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MICHIGAN HOSPITAL
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PICC Tier 1 Interventions Webinar

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Agenda

- HMS Performance & 2- Tiered Approach (5 minutes)
- Review PICC Tier 1 Interventions (35 minutes)
  - Why?
  - How?
  - Best Practice Examples
- Question & Answer (20 minutes)

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HMS Performance: 2017 and Beyond

- BCBSM is interested in all of the CQIs continuing to move the needle on performance
  - How will this be accomplished?
    - Performance Index
      - Stretch goals
    - 2-Tiered Intervention Strategy

2-Tiered Approach

- Tier 1
  - Interventions aimed to improve performance in general target areas for all HMS hospitals
  - Hospitals will be given resources/strategies to assist with implementation
  - Focused webinar to assist with implementation, identify barriers, best practices, etc
- Tier 2
  - Hospitals will select between key target areas that are specific to each hospitals needs/priorities
  - Hospitals will be given resources/strategies to assist with implementation of selected target area
  - Focused webinar for each of the 3 target areas to assist with implementation, identify barriers, best practices, etc

Tiers for PICC Quality Improvement

Tier 1: Implement Global Strategies to Improve PICC Safety

Convene a Vascular Access Committee to review PICC use and outcomes	Use MAGIC or a related decision-tool (e.g., INS Standards) to determine PICC appropriatenes	Reduce short term PICC use (PICC ≤ 5 days)	Increase use of single lumen PICCs; decrease use of multi-lumen PICCs	Avoid PICC Placement in patients with eGFR < 45ml/min (CKD Stage IIIb)

Tier 2: Implement Focused Practices to Targeted Problems

(Pick One [or More] of these Three Conditions)

Catheter Occlusion	**PICC-Related Deep Vein Thrombosis or Thromboembolism**	**PICC-Related Bloodstream Infection (e.g, CLABSI)**

Why Tiers of Interventions?

- Always easier to tackle complex problems with small, multi-pronged steps
  - CLABSI = often relates to patient, providers and device characteristics
  - Device factors are important → lumens
  - Getting the right people on board to address lumens: key to solving not just CLABSI but will also help with other problems
- Tier 1 = process steps that are designed to improve multiple outcomes (occlusion, CLABSI and DVT)
- If you are successful in Tier 1 → Tier 2 becomes that much easier (right people, right approach in place)

Five Tier 1 Interventions

- Convene a vascular access committee/council
- Use MAGIC or a decision-tool when selecting devices
- Reduce short-term PICC use ≤ 5 days
- Increase use of single lumen PICCs; decrease use of multi-lumen devices
- Avoid PICC placement in those with CKD (*eGFR* <45ml/min)

Tier 1 Intervention #1: Vascular Access Committee/Council

- Include key individuals you will need to make change happen in your PICC practices
  - Leadership (CMO, COO, CFO, CQO or equivalent)
  - Intensive/Critical Care Physicians
  - Hospitalists
  - Hematology/oncology
  - Interventional Radiology
  - Vascular Access Team Leaders/Members (if applicable)
  - May include others as needed (e.g., ED staff, nephrology, etc.)
- Why?
  - Inform implementation strategies (e.g., process flow/checklist)
  - Gain buy in/approval when needed (finances for new devices)
  - Foresee problems (this won't work, but this might)
  - *Skin in the game:* Move from "your" project to "our" project

Some common questions

- Do we need to have every single one of these disciplines?
  - Depends! Areas/specialties most involved with ordering or placing PICCs, or ensuring safety, should be represented on the committee
  - If you don't have one or more of these services or you think they are not relevant to PICCs at your hospital, let the Coordinating Center know in the QI Activity survey
- Why do we need to change our current PICC committee?
  - No need to change if you've got the right people
  - Repurpose to ensure interventions are successful
  - May need to go beyond the usual members

