Core Measures: The Nurse’s Role

Three (3.0) Contact Hours

Course Expires: 12/10/2016

First Published: 5/13/2013

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Acknowledgements

RN.com acknowledges the valuable contributions of...

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Purpose and Objectives
The purpose of Core Measures: The Nurse’s Role is to present information about Core Measures and define the role of the nurse in improving the healthcare organization’s performance on Core Measures.

After completing this course, the participant will be able to:
1. Define Core Measures.
2. Explain how Core Measures are used.
3. Explain the relationship between Core Measures and other quality and safety initiatives.
4. Give examples of specific Core Measures and measurement criteria.
5. Describe the role of the nurse in improving a healthcare organization’s performance on Core Measures.

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What are Core Measures?

Core Measures are evidence-based criteria that indicate timeliness and effectiveness of care for specific conditions.

They state key actions which have contributed to successful outcomes for these conditions:

- Acute Myocardial Infarction (AMI)
- Heart Failure (HF)
- Pneumonia (PN)
- Surgical Care: The Surgical Care Improvement Project (SCIP)
- Children’s Asthma Care (CAC)
- Venous Thromboembolism (VTE)
- Stroke (STK)

For example, one of the Heart Failure Core Measures requires:

Written discharge instructions to the patient or caregiver that address all of the following:

- Activity level
- Diet
- Discharge medications
- Follow-up appointment
- Weight monitoring
- What to do if symptoms worsen

How are Core Measures Used?

Healthcare organizations report their performance on Core Measures to the Joint Commission (TJC) and to the Centers for Medicare and Medicaid Services (CMS). The organization’s results on Core Measures affect TJC accreditation and CMS reimbursement for care.

Hospitals may report quarterly or monthly.

CMS and TJC update Core Measures and retire some Core Measures on an ongoing basis. It is important to always refer to the latest edition. Information in this course pertains to 01/1/13 – 12/31/13, version 4.2 of the Specifications Manual.

In addition, the public may compare specific healthcare organizations’ results on Core Measures at the TJC website and at the U.S. Department of Health and Human Services (USDHHS) Hospital Compare website.

Core Measures Reporting

The Specifications Manual provides detailed instructions and algorithms concerning reporting. Some patients whose diagnoses fit with Core Measures may be excluded from reporting for specific reasons, such as receiving comfort measures only, or discharge to a hospice setting.

Performance on Core Measures is reported as percentage of compliance with the measure. For example, one hospital’s performance on two of the AMI measures as shown at the Hospital Compare Website:
Hospital Compare Website
This is a snapshot of the Hospital Compare website. Note that tabs allow access to several types of data.

Core Measures: Part of a Bigger Picture
Certainly the implications for accreditation and reimbursement of your healthcare organization are important. But also remember that these measures reflect evidence-based guidelines for successful patient outcomes. By facilitating your organization’s compliance with Core Measures, you are providing and promoting quality patient care.

Core Measures are a part of the Hospital Quality Initiative (HQI), a program of the U.S. Department of Health and Human Services.

HQI “uses a variety of tools to stimulate and support a significant improvement in the quality of hospital care. The initiative aims to refine and standardize hospital data, data transmission, and performance measures in order to construct one robust, prioritized, and standard quality measure set for hospitals. The goal is for all private and public purchasers, oversight and accrediting entities, payers and providers of hospital care to use these same measures in their national public reporting activities.”


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For many years, both TJC and CMS have required healthcare organizations to report quality and safety information in order to maintain TJC accreditation and receive CMS reimbursement for care. In 2003, TJC and CMS began a collaborative project to define a set of criteria that TJC and CMS could each use in assessing performance of healthcare organizations.

Core Measures and Value-based Purchasing
The Hospital Value-Based Purchasing (Hospital VBP) program links a portion of Inpatient Prospective Payment System (IPPS) hospitals' payment from CMS to performance on a set of quality measures. The Hospital VBP Total Performance Score (TPS) for FY 2013 has two components:

- The Clinical Process of Care Domain (Core Measures) includes 12 clinical measures and accounts for 70% of the TPS.
- The Patient Experience of Care Domain [Hospital Consumer Assessment of Hospital and Provider Services (HCAHPS) results] accounts for 30% the TPS.

Beginning in October 2012, under CMS's Value-Based Purchasing (VBP) plan, Medicare:

- Withholds 1% of its payments to hospitals which perform poorly on HCAHPS measures.
- Places withheld funds into a pool to be distributed as bonuses to hospitals which score above average on several measures.

Bush, 2011; Carmenico, 2011; CMS, 2012; Rau, 2011

What Does the HCAHPS Survey Ask?
The HCAHPS survey asks the patient 18 questions to rate care on eight key topics:

1. Communication with doctors
2. Communication with nurses
3. Responsiveness of hospital staff
4. Pain management
5. Communication about medicines
6. Discharge information
7. Cleanliness of the hospital environment
8. Quietness of the hospital environment

The survey also includes four screener questions and five demographic items, which are used for adjusting the mix of patients across hospitals and for analytical purposes.

The survey is 27 questions in length.

Five percent of all patients discharged from hospitals receive the survey by telephone, mail, interactive voice, or mail followed by telephone.

CMS has prepared English, Spanish, Chinese, Russian and Vietnamese versions. HCAHPS [On-Line website] has posted the English and Spanish versions.
The Core Measures Specifications Manual

CMS and TJC publish a manual, Specifications Manual for National Hospital Inpatient Quality Measures, that describes and defines criteria for each Core Measure in detail and also includes:

- Reporting and analysis of Core Measures data
- Global National Hospital Inpatient Quality Measures which include:
  - Emergency Department
  - Immunization
  - Tobacco Treatment
  - Substance Use
- CMS outcomes measures which include 30-day morbidity and 30-day mortality data for specific conditions
- Agency for Healthcare Research and Quality (AHRQ) Measures: Patient Safety Indicators (PSI)
- Healthcare Associated Infections (HAI) Measures:
  - Central line-associated bloodstream infection (CLABSI)
  - Catheter-associated urinary tract infection (CAUTI)
  - Surgical site infection (SSI)
  - Methicillin-resistant Staphylococcus aureus infection (MRSA)
  - Clostridium difficile infection (C.diff)
  - Healthcare personnel influenza vaccination

Test Yourself

Your organization’s ratings on Core Measures are:
- A. Held confidential by the Joint Commission (TJC)
- B. Held confidential by the Centers for Medicare and Medicaid Services (CMS)
- C. Made available to the public at the Hospital Compare Website

The Nurse’s Role

The slides which follow list the Core Measures and display the specific criteria for each one.

You will notice that many of the measures and criteria are the provider’s responsibility, such as ordering tests and medications. This course states that you will “expect to find” certain orders, consults, and documentation. Most healthcare organizations have adopted checklists, order sets, protocols, patient teaching materials, and documentation aids to promote compliance with Core Measures. Identify and use your organization’s resources to aid compliance with Core Measures.

What you do if you do not find orders or documentation that you “expect to find” will depend upon your organization’s procedures and expectations. You may remind a provider, request orders, report to the charge nurse or your supervisor, or pursue the chain-of-command to fulfill the requirements of the Core Measure.

With other measures and criteria your role may be to administer medications, remove an indwelling urinary catheter, provide patient and family teaching, and other nursing responsibilities.
A critical role for the nurse is to DOCUMENT compliance with the Core Measures. Your healthcare organization’s performance on Core Measures is assessed with documentation. You will notice that some of the measures include specific time elements. Timely documentation is extremely important.

The familiar saying, "If it wasn’t documented, it wasn’t done" has real consequences for your organization in accreditation and reimbursement for care, in addition to the legal implications.

You will find more detailed information about the nurse’s role in each Core Measure following the slide that presents the measure and criteria.

**Core Measures Criteria**

The slides which follow display the specific criteria for these Core Measures:

- Acute Myocardial Infarction (AMI)
- Heart Failure (HF)
- Pneumonia (PN)
- Surgical Care Improvement Project (SCIP)
- Children’s Asthma Care (CAC)
- Venous Thromboembolism (VTE)
- Stroke (STK)
- Global Measures
  - Emergency Department (ED)
  - Immunization (IMM)
  - Tobacco Treatment (TOB)
  - Substance Use (SUB)

**Acute Myocardial Infarction (AMI) Core Measures**

The AMI Core Measures are reported as the percentage of patients during the reporting period who received:

- Aspirin at arrival, within 24 hours before or upon arrival
- For AMI patients with ST-segment elevation or left bundle branch block (LBBB) on the ECG performed closest to hospital arrival time:
  - Median time to fibrinolysis
  - Fibrinolytic therapy received within 30 minutes of hospital arrival
  - Median time to primary percutaneous coronary intervention (PCI)
  - Primary PCI received within 90 minutes of hospital arrival
- ACE inhibitor or angiotensin receptor blocker (ARB) for left ventricular systolic dysfunction
- Discharge prescriptions:
  - Aspirin
  - Beta-blocker
  - Statin

**AMI Core Measures: The Nurse's Role**

If you work in the Emergency Department or in the Interventional Cardiology Department, you may be instrumental in assuring that the necessary orders are in place.

