

Acknowledgement

The *Specifications Manual for Hospital Outpatient Department Quality Measures* was developed by the Centers for Medicare & Medicaid Services (CMS) to provide a uniform set of quality measures to be implemented in hospital outpatient settings. The primary purpose of these measures is to promote high quality care for patients receiving services in hospital outpatient settings.

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IMPORTANT SUBMISSION ALERT!!

At this time, for submission of the Hospital Outpatient Measures to CMS under the Hospital Outpatient Quality Data Reporting Program, files must meet the specifications in this CMS manual only. Otherwise, the files will be rejected as not meeting CMS quality data submission requirements for receiving the full payment update.

Providers who are planning to also submit data for the Hospital Outpatient Measures to The Joint Commission must refer to the transmission section separately issued by The Joint Commission. This is important because at this time, CMS can only accept files which meet the CMS transmission manual specifications and such files cannot contain the additional Joint Commission transmission data elements (e.g., vendor tracking ID, measure category assignment, measurement value).

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Introduction

CMS Quality Initiatives

Background

In November 2001, Health & Human Services' (HHS') Secretary Tommy G. Thompson announced The Quality Initiative, his commitment to assure quality healthcare for all Americans through published consumer information coupled with healthcare quality improvement support through Medicare's Quality Improvement Organizations (QIOs). The Quality Initiative was launched nationally in 2002 as the Nursing Home Quality Initiative (NHQI) and expanded in 2003 with the Home Health Quality Initiative (HHQI) and the Hospital Quality Initiative (HQI). These initiatives are part of a comprehensive look at quality of care that includes hospitals, nursing homes, home health agencies, and physician offices. These efforts have continued to expand under Secretary Michael Leavitt through support and expansion of activities to support healthcare transparency and value-driven healthcare.

Most recently, the Medicare Improvements and Extension Act under Division B of Title I of the Tax Relief and Health Care Act (MIEA-TRHCA) of 2006 (Pub. L. 109-432), enacted on December 20, 2006, made changes in the Outpatient Prospective Payment System (OPPS). The Centers for Medicare & Medicaid Services (CMS) is now statutorily required to establish a program under which hospitals will report data on the quality of hospital outpatient care using standardized measures to receive the full annual update to the OPPS payment rate, effective for payments beginning in calendar year (CY) 2009. The program established under these amendments and supported by this manual is the Hospital Outpatient Quality Data Reporting Program (HOP QDRP). The measures described in this manual will expand as additional priority areas for quality improvement in hospital outpatient settings are identified and will be designed to evaluate the diversity of services and clinical topics provided to adult patients in hospital outpatient settings.

Objective

The HOP QDRP uses a variety of tools to stimulate and support a significant improvement in the quality of hospital outpatient care. This initiative aims to refine and standardize hospital outpatient data collection, data transmission, and performance measures in order to construct one robust, prioritized and standard quality outpatient measure set for hospitals. The goal is for all private and public purchasers, oversight and accrediting entities, and payers and providers of hospital outpatient care to use these same measures in their national public reporting activities. Quality improvement support, collaborations, standardization and assuring compliance with Medicare Conditions of Participation (CoPs) are important additional tools in achieving this objective.

Components of the Hospital Quality Initiative (HQI)

HQI creates an expanded, robust, and uniform measure sets for national hospital public reporting through the implementation of a structured public process to select quality measures that builds upon the existing quality measure set. The HQI consists of a number of developmental components.

- The Hospital Quality Alliance (HQA), a public-private collaboration, collects and reports hospital quality performance information and makes it available to consumers through CMS information channels. Participating hospitals voluntarily reported on a starter set of 10 hospital quality measures that were expanded, in addition to collecting information on patient perspectives of hospital care. The American Hospital Association (AHA), Federation of American Hospitals (FAH), and the Association of American Medical Colleges (AAMC) are working closely with CMS, The Joint Commission, the National Quality Forum (NQF), the Agency for Healthcare Research and Quality (AHRQ) and other stakeholders to implement this national public reporting initiative.
- Section 501(b) of the Medicare Prescription Drug, Improvement and Modernization Act (MMA) of 2003 stipulated that inpatient prospective payment system (IPPS) hospitals submit 10 quality “starter set” measures to CMS during fiscal years (FYs) 2005-2007 on the quality of inpatient care provided to their patients. For this purpose, the Reporting Hospital Quality Data for Annual Payment Update (RHQDAPU) initiative was developed.
- Section 5001(a) of the Deficit Reduction Act of 2005, Pub. L. 109-171 (DRA) superseded the MMA of 2003 and set new requirements for the RHQDAPU program. The act requires IPPS hospitals to submit the additional quality measures for FY 2007 and each subsequent fiscal year. Hospitals that meet the requirements specified in the final regulation CMS-1488-F will receive their full annual payment update. Those hospitals that do not submit data for all required quality measures to the QIO Clinical Data Warehouse will receive a reduction of 2.0 percent in their Medicare Annual Payment Update for the applicable fiscal year.
- A hospital patient survey (HCAHPS), designed to develop a national standard for collecting information on patient perspectives of hospital care, was tested by hospitals in Arizona, Maryland and New York as part of a CMS hospital pilot. The survey is used by the hospitals participating in the national voluntary reporting effort, and in the special partnership with the Connecticut Department of Public Health.
- The Medicare Improvements and Extension Act under Division B of Title I of the Tax Relief and Health Care Act (MIEA-TRHCA) of 2006 (Pub. L. 109-432), enacted on December 20, 2006, required the establishment of a program under which hospitals will report data on the quality of hospital outpatient care using standardized measures to receive the full annual update to the OPSS payment rate, effective for payments beginning in CY 2009. The final rule (CMS-1392): *Changes to the Hospital Outpatient Prospective Payment System and CY 2008 Payment Rates* was published in the Federal Register on Nov 27, 2007.

