who don’t need to be admitted get connected with the right level of care and services.
- Having our pharmacy team work with the patient and the rest of our care team to make sure we know all of the medications a patient is taking before coming to the hospital so that we can continue the medications they need; and make sure the patient knows which medications to start, continue, or stop after they leave the hospital.
- Educating patients about their health conditions and early warning signs that they may be getting worse so that they can seek treatment early and hopefully avoid the need for another hospital stay
- Connecting the patient to the right resources in the community after they leave the hospital to help them better manage their medical condition
- Conducting an analysis and audit of each readmission that occurs so that we can continue learning and get better at preventing future readmissions.
The graphic below shows how we are focusing our efforts to prevent readmissions:
Perinatal outcomes

This year, we are including outcomes for Early Elective Deliveries and Cesarean sections (C-Sections). Two out of four hospitals have met or exceeded the goal for early elective deliveries. C-sections are not yet publicly reported by CMS. While there are a number of factors that influence if a woman has a C-section, across the country there are efforts to decrease C-section rates. The four Inova hospitals where deliveries occur are working together to decrease C-section rates.
Patient Experience

Inova is committed to making each patient’s experience the best it can be. The Healthcare Consumer Assessment of Healthcare Providers and Systems (HCAHPS)\(^5\) is a CMS-mandated survey that tracks patients’ perception of their hospital experience. Using a standardized patient experience survey like HCAHPS allows Inova to compare its results directly with other hospitals.

To collect this data, each Inova hospital sent thousands of surveys to recently discharged patients: in 2017, Inova collected more than 11,000 survey responses system wide. It is important to note that even if there are multiple positive answer choices – for example, some questions ask the patient to rate on a scale that includes “never,” “sometimes,” “usually,” or “always” – only the most positive “top-box” answer counts. In this example, only a rating of “always” would count as a positive answer. In other words, if a patient reports that the hospital’s staff “usually” responded quickly to the call bell, that answer would count as a negative score.

The charts in this section show our patient experience results for the last three years, 2015 – 2017, with the CMS national average indicated for reference purposes by the green line on each chart.

**Note on patient experience charts:** although patient experience data is calculated to one decimal place, the charts in this report use data labels with whole percentage values. Slight differences in bar heights represent slight differences in percentages.

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\(^5\) HCAHPS was developed by CMS and AHRQ. Please note that these results may differ slightly from the official CMS HCAHPS results, because the case-mix adjustment that CMS applies to survey results may vary slightly from the simulated case-mix adjustment Inova has used to generate this data.
Nursing communication

The HCAHPS survey has three questions covering patients’ opinions of how well a hospital’s nurses communicated, including:

- how often nurses treated them with courtesy and respect,
- how often nurses listened carefully to them and
- how often nurses explained things in a way they could understand

Doctor communication

In the doctor communication category, patients were asked to rate the hospital on three aspects, including:

- how often doctors treated them with courtesy and respect,
- how often doctors listened carefully to them and
- how often doctors explained things in a way they understood.
Responsiveness of staff
The HCAHPS survey collects data on two aspects of staff responsiveness, measuring patients’ opinion of whether:

- their call bell was always answered quickly and
- they always received help right away when they needed to use the bathroom.

Pain management
In this HCAHPS category, patients were asked to rate their hospital’s effectiveness in managing their pain during their stay, including:

- how often their pain was well controlled and
- how often the hospital staff did everything they could to help relieve pain
Communication about medications
In this category, patients were asked about how well hospital staff explained medicines to patients before administering them, including:

- how often hospital staff explained what a new medicine was for before giving it to the patient and
- how often hospital staff clearly explained possible side effects of any new medicine before giving it to the patient

Cleanliness and Quietness
The subsets of question 25 are below
Discharge instructions
The discharge instructions portion of the survey collects data about whether patients felt they were appropriately prepared for discharge. In contrast to the previous categories, patients are asked to answer “yes” or “no” as to:

- whether someone on their healthcare team asked whether they had the help they needed when they left the hospital and
- whether they were given written information about symptoms or problems to look for after they left the hospital

![Chart 26: Patients who reported that YES, they were given information about what to do during their recovery](chart.png)
**Care transitions**

This category asks patients to rate how well the hospital prepared them to transition home from the hospital, including:

- whether staff took their preferences and those of their family or caregiver into account in deciding what my health care needs would be when they left,
- whether they had a good understanding of the things they were responsible for in managing their health and
- whether they clearly understood the purpose for taking each of their medications when they left

As Chart 27 shows, four out of five Inova hospitals had rates that were better than the national average.