Tier 1 Intervention #2: Use MAGIC (decision tool) for PICC Use

- Use MAGIC or related decision-tool to determine PICC appropriateness at the point of care/prior to insertion
  - Examples of work done so far:
    - Nurse checklist of device appropriateness (e.g. Beaumont Dearborn)
    - EMR-based tool for PICC appropriateness (UM)
    - Nurse driven review of PICC order/appropriateness
- Communicate use of the decision tool to front-line staff
  - Use nursing blitzes, morning reports or other forums to share the development and roll out of the tool
  - Implementing MAGIC can improve PICC use and outcomes
    - Beaumont decreased occlusion by 60%, VTE and CLABSI by 33% and short term PICC use by 60% from baseline!

Tier 1 Intervention #3: Reduce Short Term PICC Use (≤ 5d)

- Develop strategies to avoid short-term use
  - W.I.S.E tool to understand drivers for short-term PICC use
    - This is a troubleshooting tool – but offers several solutions
  - Assess competency for placing peripheral IV catheters
    - Big driver for short-term PICC use is difficult IV access, but difficulty depends on the skill of the inserter
  - Trial infra-red technology to improve peripheral access
  - Invest in alternatives to PICCs for short-term venous access
    - (i.e. midlines, extended dwell/US-peripheral venous catheters)
- Why?
  - MAGIC, INS and CDC CLABSI[13] guidelines both recommend against the use of PICCs for a duration of 5 days or less[5]

Best Practice Examples

- Best Practice #1:
  - Provider-specific feedback
    - Q2 2015- 23.76 % PICC < or equal to 5 Days
    - Q3 2016- 14.63 % PICC < or equal to 5 Days

↓ 9%

- Best Practice #2:
  - Physician feedback indicated ordering of midlines was not user friendly/cumbersome
  - Separated Midline/PICC order in EMR
    - Q2 2015- 24.51 % PICC < or equal to 5 Days
    - Q3 2016- 16.67 % PICC < or equal to 5 Days

↓ ~8%

Best Practice Examples

- Best Practice #3:
  - Created decision tool based on MAGIC guidelines and incorporated into EMR
  - Hospital A
    - Q2 2015- 22.37 % PICC < or equal to 5 Days
    - Q3 2016- 6.6 % PICC < or equal to 5 Days

↓~16%

  - Hospital B
    - Q2 2015- 33.33 % PICC < or equal to 5 Days
    - Q3 2016- 18.63 % PICC < or equal to 5 Days

↓~15%

Tier 1 Intervention #4: Increase Use of Single Lumen PICCs

- Key factor to improving patient outcomes
  - Default PICC orders to single lumen
  - Require provider justification for multi-lumen PICC
  - Engage pharmacy and vascular access teams to develop criteria for appropriateness of devices >2 or more lumen
    - UM pilot: increased SLPs from 64% → 95% on hospitalist service
  - Develop criteria for when a multi-lumen PICC is necessary (MAGIC)

- Why?
  - Several studies have linked the number of PICC lumens with major complications like CLABSI[7,8,9,10]
  - Studies that have minimized lumens have reduced CLABSI
  - Existing guidelines for device selection and placement recommend using the minimal number of device lumens to meet clinical needs[11,12]

Best Practice Examples

- Best Practice #1:
  - Education/justification provided to PICC/Radiology/Nursing Staff regarding fewer lumens
  - Hospital A:
    - Q2 2015- 47.51 % Single Lumen Use
    - Q3 2016- 58.24 % Single Lumen Use

    ↑ ~11%
  - Hospital B:
    - Q2 2015- 33.33 % Single Lumen Use
    - Q3 2016- 45.24 % Single Lumen Use

    ↑ 12%
  - Hospital C:
    - Q2 2015- 28.93 % Single Lumen Use
    - Q3 2016- 48.19 % Single Lumen Use

    ↑ 19%

Best Practice Examples

- Best Practice #2:
  - Ordering physician must indicate the reason for a double/triple lumen
  - Triple lumen recommended for ICU population only
  - Added warning in order set regarding increased complications with increased lumens
    - Q2 2015- 17.59 % Single Lumen Use
    - Q3 2016- 34.74 % Single Lumen Use