Quality Strategy

HQI uses a multi-prong approach to support, provide incentives, and drive systems and facilities (including clinicians and professionals in those settings) toward superior care through:

- Ongoing regulation and enforcement conducted by State survey agencies and CMS,
- Professional and consumer hospital quality information on CMS websites (i.e., www.cms.hhs.gov and www.medicare.gov), and at 1-800-MEDICARE,
- The testing of rewards for superior performance on certain measures of quality,
- Continual, community-based quality improvement programs,
- Collaboration and partnership to leverage knowledge and resources.

Related National Activities

National Quality Forum

The NQF has approved a set of national voluntary consensus standards for measuring the quality of hospital care. These measures will permit consumers, providers, purchasers, and quality improvement professionals to evaluate and compare the quality of care in a variety of healthcare settings across the nation using a standard set of measures.

The Hospital Quality Alliance

The AHA, FAH, and AAMC have launched a national voluntary initiative to collect and report hospital quality performance information. This effort is intended to make critical information about hospital performance accessible to the public and to inform and invigorate efforts to improve quality. The Joint Commission, NQF, CMS, AHRQ and others support this initiative to identify a robust set of standardized and easy-to-understand hospital quality measures that would be used by all stakeholders in the healthcare system in order to improve quality of care and the ability of consumers to make informed healthcare choices. The 21 measures currently reported on Hospital Compare include the 10 “starter set” measures, and additional measures on which hospitals also voluntarily report.

National Quality Measures Clearinghouse

The National Quality Measures Clearinghouse (NQMC™), sponsored by AHRQ, an agency of the U.S. Department of HHS, has included both CMS and Joint Commission measures in its public database for evidence-based quality measures and measure sets.

Measures Management System

The Measures Management System (MMS) is a set of processes and decision criteria used by CMS to oversee the development, implementation, and maintenance of healthcare quality measures. The Quality Measures Management Information System (QMIS) is a comprehensive, web-based, electronic tool to support the MMS. It is the repository of all of the quality measures used by CMS and the electronic tool to track the development and maintenance of those measures. Information includes the quality measures technical specifications, justification and history. Quality measures are currently used for managed care plans, dialysis centers, hospitals, nursing homes, home health agencies and physician offices.

Using the Manual

This portion of the manual provides a brief overview of the information contained within each section of the manual. It is intended as a quick reference to assist in the implementation of the hospital outpatient measures. The sections of this manual are interrelated and are most useful when considered together.

Section 1 – Measurement Information

This section contains a Measure Information Form (MIF) for each hospital outpatient measure.

MIFs describe the purpose, use, and clinical rationale for specific measures. They also identify populations assessed by the measure and how improvement in a measure would be demonstrated.

Detailed analytical algorithms are included with each MIF. The algorithms are used to calculate performance measurement rates for each of the measures. Each algorithm contains detailed steps regarding information used in the rate calculation. They specify when and how exclusion and inclusion criteria are applied for the specified measure.

Section 2 – Data Dictionary

This section describes the patient-level data elements required to capture and calculate individual measurements. It specifies those data elements that must be collected for each patient that falls into any of the selected populations and those data elements needed for a specific measure.

Section 3 – Missing and Invalid Data

This section addresses how to approach missing and invalid data. Missing data refers to data elements, required for calculating a hospital outpatient measure, that have no values present for one or more encounter. Invalid data refers to data element values, required for calculating a hospital outpatient measure, that fall outside of the range of allowable values defined for that data element.

Reducing missing and invalid data minimizes the bias to a measure rate, because records with missing or invalid data cannot be included in the calculation of the observed measure rate. This section describes preventing missing and invalid data in detail.