Facilitate timely administration of:
• Aspirin upon arrival
• Fibrinolytic therapy within 30 minutes of arrival, if indicated
• Primary percutaneous intervention within 90 minutes of hospital arrival, if indicated

**Document in a timely fashion and facilitate timely documentation by others.**

The provider may evaluate left ventricular systolic function with diagnostic testing or with clinical symptoms. If the provider diagnoses left ventricular systolic dysfunction (LVSD), the provider should prescribe an ACE inhibitor*, or if the patient cannot tolerate an ACE inhibitor, an angiotensin receptor blocker (ARB)*. Evaluation of left ventricular function must be documented.

• Aspirin
• Beta blocker*
• Statin*

These medications should be ordered during the hospital stay as well. Administer and document the medications as ordered. Provide patient and family teaching regarding all medications.

*See examples of these medications on the next slide.

**AMI Core Measures: ACEI and ARB Medications**

**Examples of ACEIs:**
- Benazepril (Lotensin®, Lotensin Hct®)
- Captopril (Capoten®)
- Enalapril (Vasotec®)
- Fosinopril (Monopril®)
- Lisinopril (Prinivil®, Zestri®)
- Moexipril (Univasc®)
- Perindopril (Aceon®)
- Quinapril (Accupril®)
- Ramipril (Altace®)
- Trandolapril (Mavik®)

**Examples of ARBs:**
- Candesartan (Atacand®)
- Eprosartan (Teveten®)
- Irbesartan (Avapro®)
- Losartan (Cozaar®)
- Olmesartan (Benicar®)
- Telmisartan (Micardis®)
- Valsartan (Diovan®)

The Specifications Manual lists numerous specific ACEIs and ARBs that fit guidelines, however the list is not intended to be inclusive.
Patient Teaching: ACEI and ARB Medications

ACEI Medications
- ACE inhibitors inhibit the activity of angiotensin converting enzyme which causes muscles surrounding arteries to contract, narrowing the vessels. The narrowing of the vessels raises blood pressure. ACE inhibitors inhibit the activity of the angiotensin converting enzyme, thus causing a relaxation of the vessels.
- Common adverse effects include:
  - Dizziness
  - Headache
  - Drowsiness
  - Diarrhea
  - Low blood pressure
  - Weakness
  - Nonproductive, persistent cough
  - Rash
- NSAIDs may increase the effect of ACEIs
- ACEIs may increase potassium levels
- If the patient takes lithium, ACEIs may raise blood levels of lithium
- ACEIs may cause photosensitivity

ARB Medications
- Angiotensin II is a potent vasoconstrictor. ARBs block angiotensin II receptors and decrease the effect of angiotensin II. Therefore vasoconstriction is reduced and blood pressure is reduced.
- Advise patients to:
  - Have blood pressure checked regularly
  - Rise slowly from sitting
  - Avoid situations that reduce blood pressure such as dehydration, excessive sweating
  - Continue the medication even though you feel well
  - Refrain from taking potassium supplements unless ordered by your provider

(Lacy et al., 2009)

AMI Core Measures: Beta blocker and Statin Medications

Examples of beta blocker medications:
- Acebutolol (Sectral®)
- Atenolol (Tenormin®)
- Bisoprolol (Zebeta®)
- Carvedilol (Coreg®)
- Esmolol (Brevibloc®)
- Labetalol (Normodyne®), (Trandate®)
- Metoprolol (Lopressor®), (Toprol-XL®)
- Propranolol (Inderal®)

Examples of statin medications:
- Atorvastatin (Lipitor®), with amiodipine besylate (Caduet®)
- Fluvastatin (Lescol®)
- Lovastatin, with niacin XR (Advicor®), XR (Altocor®, Altoprev®), (Mevacor®)

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Nystatin (Mycostatin®)
Pitavastatin (Livalo®)
Rosuvastatin (Crestor®)
Sitagliptin and simvastatin (Juvisync®)

The Specifications Manual lists numerous specific beta-blockers and statins that fit guidelines, however the list is not intended to be inclusive.

**Patient Teaching: Beta blocker and Statin Medications**

**Beta blocker Medications**
- Beta blockers slow heart rate and lessen the force of heart contraction, thereby lowering blood pressure. Usually are given with other medications that reduce blood pressure.
- Because the medication slows heart rate, if heart rate is less than 60 beats per minute, do not take the medication and notify the provider.
- Though many patients experience no adverse effects, side effects may include:
  - Fatigue
  - Cold hands
  - Headache
  - Upset stomach
  - Constipation
  - Diarrhea
  - Dizziness

- Beta blockers may mask signs of hypoglycemia. Diabetic patients should monitor blood glucose closely.
- Beta blockers may trigger asthma attacks.

**Statin Medications**
- Statins work in the liver to reduce bad cholesterol (LDL) and increase good cholesterol (HDL).
- Advise patients to:
  - Have periodic blood tests for cholesterol and liver function
  - Reduce dietary cholesterol:
    - Use the food label to choose foods lower in saturated fat, including trans fats, and calories.
    - Eat more fruits and vegetables.
  - Maintain a healthy weight
  - Continue the medication unless the provider advises otherwise
  - Exercise within any physical limitations

(Lacy et al., 2009)

**Patient Teaching: Aspirin**
Aspirin is widely used for pain relief and to reduce fever. Because it is a very familiar medication for other uses, patients may not be aware of its therapeutic value in cardiovascular disease. To increase likelihood of compliance, explain in terms understandable to the patient that:

“Aspirin reduces the risk of heart attacks and strokes by preventing blood clots from forming on the surface of ruptured atherosclerotic plaques. Atherosclerotic plaques build up along the lining...
of blood vessels over many years in response to injury caused by high blood pressure, abnormal blood sugar levels, high blood cholesterol levels, and toxins contained in tobacco smoke.” (Paikin & Eikelboom, 2012, e439.)

- Advise patients:
  - Some aspirin products contain other ingredients which may be undesirable such as the caffeine content of Excedrin.
  - Take aspirin with food and consult with the provider if GI irritation becomes a problem.
  - Watch for signs of bleeding such as tarry stools and if noted, report to the provider. Bruising may occur.
  - Seek the provider’s advice about whether to cease taking aspirin when dental treatment, surgery, or any interventional procedure is planned.

The Specifications Manual lists numerous specific aspirin products that fit guidelines, such as Anacin®, Ascriptin®, Bufferin®, Bayer Aspirin®, Ecotrin®, Empirin®, and Zorprin® however the list is not intended to be inclusive.

Test Yourself
The nurse’s role in the acute myocardial infarction (AMI) core measures is largely related to:

A. Explaining cardiac risk factors to the patient
B. Timely administration and documentation of medications
C. Interpreting cardiac rhythm strips
D. Monitoring lab values for cardiac enzymes

Heart Failure (HF) Core Measures Reporting
The HF Core Measures are reported as the percentage of patients during the reporting period who received:

- Written discharge instructions that address all of the following:
  - Activity level
  - Diet
  - Discharge medications
  - Follow-up appointment
  - Weight monitoring
  - What to do if symptoms worsen

- Evaluation of left ventricular systolic (LVS) Function
- ACE inhibitor or angiotensin receptor blocker (ARB) for left ventricular systolic dysfunction (LVSD)

HF Core Measures: Reporting & The Nurse's Role
Do not wait until discharge to begin patient teaching. For optimal learning and reinforcement, provide information throughout hospitalization as the patient’s condition permits.

When administering medications, present information about action and adverse effects. At mealtimes, provide dietary information. Involve the nutritionist. Ask the patient about his daily weight and emphasize the importance of monitoring weight after discharge.
Ask the patient to tell you his understanding of the information so that you can clarify further and correct any misunderstandings.

At the time of discharge, provide the patient and caregiver with written discharge instructions. Review the instructions thoroughly at the time of discharge. Use a teach back method, asking the patient to explain the information to you to indicate understanding.

The HF Core Measures include two of the same requirements as the AMI Core Measure. Facilitate completion and documentation of:

- Evaluation of left ventricular systolic (LVS) function
- Order for ACE inhibitor or angiotensin receptor blocker (ARB) for left ventricular systolic dysfunction (LVSD)

**HF Core Measure: Patient Teaching & Follow-up Care**

**Activity level**
- Emphasize the benefits of activity as tolerated.
- Provide information about any prescribed activity program or cardiac rehabilitation.

**Diet**
- Provide information about heart healthy and low sodium food choices.
- Emphasize the importance of maintaining the desired weight.
- Involve the nutritionist in dietary teaching.

**Follow-up appointment**
- Emphasize the importance of regular follow-up visits with the provider.

**Weight monitoring**
- Advise the patient of the significance of weight with respect to fluid retention. Instruct the patient to:
  - Measure and record daily weight.
  - Report gain of more than 2 lbs in one day, or change in 5 lbs from usual weight.