**Overall rating**

This HCAHPS category asks patients to rate the hospital overall on a scale from 0 (worst possible hospital) to 10 (best possible hospital).

Chart 28 depicts what percentage of respondents selected the highest scores (9 or 10) in response to this question.
Likelihood to Recommend

This HCAHPS category asks patients about their likelihood to recommend the hospital. Chart 29 depicts what percentage of respondents selected the highest score (Definitely yes) in response to this question. This measure is a key focus in the 2018 Inova Strategic Plan.
Inova’s improvement focus for Patient Experience

Inova continued to demonstrate significant improvement in HCAHPS scores throughout 2017. Overall, we focused on the quality and consistency of how we provide care and interact with each other and with our patients every day. This improved teamwork and better aligned everyone on the care team (physicians, nurses, pharmacists, etc.) and all departments that deliver care and services to our patients. Some specific actions include:

- Creating standard processes that happen daily where the nurse and doctor connect face-to-face in the room with the patient/family to discuss plans for care and when the patient can go home.
- Seeking input from patients on how we can better deliver our care and services through their participation on patient and family advisory councils, as well as hospital committees.
- Providing coaching and using simulation environments with cameras and actions to help our care team practice ways to better communicate.
- Leader visibility and rounding to support our teams and ensure consistency with our work processes focused on improving patients’ experiences.
Section 3: Quality in Action/Iams Awards

Franklin P. Iams was the visionary founder of the Fairfax Hospital Association, the founding organization of Inova Health System.

Long before Inova was bricks and mortar, Mr. Iams envisioned a distinct, multi-hospital healthcare system with a single standard of quality, a single medical staff and a single approach to the patient experience. He inspired Inova’s commitment to continuous innovation, and established teaching and education as integral parts of Inova’s mission.

Named in his honor, the Iams Memorial Quality Leadership Awards reflect Frank Iams’ ideals and Inova’s focus on new ideas and new approaches. Applicants must demonstrate a measurable improvement in clinical quality, service or patient safety.

**We are proud to showcase our 2017 Iams awards winners:**

**Is This Stool Taken? Nearly Eliminating C. Difficile at Inova Loudoun Hospital**

Awardee: Inova Loudoun Hospital (Sustainability)

After winning a 2016 Iams Award for their efforts to reduce hospital-acquired C.difficile, staff at Inova Loudoun Hospital were inspired to improve the gains and pursue an even higher success rate.

C. difficile is a potentially life-threatening bacterial infection that can cause severe diarrhea and abdominal pain. With infections on the rise throughout 2015, a multidisciplinary team of physicians, nurses, lab techs, pharmacists, infection control specialists, and representatives from Informatics and Environmental Services implemented strategies that ranged from better hand washing compliance to use of the Diarrhea Decision Tree, appropriate order management and antimicrobial stewardship. Together, these strategies resulted in a 54 percent improvement in 2016, greatly exceeding the team’s original 20 percent reduction target.

For 2017, the team set an additional 50 percent reduction goal. Strategies included an aggressive hand hygiene compliance program for staff and targeted hand hygiene education for patients and families. These and other process changes produced dramatic results. Not only did the hospital exceed its original goal, it also nearly eliminated C. difficile infections with only one case the entire year – a 93 percent reduction from 2016 and 97 percent overall.

