### HOSPITAL OUTPATIENT DEPARTMENT QUALITY MEASURES

#### Pain Management

<table>
<thead>
<tr>
<th>Set Measure ID #</th>
<th>Measure Short Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP-21</td>
<td>Median Time to Pain Management for Long Bone Fracture</td>
</tr>
</tbody>
</table>

#### OP PAIN MANAGEMENT GENERAL DATA ELEMENT LIST

<table>
<thead>
<tr>
<th>General Data Element Name</th>
<th>Collected For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival Time</td>
<td>All Records</td>
</tr>
<tr>
<td>Birthdate</td>
<td>All Records</td>
</tr>
<tr>
<td>CMS Certification Number¹,²</td>
<td>All Records</td>
</tr>
<tr>
<td>First Name</td>
<td>All Records</td>
</tr>
<tr>
<td>Hispanic Ethnicity</td>
<td>All Records</td>
</tr>
<tr>
<td>Last Name</td>
<td>All Records</td>
</tr>
<tr>
<td>National Provider Identifier¹,²</td>
<td>Optional for All Records</td>
</tr>
<tr>
<td>Outpatient Encounter Date</td>
<td>All Records</td>
</tr>
<tr>
<td>Patient HIC#</td>
<td>Collected by CMS for patients with a Payment Source of Medicare who have a standard HIC number</td>
</tr>
<tr>
<td>Patient Identifier</td>
<td>All Records</td>
</tr>
<tr>
<td>Payment Source</td>
<td>All Records</td>
</tr>
<tr>
<td>Physician 1</td>
<td>Optional for All Records</td>
</tr>
<tr>
<td>Physician 2</td>
<td>Optional for All Records</td>
</tr>
<tr>
<td>Postal Code</td>
<td>All Records</td>
</tr>
<tr>
<td>Race</td>
<td>All Records</td>
</tr>
<tr>
<td>Sex</td>
<td>All Records</td>
</tr>
</tbody>
</table>

¹Transmission Data Element
²Defined in the Transmission Data Element List within the Hospital Outpatient Measure Data Transmission section of this manual

#### OP PAIN MANAGEMENT SPECIFIC DATA ELEMENT LIST

<table>
<thead>
<tr>
<th>OP Pain Management Data Element Name</th>
<th>Collected For:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival Time</td>
<td>OP-21</td>
</tr>
<tr>
<td>Discharge Code</td>
<td>OP-21</td>
</tr>
<tr>
<td>E/M Code</td>
<td>OP-21</td>
</tr>
<tr>
<td>ICD-9-CM Principal Diagnosis Code</td>
<td>OP-21</td>
</tr>
<tr>
<td>Outpatient Encounter Date</td>
<td>OP-21</td>
</tr>
<tr>
<td>Pain Medication</td>
<td>OP-21</td>
</tr>
<tr>
<td>Pain Medication Date</td>
<td>OP-21</td>
</tr>
<tr>
<td>Pain Medication Time</td>
<td>OP-21</td>
</tr>
</tbody>
</table>
OP-21 Hospital Outpatient Pain Management Population

Pain Management
The population of the OP-21 Pain Management measure is identified using 4 data elements:

- **E/M Code**
- **Outpatient Encounter Date**
- **Birthdate**
- **ICD-9-CM Principal Diagnosis Code**

Patients seen in a Hospital Emergency Department (E/M Code on Appendix A OP Table 1.0) are included in the OP-21 Pain Management Hospital Outpatient Population and are eligible to be sampled if they have:

- A Patient Age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 2 years, and
- An ICD-9-CM Principal Diagnosis Code for Long Bone Fracture as defined in Appendix A, OP Table 9.0.
Pain Management Hospital Outpatient Population Algorithm
OP-21

Start OP-21 Population logic sub-routine

Run all cases that pass the General and Measure Set edits defined in the Data Processing Flow to determine which cases are in the population of the OP-21 measure.