**What to do if symptoms worsen, advise the patient to:**
- Report elevated temperature and any change in medication administration or tolerance.
- Contact his provider, or seek emergency care in case of severe dyspnea.
- Contact his provider if he experiences any of the DANGER symptoms shown on the next slide.

**HF Core Measures: Patient Teaching & DANGER Symptoms**
The DANGER acronym represents symptoms which indicate worsening of heart failure (RN.com, 2010).
Explain the DANGER signals and their significance in terms understandable to the patient.

**D**yspnea

**A**nxiety

**N**octurnal paroxysmal dyspnea

**G**ain in weight, more than 2 lbs per day or 5 lb gain

**E**dema of the lower extremities

**R**espiratory distress. Nasal flaring, use of accessory muscles of respiration

**HF Core Measures: Patient Teaching & Medications**

See ACE inhibitor and ARB information in AMI patient teaching information.

Patients who have heart failure will have additional medications prescribed, such as diuretics, digoxin, and perhaps antihypertensive medications in addition to the ACEI or ARB. Teach about these medications as well, including:

- Checking pulse before taking digoxin.
- Assuring that providers and pharmacists have a complete list of medications.
- Checking BP regularly.
- Taking diuretics during the day to avoid excessive urination during sleeping hours.
- Finding out whether potassium supplement is needed. ACEIs and potassium sparing diuretics may create potential for hyperkalemia, check with the provider or pharmacist.
- Monitoring for signs of dehydration and hypotension which may result from diuretic therapy.

**Pneumonia (PN) Core Measures**

The PN Core Measures are reported as the percentage of patients during the reporting period whose care included:

- Blood cultures performed within 24 hours prior to or 24 hours after hospital arrival for patients who were transferred or admitted to the ICU within 24 hours of hospital arrival
- Blood cultures performed in the emergency department prior to initial antibiotic received in hospital
- Immunocompetent patients who receive an initial antibiotic regimen during the first 24 hours that is compatible with current guidelines

Reporting to CMS and TJC differs slightly concerning the Initial Antibiotic Selection for community-acquired pneumonia (CAP).

For TJC, ICU and non-ICU patients are reported separately.
For CMS, ICU and Non-ICU patients are reported together.
**PN Core Measures: The Nurse's Role**

- Facilitate timely completion of blood cultures and appropriate antibiotic orders.
- Expect to find orders for antibiotic therapy within the first 24 hours of admission, and administer as ordered, and document.
- Expect to find orders for appropriate vaccinations; administer and document.
- Provide, or per organizational policy access resources to provide, smoking cessation and substance abuse counseling when indicated.
- Teach and emphasize the importance of preventive measures such as:
  - Deep breathing
  - Ambulation
  - Adequate fluid intake
  - Prompt treatment of upper respiratory infections
  - Safety measures to prevent aspiration pneumonia

Your organization’s Core Measures reporting includes readmission and mortality data. Your preventive teaching can impact readmission and mortality related to pneumonia.

**Surgical Care Improvement Project (SCIP) Core Measures**

The SCIP Core Measures include measures related to specific aspects of surgical care:

- Prophylactic antibiotic given within one hour prior to surgery, both overall rate and for specific surgical procedures
- Prophylactic antibiotic selection according to guidelines, both overall rate and for specific surgical procedures
- Prophylactic antibiotic discontinued within 24 hours after surgery (48 hours for cardiac surgeries), both overall rate and for specific surgical procedures
- Cardiac surgery patients with controlled 6 AM post-operative blood glucose
- Surgery patients with appropriate hair removal
- Urinary catheter removed on post-operative day 1 or day 2 (day of surgery=0)
- Surgery patients with perioperative temperature management
- Surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period
- Surgery patients who received appropriate venous thromboembolism prophylaxis within 24 hours prior to surgery to 24 hours after surgery

These Core Measures reflect evidence-based practices that have help to prevent post-operative infection and other complications of surgery.

**SCIP: Antibiotics Prescribed and Administered One Hour Prior**

The SCIP Core Measures are reported as the percentage of patients during the reporting period whose care included:

- Prophylactic antibiotic received within one hour prior to surgical incision.
  - Overall Rate
  - CABG
  - Cardiac Surgery other than CABG
  - Hip Arthroplasty

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- Knee Arthroplasty
- Colon Surgery
- Hysterectomy
- Vascular Surgery

- Prophylactic antibiotic selection (supported by evidence) for surgical patients.
  - Overall Rate
  - CABG
  - Cardiac Surgery other than CABG
  - Hip Arthroplasty
  - Knee Arthroplasty
  - Colon Surgery
  - Hysterectomy
  - Vascular Surgery

**SCIP Prophylactic Antibiotic Core Measures: The Nurse's Role**
If you are working in the perioperative area, expect to find a prophylactic antibiotic ordered; administer, and document one hour prior to surgical incision, or as ordered. Some antibiotics are to be administered 2 hours prior, such as vancomycin which is to be infused slowly.

The Specifications Manual lists more than 200 different antibiotics that fit guidelines, however, the list is not intended to be inclusive. The antibiotic ordered must be an evidence-based choice.

**SCIP: Antibiotics Discontinued**
Post-operative discontinuation of antibiotics is reported as:

- Prophylactic antibiotics discontinued within 24 hours after surgery end time.
  - Overall Rate
  - Hip Arthroplasty
  - Knee Arthroplasty
  - Colon Surgery
  - Hysterectomy
  - Vascular Surgery

- Prophylactic antibiotics discontinued within 48 Hours after surgery end time.
  - CABG
  - Cardiac Surgery other than CABG

Evidence shows that “administration of antibiotics for more than a few hours after the incision is closed offers no additional benefit to the surgical patient. Prolonged administration does increase the risk of Clostridium difficile infection and the development of antimicrobial resistant pathogens” (CMS & TJC, 2012, SCIP-Inf-3-2).

**SCIP Prophylactic Antibiotics Discontinued Core Measures: The Nurse's Role**
If you work in a post-operative area, expect to find orders to discontinue prophylactic antibiotics within 24 hours after anesthesia end time for surgeries other than cardiac procedures. Each of these procedures is reported separately:

- Hip Arthroplasty
- Knee Arthroplasty

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Colon Surgery
• Hysterectomy
• Vascular Surgery

Core measures reporting includes an overall rate for surgeries other than cardiac surgeries and separately for each of the surgeries listed above.

In the case of cardiac surgeries, expect to find orders to discontinue prophylactic antibiotics within 48 hours after surgery end time. For the purposes of reporting, CABG procedures are reported separately from other cardiac surgeries.

Expect to find orders written correctly for the correct time frame; carry out these orders and document in a timely fashion.

**SCIP: Pre-op and Peri-op Nursing**

**Hair Removal:** If you work in an area in which patients receive skin preparation for surgery, assure that either no hair is removed, or that clippers or a depilatory are used to remove hair. Use of razors has been shown to irritate the skin and contribute to breaks in the skin and to infection. Document the hair removal procedure.

**VTE Prophylaxis:** Expect to find venous thromboembolism (VTE) prophylaxis ordered. Because of the variability of surgical procedures and individual patient risk factors, this Core Measure states that VTE Prophylaxis should commence during a timeframe beginning 24 hours prior to anesthesia start time and ending 24 hours after anesthesia end time.

**Perioperative Temperature Management:** Expect orders for and document either:
- Active warming intraoperatively to maintain normothermia, or
- At least one body temperature equal to or greater than 96.8°F (36°C) recorded within the 30 minutes immediately prior to or 15 minutes immediately after anesthesia end time.

**Beta Blocker Therapy:** Check the medication profile/patient history for beta blockers. If the patient has been taking beta blockers, expect to find orders for a beta blocker medication during the perioperative period. Administer and document the beta blocker medication.

**SCIP: Post-op Nursing**

**Urinary Catheter Removal:** Expect to find orders consistent with removal of the urinary catheter on postoperative day 1 or postoperative day 2. Day of surgery=day zero. Remove the catheter and document removal. Follow up on the patient’s ability to void after catheter removal and document.

**Beta Blocker Therapy:** For those patients who were taking a beta-blocker prior to surgery, a beta-blocker should have been ordered, administered, and documented during the perioperative period. Check for this documentation and if absent, follow up appropriately. Post-operatively, assure that an order for a beta blocker is in place; administer and document the medication.

**VTE Prophylaxis:** VTE prophylaxis including an anticoagulant such as heparin and anti-thromboembolic stockings/sequential compression device may have been initiated during the perioperative period. If not, expect that VTE prophylaxis is initiated within 24 hours after anesthesia end time. Check for VTE prophylaxis orders; carry out and document within 24 hours after anesthesia end time. Include regular ambulation in the plan of care. Make a checklist for the patient on the whiteboard in the room so that the patient can “check off” ambulations around the unit. This provides an easy reference and reminder for the nurse and a sense of accomplishment and participation in recovery for...
the patient.

**Cardiac Surgery Patients Blood Glucose Control:** Check and document 6 A.M. blood glucose on post-op days one and two. Report and obtain orders to address blood glucose less than or equal to 200 mg/dL on postoperative day one and postoperative day two. (Anesthesia end time=day zero.)

