DECREASING THE LENGTH OF STAY FOR PATIENTS WHO HAVE HAD VASCULAR LOWER EXTREMITY AMPUTATIONS THROUGH A MULTIDISCIPLINARY APPROACH

Combined Section Meeting 2015
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WHO WE ARE
Carolinas HealthCare System has a unique story to share. Operating as a fully integrated system and connecting and transforming care delivery throughout the Carolinas, our overarching goal is to provide seamless access to coordinated, high quality healthcare – and provide that care closer to where our patients live.

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**WHO WE ARE**

With 42 hospitals and 900+ care locations, the depth and breadth of services results in a full continuum of integrated care including:

- Prevention and general wellness
- Primary care at more than 180 locations
- Specialty care via several nationally recognized service lines
- Critical care with one of the largest virtual (e-ICU) programs in the nation
- Continuing care including home health, skilled nursing, hospice, palliative care centers, inpatient/outpatient rehab, and long-term acute care hospital

**AT-A-GLANCE**

- **42 hospitals** and 900+ care locations in North Carolina, South Carolina and Georgia
- More than **7,800** licensed beds
- More than **11 million** patient encounters in 2013
- **3,000+** system-employed physicians, **14,000+** nurses and more than **60,000** employees
- **$1.5 billion** in community benefit in 2013
- More than **$8 billion** in annual revenue
- The region's only Level I trauma center
- One of five academic medical centers in North Carolina
- One of the largest HIT and EMR systems in the country

**WHERE WE ARE**

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SHVI Presence at CHS Hospitals

CMC - Main
CMC - Northeast
CMC - Pineville
CMC - Union

SHVI Presence at CHS Hospitals

CMC - Mercy
CMC - University
Cleveland Regional Medical Center

Adult Vascular Surgery

- 7 Surgeons
  - Main (6)
  - Northeast (.5)
  - Pineville (1.5)
  - Union (.5)
- 3 Interventional Cardiologists
- Advanced Care Practitioners
  - Main (4)
  - Pineville (2)
  - Office Responsibilities
- Union (2)
  - Office Responsibilities
- Trainees
  4 Fellows (2 per year)
COURSE DESCRIPTION

• Review the benefits of establishing a clinical pathway in the acute care setting.
• Identify key players who are essential in providing a holistic approach to patient care.
• Gain support from key stakeholders within that specific medical division.
• Review methods on how to develop and implement a new, innovative process.
• Potential barriers surrounding implementation.
• Carolinas Medical Center Vascular Lower Extremity Amputation Pathway.

COURSE OBJECTIVES

Participants will be able to identify:
• The benefits and understand the process for creating a clinical pathway.
• Key stakeholders.
• Strategies and potential barriers for successful implementation of a clinical pathway.
• Creation clinical pathway (Group break-out).
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COURSE OUTLINE

• Definition of a clinical pathway and potential benefits
• Current State
• Goals
• Phases of Care
• Future State
• Group creation of clinical pathway
• Questions and Remarks

DEFINITION OF CLINICAL PATHWAY AND ITS BENEFITS

• Clinical pathways are standardized, evidence-based interdisciplinary care management plans, which identify an appropriate sequence of clinical interventions, timeframes, milestones and expected outcomes for a comparable patient group; i.e. by diagnosis or surgical procedure.

• The aim of a clinical pathway is to enhance the quality of care across the continuum by improving risk-adjusted patient outcomes, promoting patient safety, increasing patient satisfaction, and optimizing the use of resources.

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### CURRENT STATE

- The arithmetic average length of stay at Carolinas Medical Center for non-traumatic below knee and above knee amputation from September 2012 – August 2013 were 17.78 and 7.46 respectively.

- There was a decrease in coordination for the amputee population.
  - Discharge plans for rehabilitation

### GOALS

- To supersede the recent data released in 2013, the goal was to decrease the average length of stay from day of surgery to discharge to 3 days

- Collaborate with leadership team for buy-in

- Create a multidisciplinary team task force

- Improve quality of care

- Minimize cost to the patient and institution

### PHASES OF CARE

**Phase One: Preoperative/Day of Surgery**

**PEOPLE**

- PACU, ICU, and unit nursing education
- Preoperative pain management education
- Collaborate case management and social work
- Endocrinology consult

**PROCESS**

- Pain management
- Antibiotic skin prep
- Smoking Cessation Questionnaire
- A1C assessment

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PHASES OF CARE
Phase One: Pre operative/Day of Surgery
TECHNOLOGY
• Cerner
• IDX
• Premier

PHASES OF CARE
Phase Two – Post Operative Day 1
PEOPLE
• Patients
• PT/OT/Rehab Consultations
• Amputee Empowerment Partners
• Nursing staff
PROCESS
• Foley removal
• Out of bed as tolerated
• Contracture prevention
• Patient education-Continued through all phases