Section 4 – Population and Sampling Specifications

This section provides guidance on defining the hospital's outpatient population and information on the order of data flow. Defining the population is the first step to estimate a hospital's performance. A population is generally defined as a collection of patients sharing a common set of universally measured characteristics, such as an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis or Current Procedural Terminology (CPT[®]) Code. The outpatient population and diagnosis/CPT[®] codes meet this description for the hospital outpatient measures. Additional information regarding population and sampling are found in this section.

Section 5- Hospital Outpatient Department Quality Measure Data Transmission

This section provides guidelines for transmitting hospital outpatient measure data. It highlights the unique data transmission specifications for hospital outpatient measure data for the CMS and the OPDS Clinical Warehouse. It is divided into three parts: Guidelines for Submission of Data, Transmission Data Element List, and Transmission Data Processing Flow. This section provides specific information regarding data transmission.

Appendix A – ICD-9-CM Diagnosis and CPT® Code Tables

For many of the measures, eligibility for inclusion or exclusion in the outpatient population of interest is defined by the presence of certain ICD-9-CM diagnosis codes and CPT® codes including Evaluation and Management (E/M) codes within the patient-level record. Appendix A contains the code tables that define the populations for all measures. There is a description of the codes as defined in the applicable coding manual and a shortened description that may be used in a data abstraction tool. The Measurement Information section also refers to the codes or tables provided in this section. The code tables in this Appendix are evaluated periodically and modified as indicated.

Appendix B – Glossary of Terms

Appendix C – Medication Tables

Several of the hospital outpatient measures address the use and timing of certain medications. This Appendix contains tables with the specific names that may be associated with medication categories (e.g., trade names). These tables are provided to facilitate appropriate data collection of applicable medications. These tables are not meant to be an inclusive list of all available therapeutic agents; rather they represent current information available at the time of publication.

Appendix P – Measure Preview Section

The measure preview section provides measure information forms and includes additional data collection information on the developmental measure(s). The measure(s) identified in this section are not currently collected. Placement in this appendix does not assume the measure(s) will be implemented into a future manual.

Delivery Settings

OP Measure Number	OP Measure Name	Surgery	Emergency Department
OP-1	Median Time to Fibrinolysis		x
OP-2	Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival		x
OP-3	Median Time to Transfer to Another Facility for Acute Coronary Intervention		x
OP-4	Aspirin at Arrival		x
OP-5	Median Time to ECG		x
OP-6	Timing of Antibiotic Prophylaxis (Prophylactic Antibiotic Initiated Within One Hour Prior to Surgical Incision)	x	
OP-7	Prophylactic Antibiotic Selection for Surgical Patients	x	

Measure Information Forms

Introduction

The measure information section is divided by measure (i.e., OP-1, OP-2, etc.). At the beginning of each measure are the measure identification number (alphanumeric number to identify a measure within a set) and the measure short name. This is followed by a data element list for the measure, including the general data elements, and the specific measure set data elements. Also included are subsections for each specific measure. These contain a Measure Information Form (MIF) and the Performance Measure Algorithm.

The algorithms and data elements needed to calculate each of the hospital outpatient department quality measures are identified in the MIF. Each algorithm provides the logical steps, data element evaluation, arithmetic calculations, and data manipulation steps that are required to calculate a given measure.

The following information is included in each MIF:

- Measure Set: Each measure has a unique name.
- Measure ID #: An alphanumeric number to identify each measure.
- Outpatient Setting: The setting of care is specified in each measure.
- Performance Measure Name: A concise name for each measure.
- Description: A general description of the measure.
- Rationale: Explains the clinical or process improvement importance of the measure.
- Type of Measures: Identifies each measure as process, outcome, or other type of measure.
- Improvement Noted As: States how improvement is demonstrated either by an increase or decrease in the measure rate.
- Numerator Statement: Includes the patients who meet the criteria for a specific measure and pass the measure. Specific inclusion and exclusion information for the population is listed.
- Denominator Statement: Includes the patients who meet the exclusion/inclusion criteria for a specific measure (i.e., patients who are eligible for the measure). Specific inclusion and exclusion information for the population is listed.
- Risk Adjustment: Indicates if risk adjustment methodology is applied to the measure.
- Data Collection Approach: Indicates the type of data used. For example, administrative and/or medical record.
- Data Accuracy: Suggestions on how data accuracy and consistency may be affected and can be improved.
- Measure Analysis Suggestions: Suggestions on interpreting and using the data.
- Sampling: Will refer to the sampling specifications in most instances to allow more detailed information to be provided in one reference.
- Data Reported As: Indicates the format in which data is reported.
- Selected References: Lists the most relevant clinical literature references.