**Test Yourself**
The Surgical Care Improvement Core Measures require discontinuation of antibiotics within a specified period post-operatively because:

A. Antibiotics are costly for CMS to reimburse.
B. IV antibiotics are prone to medication errors.
C. The risks of continuing outweigh the benefits.
D. Many patients develop allergies after 24 hours.

**Children’s Asthma Care (CAC) Core Measures**
The CAC Core Measures include measures related to inpatient treatment of children with asthma:

- Administering relievers for acute asthma
- Administering corticosteroids for acute asthma
- Providing Home Management Plan of Care (HMPC) document to patient or caregiver. The HMPC includes environmental control measures and information about use of rescue medications

The CAC Core Measures are reported for patients age 2 through 17, including:

- Overall percentage of patients who received for inpatient asthma (age 2 through 17 years), and reported separately for:
  - Age 2 through 4 years
  - Age 5 through 12 years
  - Age 13 through 17 years

- Overall percentage of patients who received systemic corticosteroids for inpatient asthma (age 2 through 17 years), and reported separately for:
  - Age 2 through 4 years
  - Age 5 through 12 years
  - Age 13 through 17 years

- Percentage of patients/caregivers provided with Home Management Plan of Care (HMPC) Document

**CAC Core Measures: Reliever Medications**
Bronchodilators, short-acting beta agonists (SABAs), are the evidence-based choice for relief of acute asthma symptoms.

Examples of reliever medications:

- Albuterol
- Albuterol Sulfate (Ventolin HFA®, Proventil HFA®, ProAir HFA®)
- Albuterol/Ipratropium (Combivent®, DuoNeb®,)

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• Epinephrine (Epipen®, Epipen Jr®, Twinject®)
• Ipratropium Bromide (Atrovent HFA®)
• Levabuterol hydrochloride (Xopenex® Xopenex HFA®)
• Metaproterenol
• Pirbuterol Acetate (MaxAir®, MaxAir autoinhaler®)
• Terbutaline

The Specifications Manual lists specific reliever medications that fit guidelines, however the list is not intended to be inclusive.

**CAC Core Measures: Adverse Effects**
Many patients experience no adverse effects. Undesirable effects may include:
- Appetite changes
- Dizziness
- Headache
- Hyperactivity
- Nausea
- Nervousness
- Shakiness
- Sinus pain
- Sore throat
- Tremor
- Trouble sleeping
- Vomiting

Instruct patients/parents to report to the provider if any of these persist.

Report to the provider immediately, if any of these effects are experienced:
- Allergic reactions like rash, hives, difficulty breathing, swelling of the mouth, face, lips, or tongue
- Chest pain
- Ear pain
- Fast or irregular heartbeat
- Hoarseness
- Pounding in the chest
- Red, swollen, blistered, or peeling skin
- Severe headache or dizziness
- Trouble breathing

Bass, 2009

**Systemic Corticosteroid Medications**
Evidence-based recommendations include the use of systemic corticosteroids to gain control of acute asthma exacerbation and reduce severity as quickly as possible in children with mild, moderate, and severe persistent asthma. Systemic corticosteroid use in inpatient asthma maintenance programs will relieve the bronchoconstriction that children suffer during acute asthmatic exacerbation during hospitalization (CMS & TJC, 2012, CAC-2-1).

Examples of systemic corticosteroid medications:

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• Dexamethasone (Cortistat®, Decadron®, Hexadrol®)
• Hydrocortisone (Cortisol®)
• Methylprednisolone (Medrol®, Solu-Medrol®)
• Prednisolone (Pedlapred®)
• Prednisone (Deltasone®)

The Specifications Manual lists specific reliever medications that fit guidelines, however the list is not intended to be inclusive.

CAC Medications: The Nurse's Role

If you work in an area that treats pediatric asthma patients, expect to find orders for a reliever medication and a systemic corticosteroid. Administer and document these medications.

Teach the child and parent or caregiver the proper use of inhaler medications. Although the patient may have been using an inhaler in the past, he may not have been using it correctly or as effectively as possible. Include information specific to systemic corticosteroids. Ask the patient and parent as appropriate to demonstrate and give corrective feedback. Provide written instructions with pictures or a diagram.

The use of the spacer improves delivery of the medication to the lungs and also helps to prevent thrush which may result from inhaled corticosteroids (AAFA, 2005).

Use of the Inhaler: Patient and Family Education

Instruct the child to:
• Take off the cap and shake the inhaler.
• Attach a spacer/chamber to the inhaler for effective distribution of the medication.
• Expel as much air from the lungs as possible by exhaling fully.
• **One of three** methods for inhalation may be used:
  1. Hold the inhaler 1” – 2” in front of the mouth (about 2 fingers width).
  2. Use a spacer/holding chamber.
  3. Place the inhaler directly in the mouth. This method should not be used with steroids. #1 and #2 are preferred methods.
• While breathing in slowly through the mouth, press down on the inhaler once. If using a holding chamber, depress the inhaler before beginning to inhale. Continue breathing deeply and slowly.
• Hold your breath to a slow count of 10, if possible.
• For relievers, wait about 15 – 30 seconds between puffs. Waiting is not necessary when using other medications.

(RN.com., 2011, screens 31 - 32)

Systemic Corticosteroids: Patient and Family Teaching

Inhaled corticosteroids have fewer adverse effects than systemic corticosteroids and are often prescribed for ongoing use in pediatric asthma. However, in the inpatient setting, guidelines recommend the use of systemic corticosteroids to gain control of acute asthma exacerbation and reduce severity as quickly as possible in children with mild, moderate and severe persistent asthma.

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The National Institutes of Health (NIH) advises that children who have not had chicken pox and periodically take oral corticosteroids should receive the Varicella vaccine after they’ve been steroid-free for at least one month. Kids who have finished a short course of prednisone may receive the vaccine immediately (AAFA, 2005).

Systemic corticosteroids are usually used on a short-term basis. Ongoing use may create risks for hyperglycemia, impaired growth, osteoporosis, and immunosuppression. These risks are not associated with the use of inhaled corticosteroids (AAFA, 2005). When systemic corticosteroids are prescribed it is important that the provider evaluates the patient regularly for the continued need for the medication.

Typically prescribed inhaled corticosteroids include:
- Beclomethasone dipropionate (QVAR®, Vanceril® AEM)
- Budesonide (Rhinocort®, Aqua®)
- Flunisolide (Nasarel®)
- Fluticasone (Flonase®, Veramyst®)
- Triamcinolone acetonide (Nasacort® AQ)

Some inhaled corticosteroids are dispensed in a Turbuhaler® which is a multi-dose dry-powder inhaler that minimizes delivery to the mouth and pharynx and does not require coordination between activation and inhalation.

**CAC Discharge Teaching**

Evidence supports the increased effectiveness of home management of childhood asthma when the patient and parent/caregiver receive written instructions about home management. Most healthcare organizations have adopted a document to address this Core Measure.

**Key points include:**
- Remove asthma triggers from the environment. Though triggers are individualized to the child, common triggers include dust, cockroach dust, cigarette smoke, and animal dander.
- Learn to recognize early symptoms and take action using prescribed medications.
- Engage regularly in physical activity as tolerated.
- Maintain an optimal state of health and nutrition.
- Seek regular follow-up with a provider for ongoing assessment and management.

Discuss these and other points in your organization’s HMPC document. Ask the patient and/or caregiver to vocalize these instructions to you to validate their understanding. Ask them to tell you how they will carry out these recommendations and any barriers that they foresee in complying. Assist them in addressing barriers through planning or if necessary consulting with a social worker or other professional as needed.

Document the discharge teaching session and that the patient or parent received the HMPC document. For optimal effectiveness, begin discussion of the discharge plans and follow up as far in advance of discharge as possible.

**Test Yourself**

When you are teaching a 9-year-old child who has a 5-year history of asthma and his parents, will you include instruction in the use of the inhaler?
- A. No. They have already been using the inhaler and it would be insulting.
B. No. You have too many other teaching priorities and at age 9 years the child should already be using the inhaler.

C. Yes. You don’t know whether the child has used the inhaler and used it correctly.

D. Yes. The Core Measures prescribe a specific protocol for inhaler use.

**Venous Thromboembolism (VTE) Core Measures**
The VTE Core Measures are reported as the percentage of patients during the reporting period who received:

- Thromboembolism prophylaxis
- Venous thromboembolism prophylaxis while in the Intensive Care Unit

And the percentage of patients with confirmed VTE who received:

- Unfractionated (UF) heparin with dosages/platelet count monitoring by protocol or nomogram
- Anticoagulation overlap therapy, overlapping IV or subcutaneous anticoagulant therapy with warfarin
- Warfarin therapy discharge instructions

And the percentage of patients with hospital-acquired potentially-preventable VTE who did not receive VTE prophylaxis between hospital admission and the day before the VTE diagnostic testing order date.

**VTE Prophylaxis: The Nurse's Role**
Hospitalization in itself creates a risk for VTE; surgery heightens that risk.

Expect to find orders for VTE prophylaxis, or that the patient’s record documents the reason for lack of VTE prophylaxis on the day of or the day after hospital admission or the surgery end date for surgeries beginning on the day of or the day after hospital admission.

