THE COMMONWEALTH FUND

Case Study

*High-Performing Health Care Organization* • September 2009

# St. Charles Hospital: Improving Surgical Care Through Best-Practice Literature and Order Sets

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Commonwealth Fund pub. 1317
Vol. 24

### Vital Signs

*Location:* Port Jefferson, N.Y.

*Type:* Private, not-for-profit hospital

*Beds:* 231

*Distinction:* Top 3 percent in composite of five surgical care improvement process-of-care measures, among more than 2,300 hospitals (more than half of U.S. acute-care hospitals) eligible for the analysis.

*Timeframe:* April 2007 through March 2008. See Appendix A for full methodology.

This case study describes the strategies and factors that appear to contribute to high adherence to surgical care improvement process-of-care measures at St. Charles Hospital. It is based on information obtained from interviews with key hospital personnel, publicly available information, and materials provided by the hospital from March through April 2009.[1]

## SUMMARY

From 2004 to 2008, St. Charles Hospital achieved dramatic improvement on process-of-care, or "core," measures, particularly on those intended to reduce surgical complications. The core measures, developed by the Hospital Quality Alliance, relate to provision of recommended treatment in four clinical areas: heart attack, heart failure, pneumonia, and surgical care. Conversations with administrative and clinical staff indicate that St. Charles' achievements in surgical care can be attributed to a hospitalwide focus on quality improvement—spurred by involvement in the national Surgical Care Improvement Project—as well as to reliance on best-practice literature to get surgeons on board, use of preprinted order sets to standardize care processes, and a steady focus on tracking performance data and communicating results to physicians and other staff.

## ORGANIZATION

St. Charles Hospital, in Port Jefferson, N.Y., is a private, not-for-profit hospital with 231 licensed beds. It has nearly 10,000 annual admissions, more than 23,000 annual emergency department visits, and more than 5,000 annual ambulatory surgeries.

St. Charles is a part of Catholic Health Services of Long Island. In 1995, St. Charles partnered with John T. Mather Memorial Hospital to form the Mather–St. Charles Health Alliance. Certain services, such as orthopedics, obstetrics, pediatrics, and rehabilitation, are delivered at St. Charles. Other services, such as psychiatry, hematology, and oncology, are delivered at John T. Mather Memorial Hospital. This arrangement helps both hospitals reduce costs, target resources, and focus on their centers of excellence. St. Charles currently does not use electronic medical records.

## HOSPITALWIDE STRATEGIES

In 2004, when public reporting of health care outcomes was gaining traction, an article published in the *New York Times* listed St. Charles in the bottom quartile of performance among area hospitals. According to administrators, this article "woke up" physicians and catalyzed quality improvement efforts. Physicians realized that hospitals with good performance scores had a competitive advantage, and did not want to lose patients to neighboring hospitals.

Over the next few years, St. Charles adopted the Joint Commission's hospital core measures as its standard of care, worked to get physicians and other clinical staff on board with quality initiatives, and began to provide them with the tools necessary to improve performance.

### Fostering a Culture of Quality Improvement

Direction and support from St. Charles' CEO, chief medical officer (CMO), and chief nursing officer (CNO) provide an essential foundation on which to build a culture of quality improvement. It is not unusual for the CEO to attend and participate in the core measures committee meetings. Executives and the board of trustees receive regular status reports of departmental performance, and the CEO in particular is "not afraid to reach out to departments that show a need for improvement," said James O'Connor, executive vice president.

With assistance from the education department, the core measures coordinator holds in-service sessions with clinical staff to demonstrate the links between adherence to core measures and optimal reimbursement rates, improved outcomes, and enhanced patient satisfaction. These sessions are held at shift changes so that staff do not have to come in early or stay late to attend them.

Additionally, the department of quality and performance improvement provides regular feedback to staff and physicians on their performance on the core measures. As noted by Dante Latorre, vice president for quality and regulatory affairs, "Such feedback must be consistent with constant reminders to perform the recommended procedures." Latorre also stresses the importance of celebrating achievements.

### Tracking Core Measures

The common maxim "you manage what you measure" rings true for St. Charles. Core measure performance is tracked at the individual, departmental, and hospital levels and plays a pivotal role in driving change. At the individual level, the core measures are part of physician performance monitoring. When a physician is noncompliant with any measure, he or she receives an "Opportunity for Improvement" letter that outlines areas of noncompliance for informational purposes. The director of the clinical department is copied on the letter, and a copy is placed in the physician's credentialing file.