Measure Category Assignments

Measure Category Assignments are calculated measure results for each record that is processed through a measure algorithm. They are used to summarize the outcome for a record that is processed through a specific measure algorithm.

The following are the possible Measure Category Assignments:

- B Category B – Not in Measure Population
For rate-based and continuous variable measures: Record is not a member of the measure's population.

- D Category D – In Measure Population (used for reporting)
For rate-based measures: Record is a member of the measure's population and there has not been an occurrence of the measure.

For continuous variable measures: Record is a member of the measure's population and has sufficient, accurate, and valid data to compute the measurement.

- D(#) Category D(#) – In Measure Population (used to identify stratified populations of specific measures)
For rate-based measures: Record is a member of the measure's population and there has not been an occurrence of the measure.

For continuous variable measures: Record is a member of the measure's population and has sufficient, accurate, and valid data to compute the measurement.

- E Category E – In Numerator Population
For rate-based measures: Record is a member of the measure's population and there has been an occurrence of the measure.

For continuous variable measures: Does not apply.

- X Category X – Data Are Missing
For rate-based and continuous variable measures: Data are missing that is required to calculate the measure. The record will be rejected when transmitted.

- Y Category Y – Unable to Determine (UTD) Allowable Value Does Not Allow Calculation of the Measure
For rate-based measures: Does not apply.
For continuous variable measures: Record contains a Date, Time or Numeric data element with a value of 'UTD.'

HOSPITAL OUTPATIENT DEPARTMENT QUALITY MEASURES
Acute Myocardial Infarction (AMI) and Chest Pain

Set Measure ID #	Measure Short Name
OP-1¹	Median Time to Fibrinolysis
OP-2¹	Fibrinolytic Therapy Received Within 30 Minutes
OP-3¹	Median Time to Transfer to Another Facility for Acute Coronary Intervention
OP-4²	Aspirin at Arrival
OP-5²	Median Time to ECG

¹ Measures only applicable to AMI Population

² Measures apply to both the AMI Population and Chest Pain Population

OP AMI AND CHEST PAIN GENERAL DATA ELEMENT LIST

General Data Element Name	Collected For:
<i>Arrival Time</i>	All Records
<i>Birthdate</i>	All Records
<i>CMS Certification Number^{3,4}</i>	All Records
<i>First Name</i>	All Records
<i>Hispanic Ethnicity</i>	All Records
<i>Last Name</i>	All Records
<i>National Provider Identifier^{3,4}</i>	All Records
<i>Outpatient Encounter Date</i>	All Records
<i>Patient HIC#</i>	All Records
<i>Patient Identifier</i>	All Records
<i>Payment Source</i>	All Records
<i>Physician 1</i>	Optional for All Records
<i>Physician 2</i>	Optional for All Records
<i>Postal Code</i>	All Records
<i>Race</i>	All Records
<i>Sex</i>	All Records

³ Transmission Data Element

⁴ Defined in the Transmission Data Element List within the Hospital Outpatient Measure Data Transmission section of this manual

OP AMI AND CHEST PAIN SPECIFIC DATA ELEMENT LIST

OP AMI and CP Data Element Name	Collected For:
<i>Aspirin Received</i>	OP-4
<i>Discharge Date and Time</i>	OP-3
<i>Discharge Status</i>	OP-1, OP-2, OP-3, OP-4, OP-5
<i>E/M Code</i>	OP-1, OP-2, OP-3, OP-4, OP-5
<i>ECG</i>	OP-5
<i>ECG Date and Time</i>	OP-5
<i>Fibrinolytic Administration</i>	OP-1, OP-2, OP-3

Specifications Manual for Hospital Outpatient Department Quality Measures
Encounter dates 01-01-10 (1Q10) through 06-30-10 (2Q10) v.3.0a

AMI-CP-1

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OP AMI and CP Data Element Name	Collected For:
<i>Fibrinolytic Administration Date and Time</i>	OP-1, OP-2
<i>ICD-9-CM Other Diagnosis Codes</i>	OP-4, OP-5
<i>ICD-9-CM Principal Diagnosis Code</i>	OP-1, OP-2, OP-3, OP-4, OP-5
<i>Initial ECG Interpretation</i>	OP-1, OP-2, OP-3
<i>Probable Cardiac Chest Pain</i>	OP-4, OP-5
<i>Reason for Delay in Fibrinolytic Therapy</i>	OP-1, OP-2
<i>Reason for No Aspirin on Arrival</i>	OP-4
<i>Reason for Not Administering Fibrinolytic Therapy</i>	OP-3
<i>Transfer for Acute Coronary Intervention</i>	OP-3

OP-1, OP-2, OP-3, OP-4, and OP-5 Hospital Outpatient Population

The Hospital Outpatient AMI/Chest Pain measures have two distinct populations.

