Michigan Hospital Medicine Safety Consortium Collaborative Quality Initiative

2023 Performance Index Scorecard Cheat Sheet – Cohorts 2020 & 2021

Measures 5-10

Measure 5. Increase Use of 5 Days of Antibiotic Treatment in Uncomplicated CAP (Community Acquired Pneumonia) Cases (i.e., reduce excess durations)

$$\textbf{Measure 5} = \frac{Pneumonia\ cases\ classified\ as\ uncomplicated\ CAP\ that\ recieved\ 5\ days\ (+\ or-\ 1\ day)\ of\ antibiotics}{Pneumonia\ cases\ classified\ as\ uncomplicated\ CAP}$$

- Higher is better.
- A measure of x/y means that x Uncomplicated CAP cases had an appropriate duration of antibiotics (5 days +/- 1 days) out of the y Uncomplicated CAP cases included in the measure.
    - Example: 2/3 means that 2 Uncomplicated CAP cases received appropriate antibiotic treatment out of the 3 cases that were assessed in this measure. There will be 1 fall out case for this measure.
- NOTES:
    - 5 days of treatment is assessed starting with the first day of effective antibiotic treatment during the hospital encounter.
    - For the HMS definitions of Uncomplicated CAP, please see your Site's ABX Use Report.
    - There are two ways to receive either full or partial points for this measure:
        - Achieving a certain percentage of uncomplicated CAP cases receiving 5 days (+/- 1 day) of antibiotic treatment as specified on the Performance Index.
        - Achieving a certain percentage of relative increase during the current performance year. Rate of change will be based on the adjusted method and may not reflect raw rates from quarter to quarter.

$$\textbf{Relative Change} = \frac{\text{Change in performance via the adjusted model}}{\text{Beginning performance via the adjusted model}}$$

- **Full points:* ≥ 65% uncomplicated CAP cases receive 5 days (+/- 1 day) of antibiotics OR ≥ 65% relative increase in the number of uncomplicated CAP cases that receive 5 days of antibiotics during the current performance year.
  **Partial points:* 50-64% uncomplicated CAP cases receive 5 days (+/- 1 day) of antibiotics OR 45-64% relative increase in the number of uncomplicated CAP cases that receive 5 days of antibiotics during the current performance year.
  **No points:* < 50% uncomplicated CAP cases receive 5 days (+/- 1 day) of antibiotics AND < 45% relative increase during the current performance year

Measure 6: Reduce Use of Inappropriate Empiric Broad-Spectrum Antibiotics for Patients with Uncomplicated CAP (Community Acquired Pneumonia)

$$\textbf{Measure 5} = \frac{Pneumonia\ cases\ classified\ as\ uncomplicated\ CAP\ that\ recieved\ inappropriate\ empiric\ broad-spectrum\ antibiotcs}{Pneumonia\ cases\ classified\ as\ uncomplicated\ CAP\ eligible\ for\ 5\ days\ of\ antibiotic\ treatment}$$

- Lower is better.
- A measure of x/y means that x Uncomplicated CAP cases received an inappropriate empiric broad-spectrum antibiotic out of the y Uncomplicated CAP cases included in the measure.
    - Example: 2/3 means that 2 Uncomplicated CAP cases received an inappropriate empiric broad-spectrum antibiotic out of the 3 cases that were assessed in this measure. There will be 2 fall out cases for this measure.
- NOTES:
    - Empiric broad-spectrum antibiotics include antibiotics administered on day 2 of the hospital encounter.
    - For the HMS definitions of Uncomplicated CAP, please see your Site's ABX Use Report. For the purposes of this measure, this includes Uncomplicated CAP cases that would have been eligible for 5 days of antibiotic treatment but transferred to ICU or died at end of abstraction.
    - To determine appropriateness of broad-spectrum therapy, HMS is assessing the following:
        - Respiratory/blood cultures from the prior year, including MRSA in culture or nasal swab or Pseudomonas (or other gram negative) in culture
        - If cultures do not provide information as noted above, HMS is assessing if the patient had an inpatient hospitalization in the prior 90 days + IV antibiotics in the prior 90 days + severe CAP on days 1/2 of the hospital encounter
            - See your site's ABX Use Report for Severe CAP criteria
    - Anti-MRSA antibiotics: Vancomycin, Linezolid, Ceftaroline
    - Anti-PSA/Gram-Negative antibiotics: Ciprofloxacin, Ceftazidime, Piperacillin-Tazobactam, Cefepime, Meropenem, Meropenem-Vaborbactam, Imipenem, Doripenem, Aztreonam, Ceftolozane-Tazobactam, Ceftazidime-avibactam, and Cefiderocol
- **Full points:* ≤ 15% of uncomplicated CAP cases receive an inappropriate empiric broad-spectrum antibiotic during the current performance year.
  **Partial points:* 16-20% of uncomplicated CAP cases receive an inappropriate empiric broad-spectrum antibiotic during the current performance year.
  **No points:* > 20% of uncomplicated CAP cases receive an inappropriate empiric broad-spectrum antibiotic during the current performance year.

