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Case Study

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Memorial Healthcare System: A Public System Focusing on Patient- and Family-Centered Care

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Location: Broward County, Fla., north of Miami-Dade County.

Type: Public health care system.

Beds: 1,742 beds, including 301 at Memorial Hospital Pembroke, 1,014 at Memorial Regional Hospital and Memorial Regional Hospital South, 299 at Memorial Hospital West, and 128 at Memorial Hospital Miramar.

Distinction: Two Memorial Healthcare System hospitals scored in the top 1 percent of public and private U.S. hospitals on a composite of 23 process-of-care quality measures (Memorial Hospital Pembroke and Memorial Regional Hospital); two others scored in the top 5 percent of hospitals nationally (Memorial Hospital West and Memorial Hospital Miramar). More than 2,000 public and private hospitals were eligible for the analysis.

Timeframe: July 2007 through June 2008. See Appendix for full methodology.

This case study describes the strategies and factors that appear to contribute to high adherence to "core" quality measures at Memorial Healthcare System. It is based on information obtained from interviews with key hospital personnel, publicly available information, and materials provided by the hospital in September and October 2009.

SUMMARY

Memorial Healthcare System (MHS) has provided public hospital care in South Broward County, Florida, for 56 years.[1] Over time, the system has grown and diversified to include primary and long-term care, cancer care, and a dedicated pediatric hospital. Starting in 1993, MHS accepted responsibility for the county's public clinics and continues to operate these programs in an effort to coordinate

[1] For this case study series, public hospitals were defined as those that are government owned and/or members of the National Association of Public Hospitals. It was not possible to compare hospitals by their payer mix, since hospitals may define payer categories in different ways.

Exhibit 1. Staff Communication About the Recognition Program: Memoral Health System

The award recognizes outstanding employees for their achievements and commitment to providing a healing environment that is safe, efficient, customer focused, and of superior quality. As we strive to become the safest healthcare system in the nation, we salute our employees for always putting patients and families' needs first.

Nominations

Eligibility

All Memorial Healthcare System employees, with the exception of Department Leaders and Administrative Officers, can be nominated for the recognition program. Nominations can be made for individuals who exhibit extraordinary behavior, as outlined in the criteria below.

Review Process

To nominate fellow employees for this award, we ask that you please review the pillar-specific criteria below. Select the pillar that most closely illustrates the extraordinary behavior. We recognize that some behaviors will have characteristics that fall into more than one pillar category.

All nominations received will be automatically routed to the respective hospital or healthcare system entity where the nominated employee works. Each facility will have a designated committee to review the nominations and select the award recipients.

Pillar Criteria: Safety, Quality, Service

Safety Criteria:

- Individuals who go "above and beyond" for patient, family, or employee's safety
- Potential for harm is avoided
- Patient safety is a focus
- Identification of a situation that warrants immediate intervention
- Employee speaks up and is persistent regardless of hierarchal position or resistance encountered
- **An Incident Report must be completed and filed with Risk Management, when appropriate**

Quality Criteria:

- Challenges the "status quo" and attempts to promote change that benefits the organization
- Suggests and/or implements an idea that improves quality of care and increases productivity/efficiency
- Develops a new strategy for improvement
- Develops improved techniques
- Detects flaw/imperfection and brings to the attention of others

Service Criteria:

- Manager attestation
- Recognized by customers as consistently exceeding Memorial Healthcare System's Standards of Behavior
- Promotes optimism, teamwork, and collaboration on a consistent basis
- Recognizes others for their efforts in meeting or exceeding department/organization goals
- Respectfully welcomes open-minded and diverse opinions which creates a fertile environment for learning and collaboration
- Identified as a great mentor and/or wise counsel
- Excels at interdisciplinary collaboration

Source: MHS, 2010.

the use of outpatient and inpatient care and provide savings for taxpayers who help fund bad debt and charity care at MHS.