Acute Myocardial Infarction

The population of the OP-1 through OP-5 AMI measures is identified using 5 data elements:

- *E/M Code*
- *Discharge Status*
- *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-1 through OP-5 AMI Hospital Outpatient Population and are eligible to be sampled if they have:

- Discharged / transferred to a short-term general hospital for inpatient care or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on *Outpatient Encounter Date* (*Outpatient Encounter Date – Birthdate*) \geq 18 years, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI defined in Appendix A, OP Table 1.1.

Chest Pain

The population of the OP-4 and OP-5 Chest Pain measures is identified using 6 data elements:

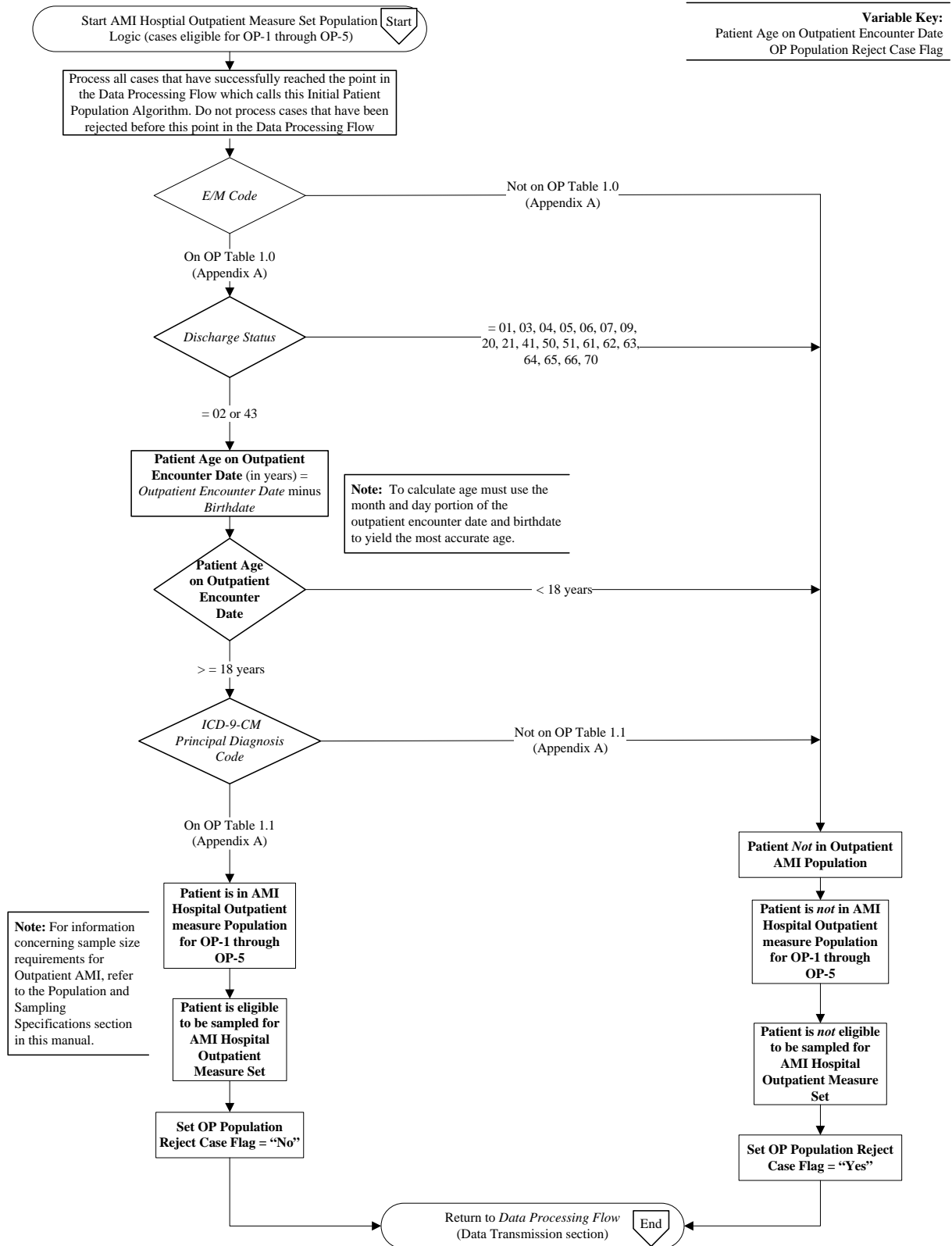
- *E/M Code*
- *Discharge Status*
- *Outpatient Encounter Date*
- *Birthdate*
- *ICD-9-CM Principal Diagnosis Code*
- *ICD-9-CM Other Diagnosis Codes*