Departmental and hospital-level performance is monitored on a weekly basis and the results are shared with staff via e-mail. This information is also shared with hospital leaders, the board of trustees, and the medical board on a quarterly basis in the form of a summary "scorecard" report.

## SURGICAL CARE IMPROVEMENT STRATEGIES

The following strategies were particularly critical to improvement in surgical care at St. Charles Hospital.

### Participating in National Improvement Campaign

St. Charles' participation in the Surgical Care Improvement Project (SCIP) and its predecessor, the Surgery Infection Prevention Project (SIPP), provided an impetus for its improvement efforts. SCIP is a national campaign funded by the Centers for Medicare and Medicaid Services (CMS) aimed at substantially improving surgical care through collaborative efforts among public and private organizations.[2] The goal is to reduce the incidence of surgical complications by 25 percent by the year 2010. SCIP encourages participating hospitals to adhere to a set of evidence-based process and outcome measures related to infection control, cardiac care, stroke prevention, and respiratory care. These measures are the basis for the surgery care improvement core measures currently submitted by most U.S. hospitals to the Joint Commission as part of hospital accreditation, and to CMS for public reporting and payment. The measures were used for selection of hospitals for this case-study series.

When St. Charles joined the SIPP campaign in 2004, its performance on the measures was poor. The hospital showed only 27 percent compliance on a surgical infection prevention index, and only 13 percent compliance on an "all-or-none bundle" of the following measures: antibiotic administration within one hour of skin incision, appropriate antibiotic selection, and antibiotic discontinuance within 24 hours.[3] This was a wake-up call. To help improve performance, St. Charles hired a core measures coordinator. The coordinator identified lack of uniformity and standardization as a key problem. "The main difficulty was everyone—nurses, surgeons, anesthesiologists—were used to doing things their own way; even the words used for the same tools were different," said Latorre.

Clinicians were given information on the quality measures, expectations for their performance, and monthly feedback about their results. Teams were formed to investigate use of standardized order sets and recommended antibiotic lists. A core measures nursing committee, including nurse leaders, the director of quality and performance improvement, and the core measure coordinator, began to meet every two weeks to discuss trends and issues and to provide feedback on any changes instituted.

To get everyone in step and help change practice patterns, the department of quality and performance improvement shared its findings in meetings of the medical staff committees, including anesthesiologist committee meetings and surgical committee meetings. The department tracked progress on a monthly and quarterly basis, and eventually began to see results.

### Bringing Surgeons on Board

Physician support of the SCIP core measures was crucial to success. It did not always come easily, however. St. Charles began each initiative by showing surgeons the clinical evidence demonstrating that the recommended practice yielded better outcomes than other practices. Peer-reviewed articles and IPRO publications, in particular, helped elicit their acceptance and support.[4] The engagement of the chief medical officer's (CMO) in this effort was crucial. He and other clinicians presented evidence at committee meetings. When introducing a change in medication practice, changes in order sets, or updates to the core measures, the CMO now collaborates with the pharmacy department, the nursing department, and others. He also discusses the changes with the pharmacy and therapeutics committee, the medical board, and the board of trustees.

Clinical evidence proved particularly effective when St. Charles decided that surgeons should use razors instead of clippers to prepare a surgery site. The department of quality and performance improvement showed surgeons evidenced-based literature supporting the use of clippers to reduce surgical infection. "We thought it would take six months to change the physician practices, but by presenting evidence and how we're doing [on this measure], we found it could be done in one or two months," said Latorre.

## Monitoring Compliance

The core measures coordinator reviews each surgical patient record to monitor compliance with the surgical care measures.

In 2005, at the beginning of the SCIP initiative, the core measures coordinator devoted six months to checking patients' charts while they were still in the post-anesthesia care unit, the intensive care unit, or another inpatient unit. This concurrent review helped resolve problems immediately. Once compliance with the SCIP core measures improved significantly and deviations became rare, hospital leaders felt concurrent reviews were no longer needed. Today, the coordinator generally reviews patient charts within five days after surgery; however, certain aspects of patient records, such as documentation accuracy, may be reviewed while the patient is still in the hospital.