Expect to find orders placed in a timely fashion, or the reason for lack of prophylaxis, based upon risk assessment is documented.

- Carry out and document VTE prophylaxis orders
- Encourage ambulation as the patient’s condition permits
- Observe for signs of VTE such as pain, swelling and redness in the calf and legs

**Evidence-based VTE Prophylaxis Recommendations**
The AHRQ evidence-based guideline (AHRQ, 2012) includes the following practices:

- Assessment of venous thromboembolism risk factors.
- Patient education and early ambulation.
- Mechanical thromboprophylaxis, such as the sequential compression device. Mechanical devices are not recommended as a sole method of prophylaxis.
- Pharmacologic prophylaxis.
- Special situations:
  - Evaluation of patients and procedures for high risk of bleeding
  - Dose adjustment of antithrombotics
  - Use of pharmacologic prophylaxis with neuraxial blockade
  - Use of aspirin following hip/knee arthroplasty*
  - Heparin-induced thrombocytopenia (HIT) monitoring

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Aspirin alone is not recommended for routine venous thromboembolism prophylaxis following hip/knee arthroplasty but may be considered in combination with mechanical prophylaxis methods in patients without additional risk factors.

**VTE Prophylaxis ICU: The Nurse’s Role**
Because of other priorities in the ICU setting, VTE prophylaxis may be neglected. Expect to find orders for VTE prophylaxis, or that the patient’s record documents the reason for lack of VTE prophylaxis on the day of or the day after the initial admission (or transfer) to the ICU or surgery end date for surgeries that start the day of or the day after ICU admission (or transfer).

VTE prophylaxis in the ICU is reported separately in addition to the overall rate.

Follow the practices on the previous slides concerning:
- Expecting timely orders or documentation of reason for lack of VTE prophylaxis
- Carrying out and document VTE prophylaxis
- Observing for evidence of VTE developing

**VTE Prophylaxis and Confirmed VTE: The Nurse's Role**
This measure identifies the percentage of patients who acquired a VTE while hospitalized AND did not receive VTE prophylaxis between the time of admission and the day before VTE diagnostic testing was ordered.

If a patient’s risk for VTE changes, report this finding so that prophylaxis can be initiated. For example, if a patient did not receive prophylaxis immediately after surgery because of excessive bleeding in surgery, but has no evidence of continued bleeding and has limited ability to ambulate, the patient might be a candidate for VTE prophylaxis.

Careful assessment both for changes in risk factors and for evidence of developing VTE may lead to successful prevention.

This Core Measure emphasizes the importance of timely initiation and documentation of VTE prophylaxis.

**Confirmed VTE and Anticoagulation Therapy: The Nurse’s Role in Heparin Therapy**

**Heparin Monitoring and Dosing.** Expect that patients with confirmed VTE have orders for unfractionated heparin (UFH) IV AND monitoring of platelets and activated partial thromboplastin time (aPTT) using defined parameters such as a nomogram or protocol. Expect that blood draws are completed as scheduled and results posted. Use the correct protocol to determine doses. Administer and document doses.

**Platelet count** detects the serious complication of Heparin-Induced Thrombocytopenia (HIT) with or without Thrombosis (HITT). HIT is signaled by a decrease in platelet count during or shortly following administration of heparin. Significant morbidity and mortality results from HIT and HITT (RN.com, 2012a).

**aPTT** is drawn prior to initiation of UFH, 4 to 6 hours after initiation, and 4 to 6 hours after a dose change. When the aPTT is within a therapeutic range for your patient’s weight and disease process, the
frequency of testing is decreased, usually to every 12-24 hours per hospital protocol.

Because UFH therapy causes different responses in different patients, the aPTT must be monitored during heparin therapy to monitor the effects of heparin.

**Protamine Sulfate** is the antidote for heparin and should be readily available when patients receive heparin. Locate protamine sulfate on your unit and review the procedure for administering it, including infusing slowly and monitoring aPTT.

(RN.com, 2012a)

### Heparin Monitoring: Platelet Count

**Platelet count**

The normal range for platelets is 150,000 – 400,000 per microliter. Platelet counts under 50,000 put a patient at risk of severe bleeding. Additionally, platelet count less than 20,000 may cause spontaneous and often deadly intracranial hemorrhaging (Grace & Carter, 1996 in RN.com, 2012a).

In HIT, platelet count falls to less than 50% of baseline and/or less than 150,000/microliter (Fennessy-Cooney, 2011 in RN.com, 2012a).

In HIT platelets generally do not fall below 100,000/microliter (Fennessy-Cooney, 2011 in RN.com, 2012a).

### Heparin Monitoring: aPTT

**Activated partial Thromboplastin Time (aPTT)** is a newer version of prothrombin time (PTT) and has largely replaced PTT.

aPTT is normally 25 – 35 seconds, but laboratories vary. Therapeutic anticoagulation is determined based upon your patient’s weight. It is often ordered to be maintained at 1.5 to 2.5 times the upper limit of the normal values (Valentine & Hull, 2012). The usual therapeutic goal is an aPTT approximately 1.5 - 2.5 times the mean normal value.

The standard activated partial thromboplastin time (aPTT) is usually between 30 - 40 seconds.

The standard partial thromboplastin time (PTT) is usually between 60 - 70 seconds.

(RN.com, 2012a)

### Confirmed VTE and Anticoagulation Therapy: The Nurse's Role in Overlap Therapy

**Overlap Therapy.** For patients who will be transitioned from heparin to warfarin for ongoing treatment of VTE and continued VTE prophylaxis, research findings support overlapping IV or subcutaneous heparin with warfarin. During initial warfarin therapy, there is a time delay in achieving an antithrombotic effect. The evidence recommends combining heparin and warfarin therapy for a minimum of 5 days and until the INR is greater than 2.0 for at least 24 hours and then a recommended target date. Overlap of heparin during initial warfarin dosing helps to prevent thrombus extension, embolization to the lungs, death due to pulmonary emboli (PE), and the development of complications such as recurrent thromboembolic events and the postthrombotic syndrome (CMS & TJC, 2011, VTE 3-1).

When a patient transitions from heparin to warfarin therapy, expect orders to include IV or
subcutaneous unfractionated heparin (UFH) or subcut low molecular weight heparin (LMWH), such as dalteparin (Fragmin®) or enoxaparin (Lovenox®). LMWH has advantages of greater predictability of response than UF heparin, once a day dosing, less risk of bleeding and HIT, and no need for laboratory monitoring (RN.com, 2012). LMWH is usually the choice for overlap therapy.

If the patient receives fewer than 5 days of overlap therapy while hospitalized, expect discharge prescriptions to include parenteral therapy or that a reason for discontinuing parenteral therapy is documented.

**LMWH Patient Teaching**
Verify that the patient and/or caregiver understands the purpose and precautions related to anticoagulant therapy, including preventing injury, observing for signs of bleeding, and complying with laboratory testing. Ongoing laboratory monitoring for LMWH therapy is usually not necessary.

Teach the patient and/or caregiver to administer subcutaneous enoxaparin. Observe at least one return demonstration and give corrective feedback. Instruct the patient:

- If you miss a dose, take it as soon as possible. However, if it is almost time for the next dose, do not take the missed dose at all. In this case, it is best to go back to the regular dosing schedule. Never double the next dose as it may cause active bleeding.

- Keep a record of each dose as you use it to avoid mistakes.

- Store LMWH prefilled syringes as the manufacturer recommends:
  - Keep the syringes away from direct heat and light
  - Do not freeze
  - Store at room temperature
  - Monitor expiration date
  - Keep away from children

(Lovenox, 2010 in RN.com, 2012)

**Warfarin Discharge Instructions: The Nurse’s Role**
Assure that patients discharged on warfarin receive written discharge instructions that include:

- Compliance issues
- Dietary advice
- Follow-up monitoring
- Information about the potential for adverse drug reactions/interactions

Most organizations have adopted a set of written instructions. Use this tool during hospitalization to teach the patient when you administer medications. You will assist the patient both in learning and in using the tool after discharge.

In some organizations, a pharmacist, representative of an anticoagulation service, or other personnel may deliver and document the patient’s receipt of written instructions.

The four slides that follow include specific points related to the required topics.

Follow your organization’s policy, including discharge instructions, and document.