PHASES OF CARE
Phase Two – Post Operative Day 2
PEOPLE
• Patients
• PT/OT/Rehab
• Amputee Empowerment Partners
• Nursing staff
PROCESS
• Combination IV/PO pain management
• Assess and monitor I/Os
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PHASES OF CARE
Phase Three – Post Operative Day 3

PEOPLE
• Patients
• PT/OT/Rehab liaison
• Vascular surgeon
• Nursing staff

PROCESS
• First dressing change of residual limb
• Continue assessment of pain with oral medication
• Continue mobilization
• Discharge to acute or subacute rehab preferred. Home with home health/outpatient therapy

VASCULAR AMPUTATION PATHWAY PATIENTS
• 71 y/o male admitted 1/22, s/p R BKA on 1/23/14
  – PT/OT/CCM/Rehab/Social Support Services consulted POD 1 (1/24).
  – Patient listed for rehab on day of consultation for POD 3.
  – Awaiting insurance approval for rehab POD 3.
  – Patient discharged to acute rehab POD 4 (1/27).
  – Total LOS 6 days.
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VASCULAR AMPUTATION PATHWAY PATIENTS

- 78 y/o female admitted 1/28, s/p L BKA on 1/29/14
  - PT/OT/CCM/Rehab/social support services consulted POD1 (1/30).
  - Patient discharged to sub-acute rehab, (patient’s preference), on 2/3/14.
  - Patient on IV pain meds 1/31/14.
  - Total LOS 6 days.
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VASCULAR AMPUTATION PATHWAY PATIENTS

- 82 y/o female admitted 2/3, s/p R BKA revision (2/3/14)
- PT/OT/CCM/Rehab POD1 (2/4).
- Patient returned to sub acute rehab, (patient preference) on 2/6/14.
- Total LOS 3 days.

KEY ACCOMPLISHMENTS

- After the implementation of the vascular lower extremity amputation clinical pathway pilot:
  - Below knee amputation length of stay was reduced to 9 days.
  - Above knee amputation length of stay was reduced to 5.66 days.
  - Financial impact by providing a savings or $2,247.00 per day in room cost alone.
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KEY ACCOMPLISHMENTS

- Below knee amputation average cost reduction $19,128.66 in room cost (8.78 days).
- Above knee amputation average cost reduction $4,044.60 in room cost (1.8 days).
- Provided the appropriate continuity of services to increase patient satisfaction and outcomes.

PILOT DATA

FUTURE STATE

As of September 2014, there were a total of 39 above knee and below knee amputation cases.
- The LOS O/E ratio for 2013 was 1.27 and currently in 2014 the ratio is 1.16.
- Incidentally, the Readmissions O/E for 2013 was 2.16, as of September 2014 the ratio is 1.27.
- The data displays a rapid rate towards the goal in a short duration of time.

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**FUTURE STATE DATA**

**Length of Stay**
- Length of Stay Observed/Expected January 2014 to September 2014
- Length of Stay Observed/Expected 2015
- Arithmetic Length of Stay Observed January 2015 to September 2015
- Arithmetic Length of Stay Observed 2016

**FUTURE STATE DATA**

**Readmissions**
- Readmissions Observed/Expected January 2015 to September 2015
- Readmissions Observed/Expected 2016
- Readmissions % Observed January 2015 to September 2015
- Readmissions % Observed 2016

**LESSONS LEARNED / FUTURE RECOMMENDATIONS**

- Collaboration with multidisciplinary team to clearly define a holistic approach to wellness.
- Utilized PAGER format in order to adhere to regularly scheduled meetings to maximize efficiency.
- Benchmark data to assist the team in providing effective and efficient care to the vascular amputee population.
- Bridge the gap between internal and external stakeholders.

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LESSONS LEARNED / FUTURE RECOMMENDATIONS
Components For A Successful Initiative

- Develop and manage a task force for a unified purpose to produce positive results
- Timeliness of feedback with the self-audit results
- Tangible support by administration
- Setting up co-leadership

SPECIAL THANKS TO OUR TEAM MEMBERS

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- Cassandra McLeod PT, DPT-Clinical coordinator
- Jamie Hartz, PT, PT/OT Director
- Lynne Davis RN, NM 6 tower
- Diamond Station-Williams RN, CCM Manager
- Cheryl Fisher, Ultrasound Manager
- Janet Huffman, RN Rehab
- Chris Jenkins, Amputee Empowerment Partners
- Kevin Lobdell, MD Director of Quality

THANK YOU FOR YOUR ATTENTION!!

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