If a surgeon deviates from the core measures, he or she must document the reason for doing so. Without the required documentation, the patient record is tagged as noncompliant. Before failing a chart for noncompliance, however, the core measures coordinator discusses the record with the nursing care coordinator. In some cases, the nursing care coordinator finds inaccuracies in the documentation that, once corrected, bring the record into compliance. Involving the nursing care coordinator in this manner has been an effective way to engage nursing staff and ensure accuracy of the chart review.

Every Monday, the core measures coordinator and director of quality and performance improvement meet to review compliance with the surgical care core measures. They reach out to responsible medical staff in cases where a noncompliant case has been documented. Twice a month, the coordinator meets with senior nursing and education staff to share core measure results and identify opportunities for improvement.

St. Charles enters its surgical and other core measures data into MIDAS, a Joint Commission–approved electronic quality system that stores patient process and outcome data. MIDAS enables the hospital to evaluate and benchmark its performance against hospitals in one of the country's largest concurrent databases.[5]

## Standardized Orders

The greatest contributor to surgical care improvement at St. Charles has been the reengineering of certain processes and procedures to align with the core measure guidelines.

Checklists and preprinted order forms are included in patient charts, reducing the risk of human error while streamlining routines in ways that are appreciated by clinicians. Latorre points out the need to balance strict adherence to the core measure guidelines with opportunities for physicians to provide feedback. To avoid objections to standard orders as being "cookbook medicine"—an accusation that has become less common as professional associations have adopted the care standards—and to ensure that physicians appreciate the clinical evidence supporting them, Latorre believes physician education is critical. New physicians are given a welcome packet that describes preoperative anesthesia protocols, preprinted order sheets, and SCIP information.

At St. Charles, the surgical guidelines and standard orders have changed over time to comply with evolving national guidelines and to refine care processes. For example, to ensure that antibiotics are stopped within the 24-hour window, the postoperative antibiotic standard has changed from administration every eight hours after the first dose to administration every six hours. Also, the hospital's anesthesiologists had been administering the preoperative antibiotic, but compliance with the guideline for administration to take place within 60 minutes before surgery was poor. After the operating room nurse took over responsibility for administration, performance on this measure greatly improved, mainly through streamlining of the process and accurate documentation.

### *General Surgery Checklists*

In collaboration with the Long Island Health Network, the hospital has established clinical guidelines for all general surgeries (Appendix B). These guidelines encompass the core measure standards and take the form of checklists for the preadmission, acute, and discharge phases of hospitalization. After completion,

nurses and/or physicians sign their initials next to each step in the checklists. Any deviations from the standards require supporting documentation on a preprinted variance sheet (Appendix C).

***Standardized DVT Physician Order Forms***

In addition to the clinical guidelines for general surgery, St. Charles uses standardized, preprinted physician order forms for deep-vein thrombosis (DVT) prophylaxis; antibiotic prophylaxis; orthopedic knee, hip, and spine surgery; and anticoagulation orders. St. Charles staff developed these forms. For example, a committee composed of a dietician, pharmacist, nurse, and surgeon helped create the DVT physician order form, which includes a screening tool used to determine whether a patient is at low, medium, or high risk for DVT and a list of prescribed preventive measures (such as administration of Heparin) based on the patient's score.

***Time-Out Sheet***

As in other hospitals in this case-study series, St. Charles clinicians call a "time out" before every surgery to ensure patient safety and adherence to recommended guidelines. This practice was implemented in 2004–05. A nurse completes a time-out checklist in the operating room immediately prior to surgery. Although the checklist was developed internally, its content—such as ensuring antibiotic administration 60 minutes prior to surgery—is shaped by regulatory requirements and Joint Commission standards. It also enables clinicians to confirm that they are about to operate on the right patient and right body part, and to ensure that everything goes as planned.

## RESULTS

As noted above, in 2004, St. Charles' score on an all-or-none composite of three recommended measures was just 13.3 percent. By the end of 2008, its performance on this measure had improved to 96.8 percent. Improvement on two indicators—administration of antibiotics within one hour and discontinuation of antibiotics within 24 hours—was especially dramatic, particularly in certain areas such as knee surgery (Exhibit 1). St. Charles also performs very well compared with other hospitals in the nation and in New York State (Exhibit 2).

St. Charles hopes to achieve 100 percent compliance on all of the core measures. Hospital staff acknowledge the difficulty of this task, noting that "there are always special cases."