Measure 7. Reduce Use of Antibiotics in Patients with ASB (Asymptomatic Bacteriuria)

$$\textbf{\textit{Measure 7}} = \frac{Number\ of\ postive\ urine\ culture\ cases\ that\ are\ treated\ with\ an\ antibiotic\ that\ are\ classified\ as\ ASB\ (excluding\ ASB\ cases\ treated\ on\ day\ 1\ of\ the\ encounter)}{Number\ of\ positive\ urine\ culture\ cases}$$

- Lower is better.
- A measure of x/y means that x positive urine culture cases that were treated were classified as ASB cases out of the y positive urine culture cases included in the measure.
    - Example: 4/6 means 4 positive urine culture cases were classified as ASB cases AND were inappropriately treated on day 2 or later of the encounter out of the 6 positive urine culture cases included in the measure. There will be 4 fallout cases for this measure.
- NOTES:
    - ASB Treatment is assessed based on antibiotic treatment given Day 2 or later during the hospital encounter.
    - For the HMS definition of ASB, please see your Site's ABX Use Report.
    - Cases meeting criteria for severe sepsis on the day before, day or, or day after positive urine culture collection are not classified as ASB and are not included in the numerator or denominator of the ASB performance measure.
        - Criteria for severe sepsis include suspected or documented infection and two or more of the following:
            - SBP < 90 mmHg or mean arterial pressure < 65 mmHg, SBP decrease of more than 40 mmHg
            - Lactate > 2 mmol/L
            - INR > 1.5
            - Platelet count < 100,000 µL−1
            - Bilirubin > 2mg/dL
            - Creatinine > 2 mg/dL
            - Acute respiratory failure by need for new invasive or noninvasive ventilation
    - Cases where patients with baseline dementia (captured in the co-morbids section) have functional decline or falls AND have fever, hypotension, leukocytosis, and/or >= 2 SIRS criteria the day before, day of, or day after positive urine culture collection are not included in the numerator or denominator of the ASB performance measure. Clinical judgement is advised for these patients.
    - The document "Guidelines for Treatment of Urinary Tract Infections" available on Zendesk and on the HMS website contains information regarding ASB and signs/symptoms of UTI for which a urine culture is appropriate.
    - There are two ways to receive either full or partial points for this measure:
        - Achieving a certain percentage of positive urine culture cases treated with an antibiotic are ASB cases **OR**
        - Achieving a certain percentage of relative decrease during the current performance year. Rate of change will be based on the adjusted method and may not reflect raw rates from quarter to quarter.

$$\textbf{\textit{Relative Change}} = \frac{\text{Change in performance via the adjusted model}}{\text{Beginning performance via the adjusted model}}$$

- **Full points:* ≤ 10% of positive urine culture cases treated with an antibiotic are ASB cases OR ≥ 45% relative decrease in the number of positive urine culture cases treated with an antibiotic that are ASB cases during the current performance year.
  **Partial points:* 11-19% of positive urine culture cases treated with an antibiotic are ASB cases OR 30-44% relative decrease in the number of positive urine culture cases treated with an antibiotic that are ASB cases during the current performance year.
  **No points:* > 19% of positive urine culture cases treated with an antibiotic are ASB cases AND < 30% relative decrease in the number of positive urine culture cases treated with an antibiotic that are ASB cases during the current performance year.

Measure 8. Reduce PICCs (Peripherally-Inserted Central Catheters) in for ≤5 days (excluding deaths)

$$\textbf{Measure 8} = \frac{PICC\ Cases\ in\ for \leq 5\ days\ (excluding\ deaths\ within\ 5\ days\ of\ PICC\ placement)}{Total\ PICC\ Cases(\ excluding\ deaths\ occuring\ within\ 5\ days\ of\ PICC\ placement)}$$

- Lower is better.
- A measure of x/y means that x PICCs had a dwell of less than or equal to 5 days out of the y PICCs assessed in this measure.
  - Example: 2/10 means that 2 PICCs had a dwell time of less than 5 days out of the 10 PICCs assessed for this measure. There will be 2 fallout cases for this measure.
- NOTES:
  - The date of PICC placement is defined as Day 0 of the PICC's dwell time with the day after PICC placement being Day 1.
- **Full points:* ≤ 10% of cases with PICC in for ≤ 5 Days
  **Partial points:* 11-15% of cases with PICC in for ≤ 5 Days
  **No points:* > 15% of cases with PICC in for ≤ 5 Days