Next steps include possible changes to the Epic ordering process to head off inappropriate C. difficile testing, and a drive to include RisaQuad with every antibiotic order to prevent antibiotic resistance and improve patient outcomes. [Watch a video summary of Is This Stool Taken?](#)
**No Bugs – No Drugs**

Awardee: Inova Alexandria Hospital/Inova Mount Vernon Hospital Pharmacy (System)

Carbapenems are broad-spectrum antibiotics used to treat drug-resistant bacteria. However, they can raise the risk of C. difficile, create drug-resistant bacteria of their own and contribute to significantly increased hospital costs.

Inova Mount Vernon and Inova Alexandria Hospitals were using carbapenems, including meropenem, at a higher rate than other hospitals in the Inova system. The pharmacy team at both hospitals came together to find out why, and devise ways to reduce meropenem use by 10 percent by the end of 2017.

A root cause analysis revealed the need for better education and training of pharmacy staff on the appropriate use of meropenem, as well as better standards and accountability. The antimicrobial stewardship team at each hospital provided support to ensure the proper use, duration, dose and frequency of meropenem. The teams also explored the potential for de-escalating or discontinuing the drug altogether.

With these changes in place, both hospitals not only met the 10 percent reduction goal, but also had the lowest meropenem use in the Inova system for the first three quarters of 2017. Interprofessional engagement that includes clinical pharmacists, pharmacy staff and infectious disease physicians was fundamental to the program’s success.

Both pharmacies are now working to target other broad-spectrum and restricted antibiotics. [Watch a video summary of No Bugs – No Drugs.](#)

**SOS: Spotlight on Sepsis**

*Merrit Citation: Inova System*

Sepsis (the body’s extreme response to an infection) affects more than 1 million people annually. Hospitalized patients who develop sepsis have a greater than 40 percent mortality rate. Quality, regulatory and financial pressures have converged to position sepsis as a value-based purchasing and population health priority.

To meet this challenge, Inova established a systemwide, interdisciplinary Sepsis Clinical Effectiveness Team. The team leveraged the collective expertise of Informatics, Quality, Analytics, TeleICU and frontline staff to create a streamlined process for prompt screening and treatment of sepsis patients. Epic is used to enhance early detection and deploy standardized order sets, a Sepsis Huddle Checklist encourages evidence-based decision-making among staff, and Quality and Informatics work together to share monthly analytic reports with stakeholders, driving core measure compliance and improved outcomes.
In just one year, core measure bundle compliance increased from 59 percent to 70 percent. Sepsis mortality dropped more than eight percent systemwide, with 68 lives saved. And length of stay decreased by nearly 240 days.

Ongoing collaboration, coaching and mentoring of clinical staff are keys to continued success. In addition, sepsis prevention will be part of Inova’s 2018 Strategic Plan.

**Hand Hygiene Heroes**

Awardee: Inova Alexandria Hospital (Operating unit)

Handwashing is one of the simplest and most effective ways to keep patients safe and prevent hospital-acquired infections. Why then is it so hard to get staff to comply? With hand hygiene compliance at just 58 percent hospital-wide, Inova Alexandria Hospital leaders knew it was time to take action.

Hospitalists and managers joined together with Infection Prevention, Nursing and Quality to perform a root cause analysis. It revealed significant barriers, including:

- Staff complacency and lack of knowledge
- Inaccessible hand sanitizer/empty soap dispensers on many units
- Inability to communicate with noncompliant staff
- Inconsistent commitment from leaders

The team set out to address these issues and meet a goal to raise hand hygiene compliance to 85 percent by the fourth quarter of 2016. Tactics included behavior modification, positive reinforcement and return demonstration. Face-to-face meetings with the infection preventionist made an emotional impact on staff. Change did not happen overnight. But gradually, naysayers and resisters began to come around.

The last piece of the puzzle was support. With the commitment of hospital leaders, hand hygiene rates climbed 85 percent by the end of 2016 and continued to climb to 92% in 2017. Vigilance is key to ongoing engagement and success. [Watch a video summary of Hand Hygiene Heroes.]