Few new surgical initiatives are planned in the near future at St. Charles, but the hospital is considering

**Exhibit 1. Performance on Selected Measures of Surgical Improvement, 2004–2008**

| | Q4 2004 | Q4 2005 | Q4 2006 | Q4 2007 | Q4 2008 |
|---|---|---|---|---|---|
| Antibiotic within one hour (before surgery) – all | 74.6% | 77.2% | 94.7% | 99.4% | 99.3% |
| Antibiotic within one hour (before surgery) – knee surgery | 73.6% | 77.7% | 93.8% | 98.7% | 100% |
| Antibiotic selection – all | 97.0% | 95.7% | 98.7% | 100% | 99.3% |
| Antibiotic selection – knee surgery | 99.1% | 99.2% | 98.8% | 100% | 100% |
| Antibiotic discontinuation within 24 hours (after surgery) – all | 17.2% | 75.1% | 96.7% | 98.0% | 98.5% |
| Antibiotic discontinuation within 24 hours (after surgery) – knee surgery | 5.7% | 70.8% | 98.8% | 98.7% | 98.7% |
| Surgical infection all-or-none bundle compliance[6] – all | 13.3% | 55.3% | 93.3% | 97.9% | 96.8% |

Source: St. Charles Hospital, 2009.

**Exhibit 2. St. Charles Hospital Scores on Surgical Care Improvement Core Measures Compared with State and National Averages**

| Surgical Care Improvement Indicator | National Average | New York State Average | St. Charles Hospital |
|---|---|---|---|
| Percent of surgery patients who were given an antibiotic at the right time (within one hour before surgery) to help prevent infection | 86% | 90% | 98% of 582 patients |
| Percent of surgery patients who were given the right kind of antibiotic to help prevent infection | 92% | 94% | 100% of 591 patients |
| Percent of surgery patients whose preventive antibiotics were stopped at the right time (within 24 hours after surgery) | 84% | 86% | 98% of 573 patients |
| Percent of all heart surgery patients whose blood glucose was kept under good control in the days right after surgery | 85% | 77% | 100% of 1 patient* |
| Percent of surgery patients needing hair removal from the surgical area before surgery who had hair removed using a safe method (electric clippers or hair removal cream, not razor) | 95% | 94% | 100% of 362 patients |
| Percent of surgery patients whose doctors ordered treatments to prevent blood clots after certain types of surgeries | 84% | 90% | 99% of 674 patients |
| Percent of surgery 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 | 81% | 87% | 99% of 674 patients |

Source: www.hospitalcompare.hhs.gov. Data are from July 2007 through June 2008.
*The number of cases is too small to indicate reliably how well a hospital is performing.

a pilot test of the Institute for Healthcare Improvement/World Health Organization Surgical Safety Checklist (Appendix D).[7] More than 500 U.S. hospitals have tested the checklist, which encourages clinicians to follow certain steps to ensure patient safety.

Also, St. Charles' core measures coordinator is expanding educational sessions to include examination of noncompliant cases. The coordinator distributes copies of particular patient charts or checklists (with the names of the nurses and patients involved hidden) and then leads surgery department nursing staff in a discussion of the reasons why the case fell out of compliance.

## CHALLENGES AND LESSONS LEARNED

Three lessons for performance improvement emerged from conversations with St. Charles administrators and clinicians:

- It is crucial to engage stakeholders and encourage them to "buy in" to the culture of quality improvement. Before commencing an improvement initiative, St. Charles leaders involve stakeholder groups in its design and implementation. The department of quality and performance improvement logs many hours educating physicians and staff about the need for change and sharing clinical evidence supporting recommended care practices. Such information is often presented as an opportunity for the hospital to distinguish itself from competitors.
- Open and regular communication lays a foundation for success. Reminders and feedback are shared with physicians and staff frequently,

typically on a weekly basis. Hospital administrators note that feedback is not intended to be punitive and that achievements are celebrated. This positive focus extends to all aspects of quality improvement at St. Charles. For example, the "Good Catch" award is used to recognize staff who help stop a preventable error.

- Hospitals need to redesign care processes around quality measures as well as physician preferences. St. Charles administrators believe that, on its own, an announcement of a new policy is insufficient to alter physician behavior. Any new policy must be incorporated into the daily routine of physicians and staff. For example, St. Charles created preprinted order sets to reinforce the goal of making core measures the standard of care.

One of the biggest challenges facing St. Charles today is maintenance of its high level of performance. Hospital leaders have been careful to fight complacency and continue to hold frequent meetings to keep stakeholders engaged. They want to stay a step ahead of the competition in terms of quality and patient safety. Today's patients are savvy about quality of care and about differences among health care providers, according to Latorre, and physicians want to make sure they keep up.