Measure 9. Increase Use of Single Lumen PICCs in Non-ICU (Intensive Care Unit) Cases

$$\textbf{Measure 9} = \frac{Single\ Lumen\ PICCs\ in\ Non{-}ICU\ Cases\ excluding\ Index\ PICC\ exchanges}{Total\ Non{-}ICU\ Cases\ excluding\ Index\ PICC\ exchanges}$$

- Higher is better.
- A measure of x/y means that x Non-ICU PICCs inserted were single lumen out of the y PICCs assessed in this measure.
  - Example: 18/20 means that 18 Non-ICU PICCS inserted were single lumen out of the 20 PICC cases assessed in this measure. There will be 2 fallout cases for this measure.
- NOTES:
  - Single lumen use is assessed based on the number of lumens of the index PICC.
  - Non-ICU Double Lumen PICCs placed with an indication of "Parenteral Nutrition" AND another indication is removed from the numerator and denominator of this measure.
- **Full points:* ≥ 77% of non-ICU cases with PICC have a single lumen

**Partial points:* 70-76% of non-ICU cases with PICC have a single lumen
**No points:* < 70% of non-ICU cases with PICC have a single lumen

Measure 10. PICCs in Patients with eGFR (estimated glomerular filtration rate) < 45 (without Nephrology approval)

$$\textbf{\textit{Measure 10}} = \frac{PICC\ Cases\ with\ eGFR{<}45\ without\ Nephrology\ Approval\ (eGFR\ reported\ or\ calculated\ based\ on\ Creatinine\ level)}{PICC\ Cases\ excluding\ cases\ without\ an\ eGFR\ or\ Creatinine\ reported}$$

- Lower is better.
- A measure of x/y means that x PICCs were inserted where patients had an eGFR < 45 without having prior Nephrology approval out of the y PICCs assessed in this measure.
    - Example: 10/30 means that 10 PICCS that were inserted in patients who had an eGFR<45 did not have prior Nephrology approval out of 30 PICC assessed for this measure. There will be 10 fallout cases for this measure.
- NOTES:
    - eGFR value is assessed on lab values within the 48 hours prior to PICC placement or, if unavailable in that timeframe, the 48 hours after PICC placement.
    - PICC cases without eGFR or Creatinine reported and line exchanges are not included in this measure.
    - Nephrology approval is assessed based on nephrology consults/approval prior to PICC placement in which the nephrologist approves the PICC. Hospital-specific policies that cover Nephrology approval for certain eGFR values and are approved by the Coordinating Center are also counted as Nephrology approval.
- **Full points:* ≤ 7% of cases with PICC have eGFR < 45 without Nephrology approval
  **Partial points:* 8-12% of cases with PICC have eGFR < 45 without Nephrology approval
  **No points:* >12% of cases with PICC have eGFR < 45 without Nephrology approval

Measure C (Collaborative). PICC and Midline Documentation- Catheter-to-Vein Ratio and Lumens

$$\textit{Measure C} = \frac{\textit{Number of PICC and Midline cases with documentation of catheter} - \textit{to} - \textit{vein ratio}}{\textit{Total number of PICC and Midline cases}} \quad \textit{AND} \quad \frac{\textit{Number of PICC and Midline cases with documentation of number of lumens}}{\textit{Total number of PICC and Midline cases}}$$

- Higher is better.
- ***Catheter-to-vein documentation***: A measure of x/y means x PICC and Midline cases had documentation of catheter-to-vein ratio out of the y total PICC and Midline cases included in the measure.
    - Example: 20/30 means that 20 PICC and Midline cases had documentation of catheter-to-vein ratio out of the 30 total PICC and Midline cases that were included in this measure. There will be 10 fall out cases for this measure.
- ***Lumen documentation***: A measure x/y means x PICC and Midline cases had documentation of the number of lumens out of the y total PICC and Midline cases included in the measure.
    - Example: 20/30 means that 20 PICC and Midline cases had documentation of lumens out of the 30 total PICC and Midline cases that were included in this measure. There will be 10 fall out cases for this measure.
- NOTES:
    - For 2023, this measure is based on a collaborative-wide average for the final quarter of data entered in the data registry during the 2023 calendar year. This is different than the other performance measures in the index, which are based on the rates at each individual hospital.
- **Full points:* > 90% **collaborative-wide average** of PICC/Midlines with documentation of Catheter-to-Vein Ratio AND ≥ 98% **collaborative-wide average** of PICC/Midlines with documentation of lumens.

  *Partial points: > 90% **collaborative-wide average** of PICC/Midlines with documentation of Catheter-to-Vein Ratio OR ≥ 98% **collaborative-wide average** of PICC/Midlines with documentation of lumens.

  No points:* < 90% **collaborative-wide average of PICC/Midlines with documentation of Catheter-to-Vein Ratio AND < 98% **collaborative-wide average** of PICC/Midlines with documentation of lumens.

*Cut-off values for full, partial, and no points are included as reference only in this document. The 2023 Performance Index should be consulted and used as the source of truth for determining cut-off values for each measure.