Variable Key:
- Patient Age on Outpatient Encounter Date
- OP Population Reject Flag

E/M Code

On OP Table 1.0 (Appendix A)

Patient Age on Outpatient Encounter Date (in years) = Outpatient Encounter Date minus Birthdate

Patient Age on Outpatient Encounter Date

<2 years

Not on OP Table 1.0 (Appendix A)

>= 2 years

ICD-9-CM Principal Diagnosis Code

On OP Table 9.0 (Appendix A)

Patient is in the OP-21 Outpatient Population

Patient not in the Pain Management Outpatient Population

Patient is eligible to be sampled for the OP-21 measure

Set OP Population Reject Case Flag = “No”

Return to Data Processing Flow (Data Transmission section)

Set OP Population Reject Case Flag = “Yes”

Note: To calculate age must use the month and day portion of the outpatient encounter date and birthdate to yield the most accurate age.

Note: For information concerning sample size requirements for the OP-21 measure, refer to the Population and Sampling Specifications section in this manual.
Algorithm Narrative for OP-21: Pain Management Hospital Outpatient Population

1. Start Pain Management Initial Patient Population logic sub-routine. Process all cases that have successfully reached the point in the Transmission Data Processing Flow: Clinical which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Transmission Data Processing Flow.

2. Check E/M Code.
   a. If E/M Code is not on Appendix A, OP Table 1.0, Patient is Not in the Outpatient Pain Management Population. Patient is not eligible to be sampled for OP-21 measure. Set the OP Population Reject Case Flag to YES. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
   b. If E/M Code is on Appendix A, OP Table 1.0, continue processing and proceed to Measurement Value.

3. Calculate Measurement Value. Measurement Value, in years, is equal to the Outpatient Encounter Date minus Birthdate.

   a. If the Measurement Value is less than two years, Patient is Not in the Outpatient Pain Management Population. Patient is not eligible to be sampled for OP-21 measure. Set the OP Population Reject Case Flag to YES. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
   b. If the Measurement Value is greater than or equal to two years, continue processing and the case will proceed to ICD-9-CM Principal Diagnosis Code.

5. Check ICD-9-CM Principal Diagnosis Code.
   a. If the ICD-9-CM Principal Diagnosis Code is on Table 9.0, Patient is in the Outpatient Pain Management Population. Patient is eligible to be sampled for OP-21 measure. Set the OP Population Reject Case Flag to NO. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
   b. If the ICD-9-CM Principal Diagnosis Code is not on Table 9.0, Patient is Not in the Outpatient Pain Management Population. Patient is not eligible to be sampled for OP-21 measure. Set the OP Population Reject Case Flag to YES. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.
Measure Information Form

Measure Set: Hospital Outpatient Pain Management

Measure ID #: OP-21

Outpatient Setting: Emergency Department

Performance Measure Name: Median Time to Pain Management for Long Bone Fracture.

Description: Median time from emergency department arrival to time of initial oral or parenteral pain medication administration for emergency department patients with a principal diagnosis of long bone fracture (LBF).

Rationale: Pain management in patients with long bone fractures is undertreated in emergency departments (Ritsema, Kelen, Pronovost, & Pham, 2007). Emergency department pain management has room for improvement (Ritsema, Kelen, Pronovost, & Pham, 2007). Patients with bone fractures continue to lack administration of pain medication as part of treatment regimens (Brown, 2003). When performance measures are implemented for pain management of these patients administration and treatment rates for pain improve (Titler, 2009). Disparities continue to exist in the administration of pain medication for minorities (Epps, 2008 and Todd, 1993) and children as well (Brown, 2003 and Friedland, 1994).

Type of Measure: Process

Improvement Noted As: A decrease in the median value

Continuous Variable Statement: Time (in minutes) from emergency department arrival to time of initial oral or parenteral pain medication administration for emergency department patients with a diagnosis of a (long bone) fracture.