St. Charles also faces challenges in common with other hospitals. Administrators and staff point out that noncompliance with the core measures sometimes stems from poor documentation, as opposed to failures to follow protocol. Also, while the facility has been able to standardize many practices through the use of checklists and preprinted physician orders—for example, a standardized antibiotic order form encompasses most of the surgical procedures requiring antibiotics—they have not created such forms for surgeries that are performed infrequently.[8]

St. Charles' parent system, Catholic Health Services, is beginning to examine electronic medical record systems, and core measure elements and preprinted order sheets will be considered for inclusion in any electronic information system.

## FOR MORE INFORMATION

For further information, contact Dante Latorre, vice president of quality and regulatory affairs, dante.latorre@chsli.org.

## NOTES

1 This study was based on publicly available information and self-reported data provided by the case-study institution(s). The aim of Fund-sponsored case studies of this type is to identify institutions that have achieved results indicating high performance in a particular area, have undertaken innovations designed to reach higher performance, or exemplify attributes that can foster high performance. The studies are intended to enable other institutions to draw lessons from the studied organizations' experiences in ways that may aid their own efforts to become high performers. The Commonwealth Fund is not an accreditor of health care organizations or systems, and the inclusion of an institution in the Fund's case-study series is not an endorsement by the Fund for receipt of health care from the institution.

2 SIPP ran from 2002 to 2005; SCIP began in 2005. For more information, see: http://www.qualitynet.org/dcs/ContentServer?c=MQParents&pagename=Medqic/Content/ParentShellTemplate&cid=1122904930422&parentName=Topic.

3 The "all-or-none bundle," also known as SCIP/SIP 1-2-3, measures the portion of patients who receive recommended care on all three of these measures.

4 IPRO is a nonprofit health care consulting organization that works with state and federal governments and private corporations to optimize the quality of health care programs and the value of dollars spent on health care. It is New York State's quality improvement organization. For more information, see: http://www.ipro.org/index/corporate.

5 For more information about MIDAS, see: http://www.midasplus.com/DV.asp.

6 The "all-or-none bundle" score, also known as SCIP/SIP 1-2-3, reflects the portion of patients who received recommended care on antibiotic within one hour of skin incision, appropriate antibiotic selection, and antibiotic discontinuance within 24 hours.

7 For more information about the IHI World Health Organization Surgical Checklist, see: http://www.ihi.org.

8 To provide flexibility, the form also enables physicians to order a different antibiotic.

9 Two additional surgical measures were added in 2007 but were not included in the composite score for selection purposes because data were not available for four quarters.

## Appendix A. Selection Methodology

Selection of high-performing hospitals in process-of-care measures for this series of case studies is based on data submitted by hospitals to the Centers for Medicare and Medicaid Services. We use five measures that are publicly available on the U.S. Department of Health and Human Services' Hospital Compare Web site, (www.hospitalcompare.hhs.gov). The measures, developed by the Hospital Quality Alliance, relate to practices in surgical care.

*Surgical Care Improvement Process-of-Care Measures*

1. Percent of surgery patients who received preventive antibiotic(s) one hour before incision
2. Percent of surgery patients who received the appropriate preventive antibiotic(s) for their surgery
3. Percent of surgery patients whose preventive antibiotic(s) are stopped within 24 hours after surgery
4. Percent of surgery patients whose doctors ordered treatments to prevent blood clots (venous thromboembolism) for certain types of surgeries
5. 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 April 2007 through March 2008. To be included, a hospital must have at least 50 beds and must have submitted data for all five measures (even if data submitted were based on zero cases), with a minimum of 30 cases for at least one measure, over four quarters.[9] Approximately 2,300 facilities—more than half of U.S. acute-care hospitals—were eligible for the analysis.

No explicit weighting was incorporated, but higher-occurring cases give weight to the corresponding measure in the average. Since these are process measures (versus outcome measures), no risk adjustment was applied. Exclusion criteria and other specifications are available at http://www.qualitynet.org/dcs/ContentServer?cid=1141662756099&pagename=QnetPublic%2FPage%2FQnetTier2&c=Page).