On average, public hospitals do not perform as well as private hospitals on the process-of-care, or "core," measures reported by hospitals to the Centers for Medicare and Medicaid Services (CMS). The core measures, developed by the Hospital Quality Alliance (HQA), relate to achievement of recommended treatment in four clinical areas: heart attack, heart failure, pneumonia, and surgical care. The differences in core measure performance between public and private hospitals are not well understood, but may relate to public hospitals having more complex patients, tighter budgets, or older infrastructure. MHS hospitals, however, scored very well on process-of-care measures, not only compared with other publicly owned hospitals but compared with all hospitals. All four Memorial hospitals were in the top 5 percent of hospitals on a composite measure, and two were in the top 1 percent (among more than 2,000 hospitals in the analysis covering the year ending June 2008).

MHS leaders have developed a multifaceted quality and safety strategy that relies on storytelling to convey to staff and patients the type of care they wish to provide. Monitoring and reporting of performance data, combined with careful design of care processes, help the hospital achieve its goals. Staff also receive training and coaching on ways to enhance the quality of care. In addition, hospital leaders' desire to appeal to privately insured patients, and to keep people healthy before and after hospitalizations, appears to drive improvement. For further information about the public hospital selection process and cross-cutting lessons about their improvement efforts, please see our introduction to the public hospital case study series.

Organization

MHS is the nation's fifth-largest public health care system. It operates five hospitals (in six sites), two cancer institutes, a nursing home, an adult day care program, and numerous community and school-based clinics. Legally the South Broward Hospital District, Memorial Healthcare System is governed by a seven-member board appointed by the governor. While governors have replaced board members at staggered intervals of four to eight years, the president and CEO, Frank Sacco, FACHE, has been leading the organization for more than 22 years.

MHS has experienced steady growth over the last few years as patients from across South Florida seek care from its hospitals and clinics, and as new hospitals have been acquired within a fairly small area (the farthest hospitals are 15 miles apart). Inpatient and outpatient volume are on the rise, with admissions growing by 17 percent between 2005 and 2009 and outpatient visits growing by 18 percent during the same period.

County tax revenue helps to support the cost of uncompensated care at MHS, which reached $725 million in FY2009; that year, bad debt and charity care rose by 19 percent over FY2008 levels. Despite the increased demand for indigent care, the system's FY2009 financial performance was the strongest in its history, according to hospital leaders. Effective financial management has allowed the board to lower taxes in each of the past three years. County tax-generated revenue is less than 4 percent of the system's total revenue.

MHS is implementing components of an electronic health record system. In some parts of its hospitals, physicians use the system to order treatments, tests, and consultations. An automated pharmacy system alerts clinicians about allergies, duplications, and risks. Bar-coding technology enables clinicians to compare a medication's bar code with a patient's identification bracelet to help prevent medication administration errors. The move from paper to electronic medical record documentation is under way. In many patient care areas, clinical staff can access electronic nursing notes, progress notes, vital signs, and other clinical information, but physician notes are not yet part of the system.

System-Level Quality Activities

MHS has a cohesive, centralized approach to quality improvement that promotes collaboration between hospital and system leaders. Hospital and system leaders work together to standardize care and monitor performance across all sites.

Another underpinning of MHS's quality program is the belief that keeping people healthy and safe will result in lower costs and loyal customers. MHS is vertically (as well as horizontally) integrated, providing lifelong care for community residents. If the system is unable to provide a service in-network, it will sometimes pay for its patients—even the uninsured—to be seen in the private sector. In addition to ensuring timely, accessible care, leaders say referrals make good financial sense because they may prevent an emergency department visit or hospitalization.

Personalizing Health Care Quality

MHS has sought to personalize health care quality and keep it at the forefront of employees' minds. In discussing successes or failures, leaders tell stories about patients, rather than statistics. At meetings at all levels of the system, from the biweekly new employee orientations to briefings with the board, CEO Sacco incorporates patients' stories as a way of expressing the organization's mission and vision. At new staff orientation, Sacco describes MHS staff as "extraordinary people," seeking to motivate new employees to be extraordinary, too. Each week, the administration publishes a letter from a patient or family member on the hospital's intranet site.