Patients seen in a Hospital Emergency Department (*E/M Code* on Appendix A OP Table 1.0) are included in the OP-4 and OP-5 Chest Pain Hospital Outpatient Population and are eligible to be sampled if they have:

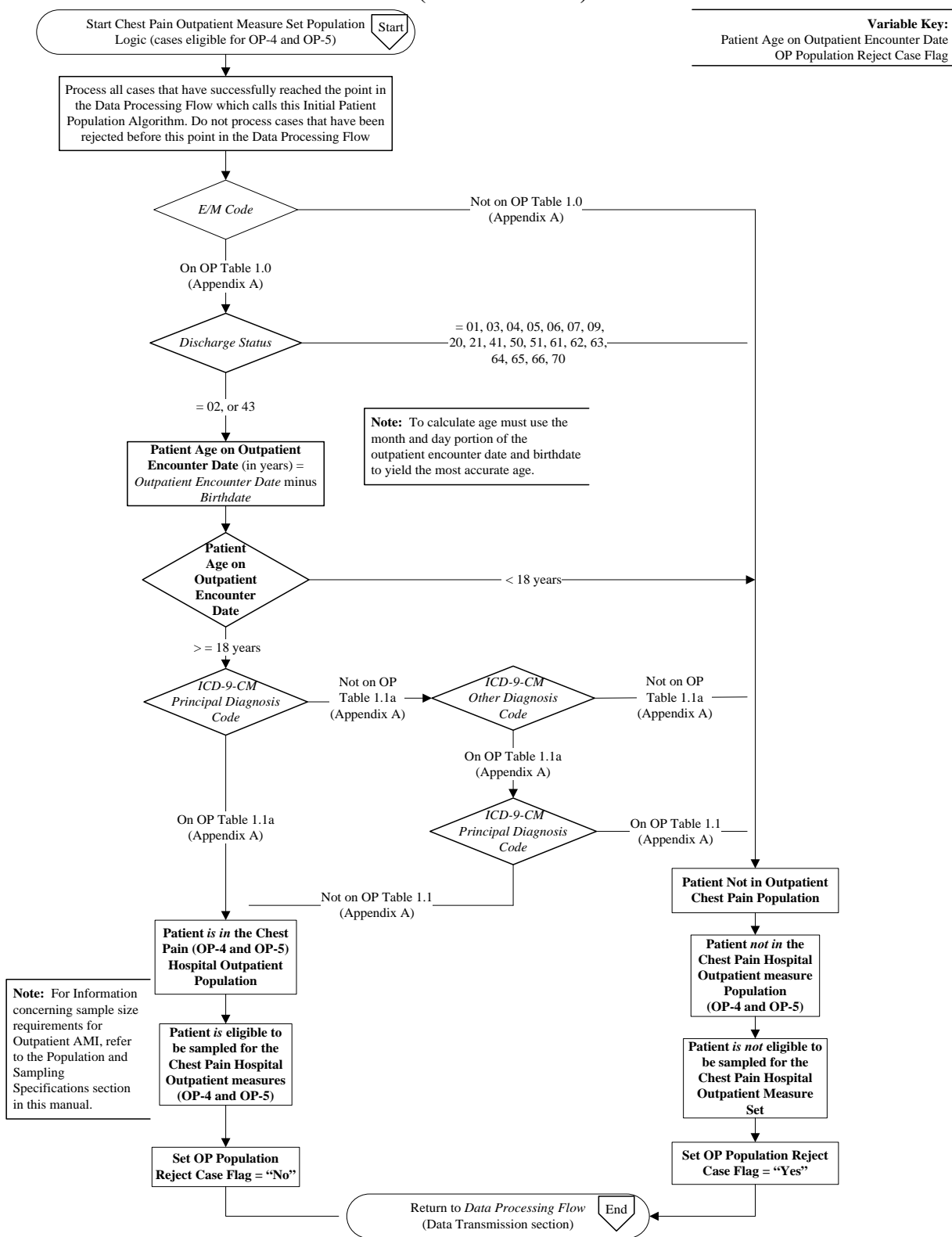
- Discharged / transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility (*Discharge Status*), and
- A Patient Age on *Outpatient Encounter Date* (*Outpatient Encounter Date – Birthdate*) \geq 18 years, and
- An *ICD-9-CM Principal or Other Diagnosis Codes* for Chest Pain as defined in Appendix A, OP Table 1.1a.