While a high score on a composite of surgical care improvement process-of-care measures was the primary criterion for selection in this series, the hospitals also had to meet the following criteria: not a government-owned hospital; not a specialty hospital; 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); fully accredited by the Joint Commission; not an outlier in heart attack and/or heart failure mortality; no major recent violations or sanctions; and geographically diverse.

## Appendix B. Clinical Guidelines – General Surgery

| | | INITIALS | | |
|---|---|---|---|---|
| **FOCUS** | PREADMISSION | N/A | D | N |
| **Assessment/ Interventions** | • **Admission assessment including smoking cessation*** <br>• **Evaluate need for VTE (DVT) prophylaxis*** <br>• **Assess pain, establish comfort/function level – discuss pain management*** | | | |
| **Diagnostic Tests** | PST as per anesthesia protocol | | | |
| **Medications/IV** | • Give instruction as per Anesthesia protocol <br>• D/C herbal supplements, aspirin or aspirin products as per anesthesia protocol <br>• Consider need for beta blocker during surgery <br>• Medication reconciliation initiated | | | |
| **Diet** | • As ordered | | | |
| **Consults** | • Anesthesia assessment, if requested or required <br>• Evaluations as needed per anesthesia requirements <br>• Surgeon is faxed PST results <br>• Nurse in PST reviews chart before releasing chart to ASU | | | |
| **Activity/ Safety** | • Per MD order <br>• Introduction to falls/safety program | | | |
| **Patient/Family Education** | • Assess barriers to learning <br>• Patient educated to expected clinical course and length of stay | | | |
| **Discharge Planning** | • Discharge screening and planning implemented <br>• Discuss home safety | | | |
| **Supplementary Patient Needs** | | | | |

| | | | INITIALS | |
|---|---|---|---|---|
| **FOCUS** | ACUTE PHASE | N/A | D | N |
| **Assessment/ Interventions** | • Admission reassessment<br>• Anesthesia evaluation<br>• Update H & P<br>• **Surgical consent**<br>• **Pain assessment and management**<br>• **Mechanical VTE (DVT) prophylaxis**<br>• **Appropriate Pre op skin prep**<br>• **Surgical site marking**<br>• Encourage deep breathing & Incentive Spirometry q 1h x 10, while awake<br>• Turn/deep breathing/coughing in bed every 2 hours while awake<br>• Assess & document incision & dressing, | | | |
| **Diagnostic Tests** | • Review of PS T testing results<br>• Lab/Radiology tests in pacu as per MD order | | | |
| **Medications/IV** | • **Appropriate antibiotic within 1 hour of incision**<br>• **Chemical VTE (DVT) prophylaxis*, as per MD order**<br>• **Pain Management – analgesia as ordered**<br>• **Evaluate need for beta blocker during surgery**<br>• IV as per orders<br>• Postoperative antibiotics as ordered<br>• Antiemetics, as ordered<br>• Medication Reconciliation | | | |
| **Diet** | • NPO status before surgery<br>• Post op – Diet as ordered- advance as tolerated | | | |
| **Consults** | • As needed | | | |
| **Activity/ Safety** | • Call bell within reach/frequent rounds to assess needs<br>• **Bedrest until specified by surgeon, then ambulate as tolerated unless ordered otherwise and/or contraindicated**<br>• Safety maintained | | | |
| **Patient/Family Education** | • Benefits of pain management<br>• Activity/Safety<br>• Evaluate and reinforce patient's level of understanding as it relates to diet, activity, medications, signs and symptoms requiring intervention | | | |
| **Discharge Planning** | • Assess support network<br>• Referrals as indicated | | | |
| **Patient Outcomes** | • Safety maintained<br>• Assessments completed<br>• Uncomplicated post operative course<br>• Acceptable patient comfort level achieved<br>• Patient and/or family aware of plan of care | | | |
| **Supplementary Patient Needs** | | | | |