Recognition Awards

MHS created the awards to honor staff members for their achievements and commitment to providing a healing environment that is safe, efficient, focused on customers, and of superior quality. Staff members may nominate a co-worker who has helped to create an extraordinary experience for patients, families, or colleagues, for example, by preventing an error, providing stellar customer service in resolving a billing question, or taking steps to accommodate a patient's request (Exhibit 1). Honorees are recognized in their own workplace and during a system-wide celebration, and each received an award pin, certificate, and $100. In the past two years, MHS has awarded more than $75,000 through this program and its predecessors.

Patient/Family Medication Record and Advisory Groups

MHS created patient/family medication records, which list all of the medications a patient is taking while hospitalized, to encourage patients to be informed partners in their care. Nurses share these records with patients each day and upon discharge. When the concept was introduced to nurses, some feared it could create problems. But when asked if they would find it helpful if they were the patient, the nurses agreed they would and bought into the idea.

Patient advisory groups from all of the hospitals helped design the medication record. Staff tested it with patients until they were satisfied that it was clear and included the information families wanted (Exhibit 2).

The records have led to better communication between patients, nurses, and physicians and greater awareness on the part of patients about their health and what to do after discharge. Potential medication problems, such as drug interactions or incorrect doses, are being caught by staff, patients, and family members before the medication is administered.

In addition, each MHS hospital uses patient/family advisory groups to align quality improvement efforts with patient preferences. A director of patient- and family-centered care in each hospital creates opportunities for families to be active participants in their own care.

Bedside Report

MHS is in the process of rolling out change-of-shift reporting at patients' bedside, rather than the nurses' station. This change helps promote the flow of information between nurses, patients, and their family members. Anything said about the patient's condition, needs, or concerns is said in their presence—the "nothing about me, without me" approach. MHS nurses

Exhibit 2. Memorial Healthcare System Daily Hospital Medications Schedule

Memorial Healthcare System

DAILY HOSPITAL MEDICATION SCHEDULE
Date: 03/13/2009 0701 to 03/14/2009 0700

Program: IPP950SD
Printed on: March 13, 2009 03:30 am Page 1

TEST, PATIENT
ADMIT DATE: 03/11/2009
MEDICAL RECORD # 1234567 HT: 5 ft 6 in / 175 cm AGE: 45y SEX: F
ROOM/BED: 8CEN 803-2 WT: 168 lbs / 76.5 kgs DOB: 03/18/1962
ALLERGIES: NO KNOWN DRUG ALLERGIES

Draft

MEDICATIONS Brand (generic)	DOSE	ROUTE	HOW OFTEN	MEDICATION SCHEDULED TIMES* 03/13/2009 0701 - 03/14/2009 0700
*LOPRESSOR (METOPROLOL)	50 MG	BY MOUTH	DAILY	09:00AM
ASPIRIN	82 MG	BY MOUTH	DAILY	09:00 AM
CAPOTEN (CAPTOPRIL)	25 MG	BY MOUTH	2 TIMES A DAY	09:00AM 09:00PM
COLACE (DOCUSATE SO)	100 MG	BY MOUTH	AT BEDTIME	09:00PM
NITROGLYCERIN OINTMENT	1 INCH	ON THE SKIN	EVERY 6 HOURS	05:00AM 11:00AM 05:00PM 11:00PM
ROCEPHIN (CEFTRIAXONE)	1 GRAM	INTRAVENOUS	EVERY 24 HOURS	11:30AM
LASIX (FUROSEMIDE)	40 MG	INTRAVENOUS	EVERY 8 HOURS	06:00AM 02:00PM 10:00PM

This list of hospital medications may change daily. Your final list will be provided to you upon discharge.

*Please note that the medication scheduled times listed on this report may vary up to one hour before or after the actual times at which you receive your medications.