**D-Liteful Pain Control**

**Merit Citation:** Inova Loudoun Hospital Emergency Department (Operating unit)

In the emergency department (ED), patients need rapid, effective and safe pain control. Opioids are among the most effectual treatments for acute pain, but with the United States in the grips of a national opioid epidemic, healthcare providers must re-think practical pain management.

Inspired by Inova Alexandria Hospital’s Iams Award-winning work to successfully decrease opioid prescribing, staff in the ED at Inova Loudoun Hospital sought to adopt evidence-based ordering practices to achieve similar results.

A multidisciplinary team of physicians, nurses and pharmacists convened to review prescribing practices. Using the same strategies as their Inova Alexandria Hospital counterparts, team
members looked for opportunities to reduce prescriptions of Dilaudid (hydromorphone), a potent opioid analgesic, and replace it with safer options.

By implementing alternative pain management strategies, and optimizing Epic and AccuDose settings, ED staff were able to decrease Dilaudid use by an astonishing 81 percent – from 11.7 orders per 100 patients per month to just 2.2 orders per 100 patients per month. Likewise, overall opioid orders fell 20.9 percent, saving more than $7,000 annually.

Multidisciplinary collaboration, communication and education, along with clear alignment of all disciplines to the overall goal, were keys to success. Next steps include expanding the initiative to inpatient units and promoting non-opioid alternatives.

**CVICU Alarm Fatigue**

Awardee: Inova Heart & Vascular Institute Cardiovascular Intensive Care Unit (Department)

Clinical alarms play an important role in keeping patients safe. However, widespread nuisance alarms (audible alarms that don’t require action) can have the opposite effect, creating “alarm fatigue” among staff.

At Inova Heart and Vascular Institute’s Cardiovascular Intensive Care Unit (CVICU), new bedside monitors had increased the frequency of nuisance alarms to more than 300 per bed per day – one every 12 seconds! In a survey, 100 percent of clinicians felt that nuisance alarms were disrupting patient care.

Nurses, clinicians and quality consultants teamed up to mitigate alarm fatigue and reduce the number of nuisance alarms by 25 percent. The team collected baseline data and studied evidence-based alarm parameters. By reconfiguring default alarm priorities for ICU patients, eliminating duplicate alarms in patient rooms and educating staff about appropriate alarm parameters, the CVICU reduced the total number of alarms per bed per day by nearly 30 percent, exceeding its goal. A post-intervention survey showed that most staff believe the new parameters are sufficient to alert them to changes in a patient’s condition. Nurses say they spend less time adjusting monitor values and more time on direct patient care.

Next steps include implementing similar alarm interventions in ICUs and telemetry units across Inova Heart and Vascular Institute. [Watch a video summary of Alarm Fatigue.](#)

**Saving Lives One EKG at a Time**

Awardee: Inova Emergency Room – Reston/Herndon (Department)

Patients who come to the emergency room (ER) with chest pain need rapid and effective assessment. Yet, EDs across the country often struggle to provide timely treatment to this patient population.

The American Heart Association recommends that any patient presenting at the ER with chest pain receive an electrocardiogram (EKG) within the first 10 minutes. At Inova Emergency Room –
Reston/Herndon, only 62% of patients met this benchmark. Staff set a goal to increase the number to 95%.

Despite diligent process improvement efforts, results remained far short of the goal. It wasn’t until everybody got out of their siloes and came together as an interdisciplinary team that real progress was made. Nurses and physicians joined with members of the Registration, Laboratory and Radiology departments to create “EKG Alert,” an early warning system for patients who present with symptoms of a potential heart attack. These patients are quickly identified and registered and all staff alerted so an EKG can be administered promptly.

In just one year, EKG Alert improved door-to-EKG time to an average of six minutes for 92% of patients with chest pain. Within 18 months, that number increased to 95%, including two months at 100%. Watch a video summary of Saving Lives One EKG at a Time.

Conclusion
We welcome your questions, comments, and suggestions about this report. To contact the Quality Matters team, please email us through the web link at www.inova.org/contactus.