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Warfarin Teaching: Compliance

Compliance issues

- Based upon laboratory results, the provider may change doses frequently. The provider may tell you to take a different dose on different days of the week, such as 5 mg Monday and Wednesday, 2.5 mg on other days of the week. Follow these instructions scrupulously.
- Take warfarin at the same time every day, with or without food.
- If you miss a dose take it later the same day. If you do not take the dose on that day, skip the dose. Do not take a double dose on the following day. Notify your provider of the missed dose.
- Tell your primary provider, pharmacist, and other healthcare providers and professionals with whom you consult about all the medications, herbs, and botanicals that you take. Warfarin interacts with a very large number of medications and substances. Changes in your intake of medications and other substances may create a need to adjust your warfarin dose.
- If you become pregnant, notify your provider. Warfarin can harm the fetus and should be discontinued during pregnancy.
- Warfarin does not enter breast milk and is considered compatible with breastfeeding.
- If you are scheduling invasive dental procedures, surgery, colonoscopy, or other procedure that entails risk of bleeding, contact your provider about discontinuing warfarin. Usually warfarin is discontinued 3 days prior to intrusive procedures. In some situations, 4 – 5 days in advance of a procedure may be recommended. Follow your provider’s instructions.
- Consult your provider for any indications of bleeding or severe diarrhea (which alters vitamin K absorption). Because Vitamin K is the antidote for warfarin, consistent Vitamin K levels are important.
- Maintain a safe environment to decrease the risk for falls and other injuries. Excessive bleeding may result from any injury, including internal bleeding with no break in the skin.
- Wear a MedicAlert ID bracelet or necklace.

(Lacy et al., 2009; MedlinePlus, 2010; RN.com 2012b, screen 34.)

Warfarin Teaching: Dietary Advice

Dietary Advice

- Maintain a consistent diet, particularly vitamin K intake. Because vitamin K is the antidote for warfarin, consistent vitamin K levels are important. A consistent intake of 70 – 140 mcg/day is recommended. Foods high in vitamin K include: asparagus, alfalfa, broccoli, Brussels sprouts, cabbage, cauliflower, green leafy vegetables, green tea, kale, lettuce, beef or pork liver, spinach, turnip greens, watercress.
- Vitamin E and cranberry juice increase the effect of warfarin.
- Avoid alcoholic beverages. Acute ingestion of alcohol slows warfarin metabolism which increases the effect of warfarin; chronic use increases warfarin metabolism which decreases the effect of warfarin.
- Numerous herbals, spices, and dietary supplements interact with warfarin. Examples include alfalfa, anise, bilberry, bromelain, cat's claw, chamomile, coenzyme Q, cranberry, evening primrose oil, fenugreek, feverfew, garlic, ginger, ginkgo biloba, ginseng (American), glucosamine, grape seed, horseradish, licorice, St John’s wort, and many others.

(Lacy et al., 2009; MedlinePlus, 2010; RN.com 2012b, screen 34.)

Warfarin Teaching: Follow-up Monitoring

Follow-up Monitoring

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Be alert for subtle signs of bleeding, such as:
- Dark tarry stools
- Dizziness
- Weakness
- Shortness of breath
- Decreased urine output
- Headache
- Mental status changes

Adhere to the schedule for PT, INR testing. Initially frequent testing may be necessary to regulate your dosage. Ongoing testing on the schedule your provider gives you is needed to keep your dosage safe and effective.

(Lacy et al., 2009; MedlinePlus, 2010; RN.com 2012b, screen 34.)

**Warfarin Teaching: Adverse Reactions**

*Adverse Medication Reactions*

The most important potential adverse reaction is bleeding. Report bleeding to your provider immediately.

Some patients have reported experiencing:
- Gas
- Change in the way things taste
- Tiredness
- Pale skin
- Loss of hair
- Feeling cold or having chills

Warfarin interacts with NUMEROUS prescription medications and OTC medications. Some increase the effect of warfarin; some decrease the effect of warfarin. Consistent use of medications and routine PT and INR monitoring is necessary to regulate the warfarin dose and adjust for necessary changes in medications.

(Lacy et al., 2009; MedlinePlus, 2010; RN.com 2012b, screen 34.)
Test Yourself
What advice will you give to your patient who will be discharged on warfarin (Coumadin®) regarding intake of vitamin K?

A. Eliminate vitamin K from your diet
B. Take a vitamin K supplement daily
C. Maintain a consistent intake of vitamin K
D. Avoid dairy products because they are high in vitamin K

Stroke (STK) Core Measures
The STK Core Measures require reporting of the percentage of patients with ischemic or hemorrhagic stroke who:

- Received VTE prophylaxis or have documentation of why no VTE prophylaxis was given the day of or the day after hospital admission.
- Were discharged on antithrombotic therapy (ischemic stroke only)
- Were prescribed anticoagulation therapy if they have atrial fibrillation/flutter (ischemic stroke only)
- Received IV t-PA within 2 hours of the time last known to be well (acute ischemic stroke only who arrived at this hospital within 3 hours of the time last known to be well)
- Received antithrombotic therapy by the end of hospital day 2 (ischemic stroke only)
- Received a statin medication prescription at hospital discharge (only ischemic stroke patients with LDL greater than or equal to 100 mg/dL, or LDL not measured, or who were on a lipid-lowering medication prior to hospital arrival)
- Received or caregiver received educational materials during the hospital stay addressing all of the following:
  - Activation of emergency medical system,
  - Need for follow-up after discharge, medications prescribed at discharge,
  - Risk factors for stroke, and
  - Warning signs and symptoms of stroke.

- Were assessed for rehabilitation

t-PA: Inclusion and Exclusion Criteria
If you work in an Emergency Department or cardiac care setting that receives patients directly, timely initiation of IV t-PA for appropriate candidates is critical.

Know the criteria for thrombolytic therapy and expect that patients will receive a prompt evaluation.

Inclusion criteria:
- Patient last seen symptom-free within 3 hours
- CT scan is negative for bleeding
- Patient is at least 18 years old
- A qualified physician diagnoses acute ischemic stroke
- Patient continues to experience a neurological deficit

Exclusion criteria:

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- Active internal bleeding
- Suspicion or confirmed bleed in the brain
- Heparin within 48 hours of the onset of the stroke
- Uncontrolled hypertension (185/110 mmHg) at potential time of infusion
- Seizure witnessed at the time of the stroke
- History of intracranial, intraspinal injury, or intracranial bleeding
- Bleeding disorders
- Current use of anticoagulants

(Gahart & Narareno, 2011 in RN.com, 2012c)

**Administering t-PA: The Nurse’s Role**

If you work in an area in which t-PA is administered, **know your organization’s protocol and follow it precisely**. Protocols typically include:

- Typical dosing.
  - 0.9 mg/kg not to exceed 90 mg
  - Bolus 10% of the dose IV over 1 – 2 minutes
  - Administer 90% via continuous IV infusion over 1 hour
- Any invasive lines needed should be placed prior to t-PA infusion because of bleeding risk.

(Pugh et al., 2009 in RN.com, 2012c)

**Monitoring t-PA: The Nurse's Role**

If you work in an area in which t-PA is administered, **know your organization’s protocol and follow it precisely**. Protocols typically include:

- Monitor BP continuously and keep BP less than 185/110 mmHg to decrease risk of hemorrhage.
  - For BP greater than 185/110 mmHg, administer and document anti-hypertensive medications as ordered, such as labetalol or nicardipine.
  - Complete and document neuro checks Q15 minutes during administration; Q 30 minutes for 2 hours after t-PA; then hourly.
  - Monitor cardiac rhythm for 24 hours after t-PA.

(Pugh et al., 2009 in RN.com, 2012c)

- Risks include bleeding in the brain, other internal bleeding, and allergic reaction to t-PA.
  - Assure and document that patient and family receive information about risks.
  - Monitor neurological status and invasive line insertion sites frequently to detect bleeding and document results.

(Jauch et al., 2010 in RN.com, 2012c)
Stroke (STK): The Nurse's Role with Inpatient Medications

- **VTE prophylaxis.**

- **Anticoagulation therapy** for patients with ischemic stroke who have atrial fibrillation/flutter.

- **Antithrombotic therapy** for patients with ischemic stroke should be initiated and documented by the end of the second day post-stroke. Anticoagulants at doses to prevent venous thromboembolism are insufficient antithrombotic therapy to prevent recurrent ischemic stroke or TIA (CMS & TJC, 2012, STK-5-1). If necessary, contact the provider for orders. Administer and document medications.

The Specifications Manual list approximately 100 antithrombotic medications for patients with stroke, including:

- Aspirin products
- Clopidogrel (Plavix®)
- Heparin and LMWH such as enoxaparin (Lovenox®)
- Ticlopidine (Ticlid®)
- Lepirudin (Refludan®)
- Rivaroxaban (Xarelto®)
- Warfarin (Coumadin®)

This list is not meant to be all inclusive.

Stroke (STK): The Nurse's Role with Discharge Medications

- Prepare patients who have had an ischemic stroke for self-administering antithrombotic medications after discharge. Review the action and precautions associated with these medications with the patient when you administer the medications. Patients may transition from heparin to warfarin with overlap therapy (Slide 44) as explained earlier in the course.

- Patients who have had an ischemic stroke should receive a discharge prescription for a statin medication if they have LDL greater than or equal to 100 mg/dL, or LDL not measured, or took a lipid-lowering medication prior to hospital arrival.

- Discharge medications will most likely have been administered during hospitalization. Use medication administration as a teaching opportunity. The major risk with antithrombotic therapy is risk of bleeding. Advise patients to be alert for signs of bleeding and to adhere to instructions related to the specific medications prescribed.