** New Medication started today.

NOT FOR PERMANENT STORAGE IN THE MEDICAL RECORD

report that rounding at bedside has made them better nurses. Whereas in the past, they might have included subjective, judgmental information about a patient or family member, they have learned to be more professional and objective, enabling them to focus on the most important aspects of care. For example, nurses might have discussed an alcoholic mother in a derogatory way. The new approach is to consider how alcoholism is a factor that should be taken into account in deciding on a care plan for a child.

Help Alert

Following a preventable death at Johns Hopkins University Hospital in 2001, many hospitals have created "hotlines" so that patients or family members can call for immediate help. MHS has implemented a "Help Alert" system that any patient or family member can activate by dialing 88 on an internal phone. The hotlines are used about three or four times a month in the smaller MHS hospitals and roughly 15 times a month in the large hospitals. If the problem is clinical, a clinical team responds immediately. If the problem is not clinical, an administrator or administrative representative responds. In one example, a patient's wife was concerned about his condition and called the hotline wanting to speak to her husband's doctor. The nursing supervisor quickly located the physician, who came to check on the patient and then sent him back to surgery. In another instance, a patient's daughter was alarmed by her mother's irregular heartbeat. When she discovered that her mother's nurse was on the telephone, giving a report on another patient, she decided to call the Help Alert hotline. This resulted in immediate responses from the nursing supervisor and Emergency Department physician, as well as consultation with the attending and a cardiologist, and the patient was admitted to the Critical Care Unit.

Crew Resource Management and Nurse Rounds

MHS hospitals have begun training staff in the techniques of crew resource management (CRM), based on

development of communication skills and teamwork supported by such tools as checklists and protocols. Originally a technique developed for use in aviation, CRM has been adopted for use in operating rooms and other settings where human mistakes can have serious consequences. Key components are granting everyone explicit authority to speak up if they see a problem; teaching staff to use a concise series of statements to draw attention to a problem, propose a solution, and reach agreement; and establishing shared responsibility for the patient's outcome. The "Pre-Procedure Time Out Brief," for example, creates a structure for the operating room team to affirm that each essential step has been done, communicated, and is accepted by all members of the team (Exhibit 3).

MHS began CRM training by hiring a consulting firm, but then trained one of its own team to roll it out and support the work across all of its hospitals. Clinical teams trained in CRM have begun using a debriefing form to monitor the impact of this technique on patient care. In a year's time, staff counted more than a dozen times when the training helped them correct a potential error or save a life. In addition, the new approach has resulted in more than 1,000 updates to physician preference cards (which help surgeries run predictably because surgeons have the equipment they are expecting), multiple equipment purchases and repairs, elimination of high-risk practices, and a newfound sense of teamwork among clinical staff.

MHS also uses a nurse rounding technique learned from consultants and now in use in many hospitals. Each hour, nurses check on the "four P's" for each patient—potty, pain, position, and placement of the items a patient might reach for. In addition to reducing the risk of falls, the method gives nurses opportunities to hear from patients about their needs and reduces patients' anxiety about being alone.

Data Review and Leadership Development

The health system holds Monthly Operating Review meetings, which bring together the leadership teams

Exhibit 3. Memorial Healthcare System Pre-Procedure Time Out Brief

MHS Pre Procedure Time Out Brief

Before Induction of Anesthesia
(Circulator or Anesthesia Provider Led)

May be done in Holding **IF** Circulator and Anes Provider confirm as a team **AND** both accompany patient to O.R.

Circulator and Anesthesia Provider confirm:
- ☑ Patient name and MR #
- ☑ Procedure site/side
- ☑ Allergies
- ☑ White board is correct

Anesthesia Provider to the team:
- ☑ Anticipated anesthesia issues
- ☑ Required equipment/assistance?
- ☑ Blood available?

Circulator and/or scrub confirm:
- ☑ Equipment checked and ready?
- ☑ Implants visualized by staff and confirmed by surgeon/Vendor present

STOP

Do Not Proceed until all items confirmed!