Included Populations:
- Patients with a patient age on Outpatient Encounter Date (Outpatient Encounter Date – Birthdate) >= 2 years, and
- An ICD-9-CM Principal Diagnosis Code for a (long bone) fracture as defined in Appendix A, OP Table 9.0, and
- Patients with Pain Medication, and
- An E/M Code for emergency department encounter as defined in Appendix A, OP Table 1.0

Excluded Populations:
- Patients less than 2 years of age
- Patients who expired
- Patients who left the emergency department against medical advice or discontinued care
Data Elements:
- Birthdate
- Discharge Code
- E/M Code
- Arrival Time
- ICD-9-CM Principal Diagnosis Code
- Outpatient Encounter Date
- Pain Medication
- Pain Medication Date
- Pain Medication Time

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical record documents. Some hospitals may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunities for improvement at the point of care/service. However, complete documentation includes the principal or other ICD-9-CM diagnosis and procedure codes, which require retrospective data entry.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: None

Sampling: Yes, for additional information see the Population and Sampling Specifications section.

Data Reported As: Aggregate measure of central tendency

Suggested References:
**OP-21: Median Time to Pain Management for Long Bone Fracture**

**Continuous Variable Statement:** Time (in minutes) from emergency department arrival to time of initial oral or parenteral pain medication administration for emergency department patients with a diagnosis of a (long bone) fracture.

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**Flowchart Description:**
- **START**
  - Run cases that are included in the Pain Management Hospital Outpatient Population Algorithm and pass the edits defined in the Data Processing Flow through this measure.
  - **Discharge Code**
    - Missing = N
    - 1, 2, 3, 4a, 4b, 4c, 4d, or 5
  - **Pain Medication**
    - Missing = N
    - Y
  - **Arrival Time**
    - UTD
  - **Non-UTD Value**
    - Missing
  - **Pain Medication Date**
    - Missing
  - **Pain Medication Time**
    - Missing
  - **Measurement Value** = Pain Medication Date and Pain Medication Time minus Outpatient Encounter Date and Arrival Time (in minutes)
  - Case Will Be Rejected
  - Measurement Value
    - < 0 minutes
    - ≥ 0 minutes
    - In Measure Population
  - STOP
Algorithm Narrative for OP-21:
Median Time to Pain Management for Long Bone Fracture

Continuous Variable Statement: Time (in minutes) from emergency department arrival to time of initial oral or parenteral pain medication administration for emergency department patients with a diagnosis of a (long bone) fracture.

1. Start processing. Run cases that are included in the Pain Management Hospital Outpatient Population and pass the edits defined in the Data Processing Flow through this measure.

2. Check Discharge Code.
   a. If Discharge Code is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.
   b. If Discharge Code equals 6, 7, or 8, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.
   c. If Discharge Code equals 1, 2, 3, 4a, 4b, 4c, 4d, or 5, continue processing and proceed to Pain Medication.

3. Check Pain Medication.
   a. If Pain Medication is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.
   b. If Pain Medication equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.
   c. If Pain Medication equals Yes, continue processing and proceed to Arrival Time.

4. Check Arrival Time.
   a. If the Arrival Time equals Unable To Determine, the case will proceed to a Measure Category Assignment of Y and will be in the Measure Population. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.
   b. If Arrival Time equals a Non-Unable To Determine Value, continue processing and proceed to Pain Medication Date.

5. Check Pain Medication Date.
   a. If Pain Medication Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.
b. If *Pain Medication Date* equals Unable To Determine, the case will proceed to a Measure Category Assignment of Y and will be in the Measure Population. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.

c. If *Pain Medication Date* equals a Non Unable To Determine Value, continue processing and proceed to *Pain Medication Time*.

6. Check *Pain Medication Time*.

   a. If *Pain Medication Time* is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.

   b. If *Pain Medication Time* equals Unable To Determine, the case will proceed to a Measure Category Assignment of Y and will be in the Measure Population. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.

   c. If *Pain Medication Time* equals a Non Unable To Determine Value, continue processing and proceed to Measurement Value.

7. Calculate Measurement Value. Measurement Value, in minutes, is equal to the *Pain Medication Date* and *Pain Medication Time* minus *Outpatient Encounter Date* and *Arrival Time*.

8. Check Measurement Value.

   a. If Measurement Value is less than zero minutes, the case will proceed to a Measurement Category Assignment of X and will be rejected. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.

   b. If Measurement Value is greater than or equal to zero minutes, the case will proceed to a Measurement Category Assignment of D and will be in the Measure Population. Return to Transmission Data Processing Flow: Clinical in the Data Transmission Section.