- Document both medication administration and patient teaching about medications.

Stroke (STK): The Nurse's Role with Discharge Instructions

Your healthcare organization has very likely developed or adopted patient education materials to meet the Core Measures requirements. As soon as the patient is able or the caregiver is available, begin instruction related to the key points:

- Activation of emergency medical system
- Need for follow-up after discharge
- Medications prescribed at discharge
- Risk factors for stroke
- Warning signs and symptoms of stroke
Orient the patient and/or caregiver to the written materials and provide the materials upon discharge, according to your organization’s P&P.

**Stroke (STK): The Nurse's Role with Rehabilitation Assessment**

“Among the high priorities for stroke are to mobilize the patient and encourage resumption of self-care activities as soon as possible. Evidence indicates better clinical outcomes when patients with stroke are treated in a setting that provides coordinated, multidisciplinary stroke-related evaluation and services. Effective rehabilitation interventions initiated early following stroke can enhance the recovery process and minimize functional disability. The primary goal of rehabilitation is to prevent complications, minimize impairments, and maximize function.” (CMS & TJC, 2012, STK-10-1)

Expect that rehabilitation therapists will assess the patient and create a plan of care. A provider’s order for a consult usually initiates the involvement of therapists. This order may be a part of a standard order set or protocol in your organization.

Communicate with therapists who work with the patient so that during nursing care you can reinforce and support therapy activities and goals of therapy.

**Global Measure Sets**

For reporting purposes, CMS and TJC designate four measure sets as Global Measure Sets. The Global Measure Sets is an umbrella term that encompasses the four measure sets. The Specifications Manual defines the sampling and reporting procedures for Global Measures. The Global Measure Sets include Core Measures related to:

- Emergency Department (ED)
- Immunization (IMM)
- Substance Use (SUB)
- Tobacco Treatment (TOB)

**Emergency Department (ED) Core Measures**

**ED Core Measures require reporting of the:**

- Median time from ED arrival to ED departure for admitted ED patients as an overall rate and also separate reporting of:
  - Median time from ED arrival to ED departure for admitted ED patients who are observation patients
  - Median time from ED arrival to ED departure for admitted ED patients who are psychiatric/mental health patients

**ED Core Measures also require reporting of the:**

- Admit decision time to ED departure time for admitted patients as an overall rate and also separate reporting of:
  - Admit decision time to ED departure time for admitted patients who are psychiatric/mental health patients

**Emergency Department (ED) Timeliness: The Nurse's Role**

If you are working in the ED, work closely with interdisciplinary team members, including unit secretarial and administrative staff to assure timely assessment, decision making, admission, and discharge of
patients.

If you work in an area that frequently receives patients from the ED, such as the critical care units or the perioperative area, collaborate with ED nursing staff and with interdisciplinary team members on your unit to facilitate timely transfer and admission of patients to your area.

The leadership of your organization may undertake initiatives to streamline processes with the goal of improving timeliness of patient flow from the ED. Cooperate fully with pilot studies and give your feedback on these initiatives.

Because patient flow through the ED involves many disciplines and functions in a healthcare organization, the nurse’s role is to work effectively as a member of the team.

Your experience may have suggested some ways to improve patient flow from the ED. If so, communicate your ideas to leadership.

**Immunization (IMM) Core Measures**

IMM Core Measures require reporting of the rate of patients who receive specific immunizations:

- The overall rate of pneumococcal immunization
- The rate of pneumococcal immunizations for patients age 65 years and older
- The rate of pneumococcal immunizations for high-risk populations in the age group 5-years-old to 64-years-old
- The rate of influenza immunization

**The Nurse’s Role in Pneumococcal Immunization**

Pneumococcal infection causes an estimated 5,000 deaths annually in the United States (CDC, 2010). Pneumococcal infections result in approximately 2.4 million days of hospitalization. A sizable proportion of these cases and deaths are potentially preventable through vaccination (CMS & TJC, 2012, IMM-1-1).

- Expect that patients age 65 years and older and patients at risk (see next slide) will be screened for pneumococcal vaccine indications and vaccinated prior to discharge if indicated.
- Expect to find documentation of vaccination screening.
- Administer and document vaccine as ordered.
- Document the patient’s declination of vaccine, if the patient declines to receive it.
- If the patient has previously received pneumococcal vaccine, document that fact. One pneumococcal vaccination in a lifetime is considered adequate.
- Patients who have been previously vaccinated are counted in the measure the same as vaccinated patients and patient who decline vaccine.

**Who Should Receive Pneumococcal Polysaccharide Vaccine (PPSV)?**

- Patients age 2 years and older with a weakened immune system due to illnesses such as:
  - AIDS
  - HIV infection
  - Hodgkin’s disease
  - Leukemia
  - Lymphoma

Material protected by copyright
- Generalized malignancy
- Multiple myeloma
- Nephrotic syndrome
- Organ or bone marrow transplantation
- Chronic renal failure

- Patients age 19 through 64 years who smoke cigarettes or have asthma.
- Healthy persons younger than 65 years are **not** recommended to receive PPSV.
- Patients age 65 years and older
- Patients age 2 and older who have a chronic illness such as:
  - Alcoholism
  - Cardiovascular or lung disease
  - Cerebrospinal fluid (CSF) leak
  - Diabetes
  - Chronic liver disease
  - Sickle cell disease

- Patients age 2 and older who have a cochlear implant
- Patients age 2 years and older who:
  - Receive immunosuppressive therapy (e.g., steroids)
  - Have had spleen removal or have dysfunctional spleen due to illness (e.g., sickle cell disease)
  - Reside in nursing homes or long-term care facilities

The Nurse’s Role in Influenza Immunization
In order to protect as many people as possible before influenza activity increases, most flu-vaccine is administered September through November, but vaccine is recommended to be administered throughout the influenza season as well. Because the flu vaccine usually first becomes available in September, health systems can usually meet public and patient needs for vaccination in advance of widespread influenza circulation. The influenza season typically extends from November to April, peaking in February (CMS & TJC, 2012, IMM-2-2).

- Expect that patients age 6 months and older will be screened for influenza vaccination. And that screening is documented.
- Administer and document vaccination as ordered.
- Be sure to document*:
  - The patient having received influenza vaccination during the current influenza season
  - Declination of the vaccine if the patient declines
  - Contraindications for the vaccine and therefore no vaccination:
    - Allergy/sensitivity to the vaccine
    - Hypersensitivity to eggs or other component(s) of the vaccine, reducing effectiveness
    - History of Guillain-Barré Syndrome within 6 weeks after a previous influenza vaccination
    - Bone marrow transplant within the past 6 months
    - Anaphylactic latex allergy

*Patients to whom any of these situations apply are counted for the purpose of the measure the same as patients who were screened and received the vaccine.

Tobacco Treatment (TOB) Core Measures
- Tobacco Use: Screening
- Tobacco Use: Treatment Provided or Offered

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Tobacco Use: Treatment
Tobacco Use: Treatment Provided or Offered at Discharge
Tobacco Use: Treatment at Discharge
Tobacco Use: Assessing Status After Discharge

TOB Screening
The CDC reports that tobacco use is the single greatest cause of disease in the United States today and accounts for more than 435,000 deaths each year.

“There is strong and consistent evidence that tobacco dependence interventions, if delivered in a timely and effective manner, significantly reduce the user’s risk of suffering from tobacco-related disease and improved outcomes for those already suffering from a tobacco-related disease.

“Effective, evidence-based tobacco dependence interventions include:

- Brief clinician advice;
- Individual, group, or telephone counseling;
- Use of FDA-approved medications.”

Because hospitals are tobacco-free environments and because patients may be more motivated to quit as a result of illness, cessation assistance during hospitalization is likely to be effective. Patients who receive even brief advice and intervention from their care providers are more likely to quit than those who receive no intervention (CMS & TJC, 2012, TOB-1-1).

TOB Screening and Treatment: The Nurse’s Role
- Expect that patients will be screened for tobacco use.
- Tobacco use is defined as use of cigarettes, smokeless tobacco, pipe and/or cigars within the past 30 days.
- In most organizations, this step is a part of initial history and physical or nursing assessment. Be sure you know whether you are responsible for discussing treatment with the patient or initiating a referral for treatment during hospitalization or at the time of discharge.
- Regardless of whether you have responsibility for initiating a referral, encourage the patient about the health, social, and economic benefits of smoking cessation and the opportunity that hospitalization provides to cease smoking.
- If the patient refuses treatment, expect to find clear and correct documentation of the refusal. Two different TOB measures are reported separately: tobacco product users who:
  1. Receive or refuse practical counseling to quit AND receive or refuse FDA-approved cessation medications during the hospital stay.
  2. Receive counseling AND medication, as well as those who receive counseling and had reason for not receiving the medication. Those who refused counseling and/or medication without reason for not receiving medication are not reported in this measure.