Before Start of Procedure
(Surgeon Led – confirmed by team)

Surgeon to the team (prior to Prep and Drape):
- ☑ Is Pre-Induction checklist complete and are there any issues?
- ☑ Team, introduce yourself and your role
- ☑ Our patient's name is _____ **
- ☑ Confirm MR # (Anes and RN)
- ☑ Our procedure is _____. **
- ☑ RN, please confirm with consent and order
- ☑ Site is marked with my initials
- ☑ Allergies? **
- ☑ Antibiotics – note start time
- ☑ Anticipated specimens
- ☑ Blood products needed **
- ☑ Images displayed and correctly labeled?
- ☑ Equipment/systems checked and ready?
- ☑ Preop Dx, special needs, considerations
- ☑ **If anyone sees anything they think is unsafe, I expect you speak up. Look for Red Flags. Remember Delta and use it anytime.**

Patient is then prepped and draped

Surgeon to the team:
- ☑ Verification of procedure and correctly draped area
- ☑ Visualization of site mark (if applicable)
- ☑ Is everyone ready?

RN to Team:
- ☑ **TIME OUT** complete at ____ (Time)

** For Life-threatening emergencies

Debrief
(Surgeon and/or Circulator Led)

Surgeon to the team:
- ☑ Verification of procedure performed/postop dx
- ☑ Verification of specimens (type and quantity)
- ☑ Special Postop Considerations
- ☑ Does any team member have any debrief items?
  - What can we improve?
  - What did we do well?

from each hospital with the system's executives. Data on each hospital's quality, safety, and patient satisfaction measures are shared and discussed. "Positive deviations," or exceptionally high performance, are identified as opportunities for hospital staff to learn from each others' experiences and come away with new improvement ideas.

The quality measures MHS has prioritized for discussion include the current CMS core measures, anticipated new core measures, infection rates, patient satisfaction scores, and patient safety events such as falls and medication errors. Quality data are generated electronically as well as through surveys and manual chart review.

During Leadership Development Institute meetings, held every four months, mid- and upper-level managers meet to discuss the status of the health system and learn techniques for being more effective in their jobs.

Activities Focused on Core Measures

In addition to the strategies that contribute to quality and safety in general, each MHS hospital is engaged in measurement, reporting, and improvement activities focused on the core measures. For example, in 2004 Memorial Hospital Pembroke participated in the CMS/Premier Healthcare Quality Incentive Demonstration Project and performed worse than expected, reaching only the sixth, seventh, and eighth deciles on measures of care for acute myocardial infarction, heart failure, and pneumonia, respectively. In response, Nicole Auffret, R.N., Memorial Hospital Pembroke's director of quality and patient safety, instituted a new system to ensure compliance with the core measures: tracking patients who meet inclusion criteria, conducting concurrent reviews, holding staff accountable, investigating variances and near misses, and sharing data and best practices. The system spread to other hospitals. By 2007, Memorial Hospital Pembroke had achieved high scores in the Premier Demonstration and, as noted above, all four MHS hospitals had reached the top 5 percent of hospitals on core measure performance by June 2008.

Case Identification and Concurrent Review

MHS hospitals have created a computerized algorithm that identifies any core measure patients in the hospital. The algorithm casts a broad net in order to identify patients who might not be identified as core measure patients upon admission, but could potentially be identified as such later in their stay based on test results. Nurse managers receive the list and flag patients' charts, using a sticker with one of the four core measure conditions circled. A purple sheet lists all indicators to be tracked by nurses and a pink sheet reminds physicians about the processes included in the care map.

In some MHS hospitals, nurses conduct concurrent chart abstraction to monitor the completion of each aspect of care. In others, quality staff perform concurrent reviews. Nurse managers work with bedside nurses to review their patients' status and the timing of needed care. "No one wants to have to investigate a variance; it's better to get the care right," Auffret says. "Now that everyone has seen how successful this process is, no one would change it."

For the majority of patients, care is delivered according to the standards. However, when a variance occurs, it is included in a "weekend report" that is sent to leadership. Staff caring for the patient along with their leaders investigate and write a report about the error. A multidisciplinary team meets to discuss every variance, with physician variances reviewed by a physician panel.