↑ 17%

- Best Practice #3:
  - Provider specific feedback
    - Quarter 2 2015- 33.66% Single Lumen Use
    - Quarter 3 2016- 51.22% Single Lumen Use

↑ 17%

Tier 1 Intervention #5: Avoid PICC placement in CKD

- Avoid PICC Placement in patients with *eGFR*<45 ml/min (without nephrology approval)
  - Develop strategies within the medical record that flags patients with low *eGFR* so that providers know PICCs contraindicated
  - Nephrology consult/approval (algorithm) prior to PICC placement
  - Use of small bore central catheters, tunneled IJ PICCs, in CKD
- Why?
  - The National Kidney Foundation (NKF) recommends against use of PICCs in patients with CKD due to risk of loss of useable upper extremity veins and central venous stenosis[6]
  - Number 1 cause of AV graft/fistula failure: prior PICC

Best Practice Examples

- Best Practice #1:
  - Warning added to EMR regarding eGFR as a flag
  - Vascular Access team consults nephrology for approval
    - Q2 2015- 6.73 % PICC use in eGFR <45
    - Q3 2016- 5.77 % PICC use in eGFR <45

↓ ~1%

- Best Practice #2:
  - Unable to order PICC or midline if eGFR is less than or equal to 45 (initiated by IR)
  - Only exception is ICU patients (not on hemodialysis)
    - Q2 2015- 22.06 % PICC use in eGFR <45
    - Q3 2016- 11.54 % PICC use in eGFR <45

↓ 10.5%

Best Practice Examples

- Best Practice #3:
  - Increased use of midlines
  - IV team receives consults for PICC placement instead of automatically inserting PICC
    - Q2 2015- 26.09 % PICC use in eGFR <45
    - Q3 2016- 17.53 % PICC use in eGFR <45

↓8.5%

- Best Practice #4:
  - Quarterly presentation of HMS data with Vascular Access, IR and Quality leads
  - Increased awareness and education
    - Q2 2015- 36.21 % PICC use in eGFR <45
    - Q3 2016- 29.89 % PICC use in eGFR <45

↓6.3%

Some common questions

- Our ICU physicians feel that when a patient is in the ICU the decision to place a PICC (or different central line) is their responsibility, not nephrology
  - We ask for a discussion to occur between the ICU physician and the nephrologist such that a decision is made jointly. If they place a different central line, no discussion is necessary.
- If our hospital has a policy that states "nephrology does not need to be consulted for PICC placement unless *eGFR* is less than or equal to 30 (and nephrology approves this), will that meet the requirements for nephrology approval?
  - Yes, this would count as nephrology approval for the cases where the eGFR is >30 and <45.

Some common questions

- To receive nephrology approval does the hospitalist have to contact the nephrologist? Can it be a nurse or a tech (if they provide documentation)?
  - The nurse/tech is not the appropriate person to be contacting the nephrologist – this is a treatment decision that requires the appropriate provider to have the discussion
  - However, the conversation could be accomplished through an automated form/protocol.
  - What we would like to see: evidence of coordination on the appropriateness of the PICC by the ordering physician and a nephrologist

Some common questions

- As a smaller institution, it may be difficult for us to obtain a nephrology consult prior to PICC insertion on a patient who has AKI, but not CKD. Do you have suggestions for this scenario? Are there better ways to address the use of PICCs in patients with CKD?
  - Suggest you come up with a list of criteria that might trigger discussion with nephrology
    - E.g., if creatinine > 2 and PICC requested, discuss with nephrology
  - Work with your nephrologists to come up with a checklist to manage PICCs in these situations
    - e.g., if eGFR <45 ml/min, proceed with other forms of IV access prior to PICC. If PICC remains necessary, then discuss with nephrology

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Questions?