TOB Discharge Treatment and Post-Discharge: The Nurse’s Role
Discharge Treatment. The following discharge information is reported:
- Tobacco product users who were referred to or refused evidence-based outpatient counseling AND received or refused a prescription for FDA-approved cessation medication upon discharge.
• Tobacco product users who were referred to evidence-based outpatient counseling AND received a prescription for FDA-approved cessation medication upon discharge as well as those who were referred to outpatient counseling and had reason for not receiving a prescription for medication.

Post-Discharge Status
Within 15 – 30 days post-discharge, former patients are contacted and follow-up information regarding tobacco use status is collected, including whether the former patient has:
• Received counseling
• Received medication
• Quit using tobacco products

The Nurse’s Role
• Expect to find documentation of discharge instructions and referrals.
• Encourage the patient about the benefits of tobacco cessation.
• Although the nurse has no direct role in the follow-up process, positive results of encouraging the patient and reinforcing the benefits of quitting may be apparent in the follow-up results.

Substance Use (SUB) Core Measures
Substance Use Core Measures parallel the Tobacco Use Core Measures and require reporting of:
• Alcohol Use Screening
• Alcohol Use Brief Intervention Provided or Offered
• Alcohol Use Brief Intervention
• Alcohol and Other Drug Use Disorder Treatment Provided or Offered at Discharge
• Alcohol and Other Drug Use Disorder Treatment at Discharge
• Alcohol and Drug Use: Assessing Status after Discharge

Persons with substance-use problems are at risk for injury and more than 50 different medical problems, including multiple forms of cancer, cirrhosis, dysrhythmias, dementia, depression, GI bleeding, hypertension, stroke, and infections such as tuberculosis, hepatitis, endocarditis, and HIV (CMS & TJC, 2012, SUB-1-1).

Clinical trials have demonstrated that brief interventions, especially prior to the onset of addiction, significantly improve health and reduce costs, and that similar benefits occur in those with addictive disorders who are referred to treatment (CMS & TJC, 2012, SUB-1-1).

SUB Screening: The Nurse’s Role
All cognitively intact patients over the age of 18 years whose hospital stay is between 1 day and 120 days in length are to be screened. Assure that the screening is documented.

Patients who have a blood alcohol test result that indicates acute intoxication and patients who refuse screening are counted as having been screened. Therefore it is important that these events are documented as well.

SUB Brief Intervention: The Nurse’s Role
Brief intervention reporting includes two measurements:
• The percentage of patients who screened positive for unhealthy alcohol use and either received or refused a brief intervention during the hospital stay.
The percentage of patients who actually received the brief intervention during the hospital stay.

Patients who refused screening or were not screened are not included when computing this percentage.

Know your organization’s policy regarding screening and brief treatment. Expect that referral for brief treatment is initiated when indicated and that brief treatment is documented.

**SUB Status After Discharge: The Nurse's Role**

Discharged patients who screened positive for unhealthy alcohol use or who received a diagnosis of alcohol or drug disorder during their inpatient stay are contacted between 7 and 30 days after hospital discharge and follow-up information regarding their alcohol or drug use status post discharge is collected: counseling, use of prescribed medication, and quit status.

**Nurse's Role**
The nurse has no direct role in collecting this data.

While the patient is in the hospital, the nurse can play a significant role in encouraging him or her in pursuing a healthy lifestyle post-discharge.

**Test Yourself**
If the patient refuses immunization or brief intervention for tobacco use or substance abuse, it is important to document the patient’s refusal.

A. True
B. False

**Morbidity Reporting**

CMS uses Medicare claims data to compile morbidity and mortality results. These results are available to the public on the Hospital Compare website. Reporting at the website compares a hospital’s results with national data, indicating whether a particular hospital’s results are no different from national rates, of better or worse than national rates.

Morbidity reporting includes the rate of patients who experience:

- Unplanned readmission within 30-days following hospitalization for any cause
- Readmission within 30 days following:
  - AMI hospitalization
  - HF hospitalization
  - PN hospitalization
  - Elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA)

Complications of THA or TKA identifiable in CMS claims data, including:

- AMI, pneumonia, sepsis/septicemia/shock within 7 days of the date of admission for the procedure, each individually reported
- Surgical site bleeding, pulmonary embolism within 30 days of the date of admission for the procedure, each individually reported
- Mechanical complications, periprosthetic joint infection/wound infection within 90 days of the date of admission for the procedure, each individually reported
More Information
Nurses in the Kaiser Permanente Colorado Region healthcare system collaborated with the Visiting Nurses Association (VNA) in Denver and achieved a 24% reduction in all-cause readmissions during the first 18 months.

Elderly patients with heart failure receive a home health nurse to visit within 48 hours of discharge. The nurse performs medication reconciliation and initiates self-management education.

The nurse visits another five to seven times over the next four to seven weeks to offer education based on a standard guideline that emphasizes goal setting; symptom identification; and specific self-management skills, including appropriate diet, daily recording of weight and blood pressure, and maintenance of dietary intake and general health logs.

The VNA nurses give Kaiser care coordinators regular updates and notify them of any signs of an exacerbation, allowing physicians to intervene on a timely basis. Improving patients' knowledge of various components of heart failure care and helped them employ good self-management behaviors such as weight and blood pressure measurement and medication and dietary adherence.

For even more information visit [www.innovations.ahrq.gov/content.aspx?id=3680](http://www.innovations.ahrq.gov/content.aspx?id=3680).

Mortality
Mortality reporting includes the rate of patients dying within 30 days following:

- Elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA)
- Hospitalization for AMI
- Hospitalization for HF
- Hospitalization for PN

Morbidity and Mortality
The nurse can favorably impact morbidity and mortality statistics with effective discharge planning and patient and family teaching about medications and all other aspects of care. Discharge planning may include referral to a disease management company or home healthcare organization.

Test Yourself
Morbidity and mortality data is collected and reported from which source?

A. State health department records
B. Centers for Medicare and Medicaid Service (CMS) claims
C. Accreditation survey records of The Joint Commission (TJC)
D. Each healthcare organization’s risk management department

Centers for Disease Control and Prevention (CDC) Data
The Hospital Compare website [http://www.medicare.gov/hospitalcompare/](http://www.medicare.gov/hospitalcompare/) also reports data that the CDC [http://www.cdc.gov/](http://www.cdc.gov/) collects via the National Healthcare Safety Network (NHSN) regarding infection control and prevention, including rates of hospital-acquired infections (HAIs) such as:

- Central Line-Associated Bloodstream Infection (CLABSI)
- Catheter-Associated Urinary Tract Infection (CAUTI)

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Infection Control and Prevention: The Nurse's Role
The CDC and the Institute for Healthcare Improvement (IHI) (http://www.ihi.org/) each make available “practice bundles” that include evidence-based practices that help to prevent infection. Healthcare organizations adopt these bundles and incorporate them into their own policies and procedures.

Review the practice bundles at the CDC and IHI websites. The IHI website posts reports of improvement in infection results obtained by specific healthcare organizations after initiating the practice bundles.

Handwashing and role modeling handwashing for other personnel is critical in infection prevention, particularly in containing MRSA and C. diff infection. Spread of C. diff infection cannot be prevented by the use of sanitizers alone, since the sanitizers do not eliminate the spores that spread C. diff.

Comply with your organization’s P&P regarding immunization of healthcare personnel.

Infection Control and Prevention: P&Ps
Follow your organization’s P&Ps regarding prevention of hospital-acquired infections. If your organization has not yet updated P&Ps, protocols, and documentation to reflect practice bundles, bring this to the attention of the appropriate individual or group in your organization.

In some cases, practice bundle guidelines do not conflict with policies and procedures and can be implemented even if the policy and procedure does not specifically state it. For example, the CAUTI-prevention guideline of reassessing the continued need for an indwelling urinary catheter. However, if your organization’s P&P conflict with bundle practices, follow your organization’s P&P and advocate for updating P&P.

Remember that the main prevention strategy for all infections is effective hand hygiene.

Agency for Healthcare Research and Quality (AHRQ): Patient Safety Indicators (PSIs)
AHRQ has developed more than 20 Patient Safety Indicators which identify potentially preventable lapses in patient safety, such as death among surgical inpatients with serious, treatable complications, and other specific complications. To view complete information about the AHRQ PSIs, visit http://qualityindicators.ahrq.gov/Modules/PSI_TechSpec.aspx

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CMS claim forms data are used to generate reports of healthcare organization’s performance on selected PSIs.

Many of your organization’s P&Ps and protocols reflect measures to prevent these untoward events. The “time out” practice before invasive procedures is one example.

Examples of nursing actions to protect patient safety include:

- Implement hourly rounds as a means of preventing patient falls in addition to other fall prevention measures
- Complete and document skin assessment
- Be vigilant for indications of deterioration of patient status and know how to respond, for example, how to contact your rapid response team.

**Conclusion**

By studying Core Measures: The Nurse’s Role you have learned about Core Measures and the role of the nurse in improving the healthcare organization’s performance on Core Measures.

You have learned:

- The definition of Core Measures
- How Core Measures are used
- The relationship between Core Measures and other quality and safety initiatives
- Examples of specific Core Measures and measurement criteria
- The role of the nurse in improving a healthcare organization’s performance on Core Measures

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