Discharge Time Out

MHS hospitals have struggled with one core measure in particular: provision of appropriate discharge instructions for heart failure patients. After extensive analysis of deviances, the clinical managers and staff nurse developed a process now in use for all patients. Two nurses meet in a designated quiet area—marked as a "red zone" in which other staff are not supposed to interrupt them—to review a checklist of discharge

Exhibit 4. MHS Hospital Scores on Core Measures Compared with State and National Averages

Indicator	National Average	FL Average	Memorial Miramar	Memorial West	Memorial Pembroke	Memorial Regional
Heart Failure						
Percent of heart failure patients given discharge instructions	78%	86%	84% of 119 patients	98% of 573 patients	96% of 227 patients	96% of 827 patients
Percent of heart failure patients given an evaluation of left ventricular systolic (LVS) function	90%	97%	99% of 126 patients	100% of 649 patients	100% of 248 patients	100% of 921 patients
Percent of heart failure patients given ACE inhibitor or ARB for left ventricular systolic dysfunction (LVSD)	90%	93%	97% of 31 patients	97% of 240 patients	100% of 47 patients	99% of 394 patients
Percent of heart failure patients given smoking cessation advice/counseling	92%	98%	100% of 11* patients	100% of 61 patients	100% of 32 patients	100% of 149 patients
Pneumonia						
Percent of pneumonia patients assessed and given pneumococcal vaccination	86%	92%	100% of 100 patients	99% of 328 patients	99% of 108 patients	100% of 365 patients
Percent of pneumonia patients whose initial emergency room blood culture was performed prior to the administration of the first hospital dose of antibiotics	92%	95%	96% of 181 patients	97% of 371 patients	99% of 137 patients	98% of 523 patients
Percent of pneumonia patients given smoking cessation advice/counseling	90%	98%	100% of 31 patients	100% of 57 patients	100% of 59 patients	100% of 138 patients
Percent of pneumonia patients given initial antibiotic(s) within 6 hours after arrival	94%	95%	99% of 155 patients	99% of 306 patients	99% of 110 patients	99% of 456 patients
Percent of pneumonia patients given the most appropriate initial antibiotic(s)	88%	92%	99% of 157 patients	98% of 251 patients	97% of 126 patients	97% of 318 patients
Percent of pneumonia patients assessed and given influenza vaccination	85%	91%	100% of 79 patients	98% of 238 patients	99% of 96 patients	100% of 288 patients
Heart attack						
Percent of heart attack patients given aspirin at arrival	94%	97%	100% of 31 patients	100% of 216 patients	100% of 74 patients	99% of 376 patients
Percent of heart attack patients given aspirin at discharge	93%	96%	100% of 7 patients*	98% of 166 patients	94% of 18* patients	100% of 513 patients
Percent of heart attack patients given ACE inhibitor or ARB for left ventricular systolic dysfunction (LVSD)	92%	96%	100% of 1 patients*	96% of 28 patients	100% of 3* patients	99% of 110 patients
Percent of heart attack patients given smoking cessation advice/counseling	96%	100%	0 patients[i]	100% of 35 patients	0 patients[i]	99% of 165 patients
Percent of heart attack patients given beta blocker at discharge	94%	97%	100% of 9 patients*	98% of 180 patients	100% of 13* patients	100% of 567 patients
Percent of heart attack patients given fibrinolytic medication within 30 minutes of arrival	**45%**	**45%**	0 patients[i]	0 patients[i]	0 patients[i]	0 patients[i]
Percent of heart attack patients given PCI within 90 minutes of arrival	81%	84%	0 patients[i]	93% of 61 patients	0 patients[i]	87% of 98 patients