| | | INITIALS | | |
|---|---|---|---|---|
| **FOCUS** | PROGRESSIVE/DISCHARGE PHASE | N/A | D | N |
| **Assessment/ Interventions** | • Continuous assessment and reassessment of response to treatment and patient care<br>• **Mechanical VTE (DVT) prophylaxis**<br>• **Pain Management**<br>• Encourage deep breathing & Incentive Spirometry q 1h x 10, while awake<br>• Turn/deep breathing/coughing in bed every 2 hours while awake<br>• Assess & document incision & dressing,<br>• Assess & document bowel sounds | | | |
| **Diagnostic Tests** | • Per MD order | | | |
| **Medications/IV** | • **Antibiotic d/c within 24 hours from surgery end time**<br>• **Chemical VTE (DVT) prophylaxis*, as per MD order**<br>• **Pain Management – analgesia as ordered**<br>• D/C IV when tolerating po | | | |
| **Diet** | • **Tolerating po diet** | | | |
| **Consults** | • As required | | | |
| **Activity/ Safety** | • Fall precautions<br>• Call bell within reach/frequent rounds to assess needs<br>• Ambulate as tolerated unless ordered otherwise &/or contraindicated<br>• Promote independence with ADL to achieve pre-op level of functioning | | | |
| **Patient/Family Education** | • **Patient verbalizes willingness to comply to discharge and treatment plan**<br>• **Patient demonstrates understanding of surgical procedure and how it relates to medication compliance, diet, activity, and signs and symptoms requiring intervention**<br>• **Smoking cessation advice/counseling if indicated** | | | |
| **Discharge Planning** | • Assess support network<br>• discharge planning s/o & family involvement<br>• Initiate referrals as indicated<br>• **Discharge instructions and medications give by Discharge Nurse** | | | |
| **Patient Outcomes** | • Ambulating/Performing ADL's with optimal independence<br>• Acceptable patient comfort level achieved<br>• No surgical site infection<br>• Positive bowel sounds/passing flatus | | | |
| **Supplementary Patient Needs** | | | | |

## Appendix C. Variance Sheet

| **DAY** | CRITICAL ELEMENTS | MET | UNMET | **REASON UNMET |
|---|---|---|---|---|
| **Preadmission** | • **Admission Assessment including smoking cessation*** <br>• **Evaluate need for VTE (DVT) prophylaxis*** <br>• **Assess pain, establish comfort/function level – discuss pain management*** | | | |
| **Operative Day** | • **Surgical Consent*** <br>• **Mechanical VTE (DVT) prophylaxis*** <br>• **Appropriate Pre op skin prep*** <br>• **Surgical site marking*** <br>• **Appropriate antibiotic within 1 hour of incision *** <br>• **Chemical VTE (DVT) prophylaxis*** <br>• **Pain Management – analgesia as ordered*** <br>• **Bedrest until specified by surgeon, then ambulate as tolerated unless ordered otherwise and/or contraindicated*** | | | |
| **Post Op Day 1** | • **Foley catheter – D/C** <br>• **Antibiotic d/c within 24 hours from surgery end time*** <br>• **Tolerating diet** <br>• **Smoking cessation advice/counseling if indicated*** <br>• **Ambulating/performing ADL's w/optimal independence** <br>• **Acceptable patient comfort level achieved** <br>• **No signs of surgical site infection** <br>• **Patient verbalizes willingness to comply to discharge and treatment plan** <br>• **Patient demonstrates understanding of surgical procedure and how it relates to medication compliance, diet, activity, and signs and symptoms requiring intervention** <br>• **Discharge instructions and medications give by Discharge Nurse*** | | | |

World Health Organization

# SURGICAL SAFETY CHECKLIST (FIRST EDITION)

Before induction of anaesthesia ▸▸▸▸▸▸▸▸▸ Before skin incision ▸▸▸▸▸▸▸▸▸▸▸▸▸ Before patient leaves operating room

## SIGN IN

☐ **PATIENT HAS CONFIRMED**
- IDENTITY
- SITE
- PROCEDURE
- CONSENT

☐ **SITE MARKED/NOT APPLICABLE**

☐ **ANAESTHESIA SAFETY CHECK COMPLETED**

☐ **PULSE OXIMETER ON PATIENT AND FUNCTIONING**

**DOES PATIENT HAVE A:**

**KNOWN ALLERGY?**
☐ NO
☐ YES

**DIFFICULT AIRWAY/ASPIRATION RISK?**
☐ NO
☐ YES, AND EQUIPMENT/ASSISTANCE AVAILABLE

**RISK OF >500ML BLOOD LOSS (7ML/KG IN CHILDREN)?**
☐ NO
☐ YES, AND ADEQUATE INTRAVENOUS ACCESS AND FLUIDS PLANNED

## TIME OUT

☐ **CONFIRM ALL TEAM MEMBERS HAVE INTRODUCED THEMSELVES BY NAME AND ROLE**

☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE VERBALLY CONFIRM**
- PATIENT
- SITE
- PROCEDURE

**ANTICIPATED CRITICAL EVENTS**

☐ **SURGEON REVIEWS:** WHAT ARE THE CRITICAL OR UNEXPECTED STEPS, OPERATIVE DURATION, ANTICIPATED BLOOD LOSS?