Surgical Care Improvement/Surgical Infection Prevention[3]						
Percent of surgery patients who were given an antibiotic at the **right time** (within one hour before surgery) to help prevent infection	91%	95%	100% of 20 patients*	96% of 210 patients	100% of 51 patients	99% of 344 patients
Percent of surgery patients who were given the **right kind** of antibiotic to help prevent infection	95%	95%	98% of 129 patients	100% of 212 patients	100% if 203 patients	98% of 359 patients
Percent of surgery patients whose preventive antibiotics were **stopped at the right time** (within 24 hours after surgery	90%	91%	96% of 119 patients	96% of 192 patients	97% of 188 patients	96% of 326 patients
Percent of **all** heart surgery patients whose blood sugar (blood glucose) is kept under good control in the days right after surgery	89%	89%	0 patients[i]	100% of 1 patients*	0 patients[i]	99% of 128 patients
Percent of surgery patients needing hair removed from the surgical area before surgery, who had hair removed using a safer method (electric clippers or hair removal cream – not a razor)	97%	98%	99% of 252 patients	100% of 334 patients	99% of 314 patients	99% of 564 patients
Percent of surgery patients **whose doctors ordered treatments to prevent blood clots** after certain types of surgeries	88%	91%	95% of 130 patients	95% of 196 patients	100% of 147 patients	96% of 182 patients
Percent of patients **who got treatment at the right time** (within 24 hours before or after their surgery) to help prevent blood clots after certain types of surgery	86%	89%	92% of 130 patients	94% of 196 patients	99% of 147 patients	93% of 182 patients

Source: www.hospitalcompare.hhs.gov. Data are from April 2008 through March 2009.
Notes: i indicates there were no patients who met criteria for inclusion; * indicates data are not statistically significant. At the time MHS was selected for inclusion in the study, 23 HQA measures were used as the selection criteria. Since then, the 25 HQA measures shown here are reported and have become the standard.
[3]The hospital indicated that data submitted for this measure were based on a sample of cases.

steps. One of the hardest steps in the discharge process is the medication reconciliation. Although it starts with an electronic medication record, sometimes medications are also handwritten on the form, increasing the complexity of verifying them. Having dedicated time to review medications helps nurses focus on this complex task. Both nurses must sign off on the checklist when it is completed.

RESULTS

MHS hospitals have improved the quality of care for their patients (Exhibit 4). The health system has received many awards, including the American Hospital Association's Foster G. McGaw Prize, which is given to one hospital or hospital system each year that has distinguished itself through efforts to improve the health and well-being of their community. Memorial Health System was one of three health care systems (out of 346) to win the 2010 Premier Healthcare Alliance Award for Quality, which bases selection on CMS process, outcome, and efficiency data. In addition, two MHS hospitals, Miramar and Pembroke, were among the 21 hospital winners (out of 3,788) of the 2010 award.

LESSONS LEARNED

Hospitals seeking to improve performance on the measures might take the following lessons from Memorial Health System's experience:

- Changes do not happen overnight. MHS' patient/family medication record, for example, took 18 months to roll out across the five hospitals.
- MHS leaders believe in the adage, "Inspect what you expect," which leads them to monitor dozens of aspects of quality and safety.
- While it can be useful to borrow ideas from other hospitals, it is important to make them your own. MHS' quality department now includes staff who have expertise in culture change, patient and family satisfaction, crew resource management, infection control, and medication safety. According to Rebecca Caschette, M.S., R.N., MHS administrator of quality and patient safety, having these resources available internally is "the cost of doing things right. If we keep people healthy, we'll be successful."
- Large organizations change more slowly than small ones, and there will be some variations in practice across hospitals in a system, depending on their size, location, and leadership.

For More Information

For further information, contact Rebecca Caschette, M.S., R.N., administrator of quality and patient safety at MHS, rcaschette@mhs.net, or Nicole Auffret M.S., R.N., director of quality and patient safety, Memorial Hospital–Pembroke, nauffret@mhs.net.