☐ **ANAESTHESIA TEAM REVIEWS**: ARE THERE ANY PATIENT-SPECIFIC CONCERNS?

☐ **NURSING TEAM REVIEWS:** HAS STERILITY (INCLUDING INDICATOR RESULTS) BEEN CONFIRMED? ARE THERE EQUIPMENT ISSUES OR ANY CONCERNS?

**HAS ANTIBIOTIC PROPHYLAXIS BEEN GIVEN WITHIN THE LAST 60 MINUTES?**
☐ YES
☐ NOT APPLICABLE

**IS ESSENTIAL IMAGING DISPLAYED?**
☐ YES
☐ NOT APPLICABLE

## SIGN OUT

**NURSE VERBALLY CONFIRMS WITH THE TEAM:**

☐ **THE NAME OF THE PROCEDURE RECORDED**

☐ **THAT INSTRUMENT, SPONGE AND NEEDLE COUNTS ARE CORRECT** (OR NOT APPLICABLE)

☐ **HOW THE SPECIMEN IS LABELLED** (INCLUDING PATIENT NAME)

☐ **WHETHER THERE ARE ANY EQUIPMENT PROBLEMS TO BE ADDRESSED**

☐ **SURGEON, ANAESTHESIA PROFESSIONAL AND NURSE REVIEW THE KEY CONCERNS FOR RECOVERY AND MANAGEMENT OF THIS PATIENT**

**THIS CHECKLIST IS NOT INTENDED TO BE COMPREHENSIVE. ADDITIONS AND MODIFICATIONS TO FIT LOCAL PRACTICE ARE ENCOURAGED.**

## About the Authors

Sharon Silow-Carroll, M.B.A., M.S.W., is a health policy analyst with nearly 20 years of experience in health care research. She has specialized in health system reforms at the local, state, and national levels; strategies by hospitals to improve quality and patient-centered care; public–private partnerships to improve the performance of the health care system; and efforts to meet the needs of underserved populations. Prior to joining Health Management Associates as a principal, she was senior vice president at the Economic and Social Research Institute, where she directed and conducted research studies and authored numerous reports and articles on a range of health care issues.

Aimee Lashbrook, J.D., M.H.S.A, is a senior consultant in Health Management Associates' Lansing, Michigan, office. Ms. Lashbrook has six years of experience working in the health care industry with hospitals, managed care organizations, and state Medicaid programs. She provides ongoing technical assistance to state Medicaid programs, and has played a key role in the development and implementation of new programs and initiatives. Since joining HMA in 2006, she has conducted research on a variety of health care topics. Aimee earned a juris doctor degree at Loyola University Chicago School of Law and a master of health services administration degree at the University of Michigan.

## Acknowledgments

We wish to thank James O'Connor, M.P.S., RRT, executive vice president and chief administrative officer; Dante Latorre, M.P.S., RHIA, CPHQ, FACHE, vice president, quality and regulatory affairs; Lee Kucera, M.S., R.N., FACHE, director of quality and performance improvement; Joanne Lauten, R.N., core measure coordinator; Kathleen Bergreen, R.N., nursing care coordinator, ASU, PACU, and radiology special procedures; and Marianne Manzo, R.N., perioperative product line manager, for generously sharing their time, knowledge, and materials with us.

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*Editorial support was provided by Martha Hostetter.*

This study was based on publicly available information and self-reported data provided by the case study institution(s). The Commonwealth Fund is not an accreditor of health care organizations or systems, and the inclusion of an institution in the Fund's case studies series is not an endorsement by the Fund for receipt of health care from the institution.

The aim of Commonwealth Fund–sponsored case studies of this type is to identify institutions that have achieved results indicating high performance in a particular area of interest, have undertaken innovations designed to reach higher performance, or exemplify attributes that can foster high performance. The studies are intended to enable other institutions to draw lessons from the studied institutions' experience that will be helpful in their own efforts to become high performers. It is important to note, however, that even the best-performing organizations may fall short in some areas; doing well in one dimension of quality does not necessarily mean that the same level of quality will be achieved in other dimensions. Similarly, performance may vary from one year to the next. Thus, it is critical to adopt systematic approaches for improving quality and preventing harm to patients and staff.