Appendix. Selection Methodology

Selection of high-performing public hospitals in process-of-care measures for this series of case studies was based on data submitted by hospitals to the Centers for Medicare and Medicaid Services. We considered "public" hospitals those that are listed as members of the National Association of Public Hospitals (NAPH) or are government-owned facilities. We then selected public hospitals that are in the top quartile among public and private hospitals in an overall hospital quality composite measure. For further information about the public hospital selection process and cross-cutting lessons about their improvement efforts, please see our introduction to the public hospital case study series. This composite is based on 23 measures that are publicly available on the U.S. Department of Health and Human Services' Hospital Compare Web site (www.hospitalcompare.hhs.gov). The 23 measures, developed by the Hospital Quality Alliance, relate to practices in four clinical areas: heart attack, heart failure, pneumonia, and surgical infections.

Heart Attack Process-of-Care Measures

Percent of Heart Attack Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)
Percent of Heart Attack Patients Given Aspirin at Arrival
Percent of Heart Attack Patients Given Aspirin at Discharge
Percent of Heart Attack Patients Given Beta Blocker at Discharge
Percent of Heart Attack Patients Given Fibrinolytic Medication Within 30 Minutes of Arrival
Percent of Heart Attack Patients Given PCI Within 90 Minutes of Arrival
Percent of Heart Attack Patients Given Smoking Cessation Advice/Counseling

Heart Failure Process-of-Care Measures

Percent of Heart Failure Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)
Percent of Heart Failure Patients Given an Evaluation of Left Ventricular Systolic (LVS) Function
Percent of Heart Failure Patients Given Discharge Instructions
Percent of Heart Failure Patients Given Smoking Cessation Advice/Counseling

Pneumonia Process-of-Care Measures

Percent of Pneumonia Patients Assessed and Given Influenza Vaccination
Percent of Pneumonia Patients Assessed and Given Pneumococcal Vaccination
Percent of Pneumonia Patients Given Initial Antibiotic(s) Within 4 Hours After Arrival OR Pneumonia Patients Given Initial Antibiotic(s) within 6 Hours After Arrival
Percent of Pneumonia Patients Given Oxygenation Assessment
Percent of Pneumonia Patients Given Smoking Cessation Advice/Counseling
Percent of Pneumonia Patients Given the Most Appropriate Initial Antibiotic(s)
Percent of Pneumonia Patients Whose Initial Emergency Room Blood Culture Was Performed Prior to the Administration of the First Hospital Dose of Antibiotics

Surgical Care Improvement Process-of-Care Measures

Percent of Surgery Patients Who Received Preventative Antibiotic(s) One Hour Before Incision
Percent of Surgery Patients Who Received the Appropriate Preventative Antibiotic(s) for Their Surgery
Percent of Surgery Patients Whose Preventative Antibiotic(s) Are Stopped Within 24 hours After Surgery

Percent of surgery patients whose doctors ordered treatments to prevent blood clots (venous thromboembolism) for certain types of surgeries

Percent of surgery patients who received treatment to prevent blood clots within 24 hours before or after selected surgeries

The analysis uses all-payer data from 3rd quarter 2007 through 2nd quarter 2008. To be included in the comparison pool, a hospital must have submitted data for all 23 measures (even if data submitted were based on zero cases), with a minimum of 30 cases for at least one measure in each of the four clinical areas. 2,083 public and private facilities were eligible for the total pool analysis.

No explicit weighting was incorporated, but higher-occurring cases give weight to that measure in the average. Since these are process measures (versus outcome measures), no risk adjustment was applied. Exclusion criteria and other specifications are available in the Quality Net Specifications Manual.).

While public ownership and high score on a composite of process-of-care measures were the primary criteria for selection in this series, the hospitals (or hospital system) also had to meet the following criteria: hospital ranked (or the average score across the system's hospitals examined ranked) within the top half of hospitals in the U.S. in the percentage of patients who gave a rating of 9 or 10 out of 10 when asked how they rate the hospital overall (measured by Hospital Consumer Assessment of Healthcare Providers and Systems, HCAHPS), full accreditation by the Joint Commission; not an outlier in heart attack and/or heart failure mortality; no major recent violations or sanctions; and geographic diversity.

About the Author

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