Patients with an *ICD-9-CM Principal Diagnosis Code* for AMI are not eligible for the Chest Pain Hospital Outpatient Population

AMI Hospital Outpatient Population Algorithm (OP-1 through OP-5)



Chest Pain Hospital Outpatient Population Algorithm (OP-4 and OP-5)



Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction

Measure ID#: OP-1

Outpatient Setting: Emergency Department

Performance Measure Name: Median Time to Fibrinolysis

Description: Median time from emergency department arrival to administration of fibrinolytic therapy in ED patients with ST-segment elevation or left bundle branch block (LBBB) on the electrocardiogram (ECG) performed closest to ED arrival and prior to transfer.

Rationale: Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists' Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004). Despite these recommendations, few eligible older patients hospitalized with AMI receive timely fibrinolytic therapy (Jencks, 2000).

Type of Measure: Process

Improvement Noted As: A decrease in the median value

Continuous Variable Statement: Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer.

Included Populations:

- An *E/M Code* for emergency department encounter as defined in Appendix A, OP Table 1.0, and
- Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1, and
- ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
- *Fibrinolytic Administration* as defined in the Data Dictionary

Excluded Populations:

- Patients less than 18 years of age

- Patients who did not receive *Fibrinolytic Administration* within 30 minutes and had a *Reason for Delay in Fibrinolytic Therapy* as defined in the Data Dictionary

Data Elements:

- *Arrival Time*
- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *Fibrinolytic Administration*
- *Fibrinolytic Administration Date and Time*
- *ICD-9-CM Principal Diagnosis Code*
- *Initial ECG Interpretation*
- *Outpatient Encounter Date*
- *Reason for Delay in Fibrinolytic Therapy*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires 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: The median time to fibrinolysis should be analyzed in conjunction with the measure rate for fibrinolysis received within 30 minutes of emergency department arrival (OP-2). These measures, used together, will assist in understanding the median time to fibrinolysis and will identify the number of AMI patients that are receiving fibrinolysis within 30 minutes of emergency department arrival and potential opportunities for improvement to decrease the median time to fibrinolysis.

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

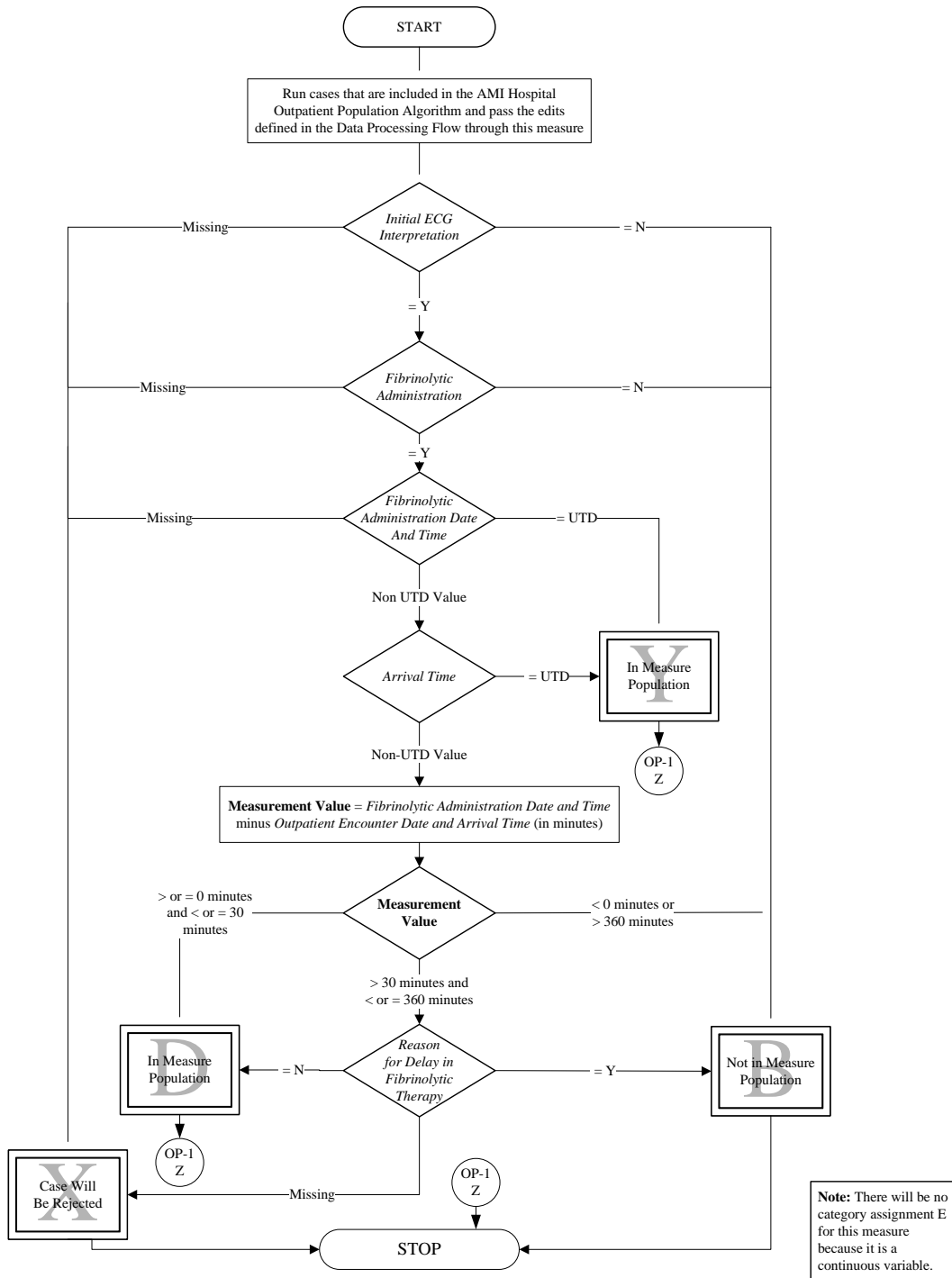
Data Reported As: Aggregate measure of central tendency

Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at: <http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm>
- Fibrinolytic Therapy Trialists' (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. *Lancet*. 1994; 343:311-22.
- Jencks SJ, Cuerdon T, Burwen DR, Fleming B, Houck PM, Kussmaul AE, Nilasena DS, Ordin DL, Arday DR. Quality of medical care delivered to Medicare beneficiaries: a profile at state and national levels. *JAMA*. 2000; 284:1670-76.
- Krumholz HM, Anderson JL, Brooks NH, Fesmire FM, Lambrew CT, Landrum MB, Weaver WD, Whyte J. ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction: a report of the ACC/AHA Task Force on Performance Measures (ST-Elevation and Non-ST-Elevation Myocardial Infarction Performance Measures Writing Committee). *J Am Coll Cardiol* 2006; 47:236–65. Available at: <http://www.acc.org/qualityandscience/clinical/measures/stemi/pdfs/STEMIfinal.pdf>

OP-1: Median Time to Fibrinolysis

Continuous Variable Statement: Time (in minutes) from emergency department arrival to administration of fibrinolytic therapy in AMI patients with ST-segment elevation or LBBB on the ECG performed closest to ED arrival and prior to transfer.



Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction

Measure ID#: OP-2

Outpatient Setting: Emergency Department

Performance Measure Name: Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

Description: Emergency Department acute myocardial infarction (AMI) patients receiving fibrinolytic therapy during the ED stay and having a time from ED arrival to fibrinolysis of 30 minutes or less.

Rationale: Time to fibrinolytic therapy is a strong predictor of outcome in patients with an acute myocardial infarction. Nearly 2 lives per 1,000 patients are lost per hour of delay (Fibrinolytic Therapy Trialists' Collaborative Group, 1994). National guidelines recommend that fibrinolytic therapy be given within 30 minutes of hospital arrival in patients with ST-segment elevation myocardial infarction (Antman, 2004). Despite these recommendations, few eligible older patients hospitalized with AMI receive timely fibrinolytic therapy (Jencks, 2000).

Type of Measure: Process

Improvement Noted as: An increase in the rate

Numerator Statement: Emergency Department AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less.

Included Populations: Not Applicable

Excluded Populations: None

Data Elements:

- *Arrival Time*
- *Fibrinolytic Administration*
- *Fibrinolytic Administration Date and Time*
- *Outpatient Encounter Date*

Denominator Statement: Emergency Department AMI patients with ST-segment elevation or LBBB on ECG who received fibrinolytic therapy.

Included Populations:

- An *E/M Code* for emergency department encounter as defined in Appendix A, OP Table 1.0, and
- Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1, and
- ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
- *Fibrinolytic Administration* as defined in the Data Dictionary

Excluded Populations:

- Patients less than 18 years of age
- Patients who did not receive *Fibrinolytic Administration* within 30 minutes AND had a *Reason for Delay in Fibrinolytic Therapy* as defined in the Data Dictionary

Data Elements:

- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *ICD-9-CM Principal Diagnosis Code*
- *Initial ECG Interpretation*
- *Reason for Delay in Fibrinolytic Therapy*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires 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: The measure rate for fibrinolytic agent received within 30 minutes of emergency department arrival should be analyzed in conjunction with the ED median time to fibrinolysis measure (OP-1). These measures, used together, will assist in understanding the number of AMI patients that are receiving fibrinolysis within 30 minutes of emergency department arrival and will identify the emergency department's median time to fibrinolysis and potential opportunities for improvement to increase the rate of patients receiving fibrinolysis in 30 minutes or less.

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

Data Reported as: Aggregate rate generated from count data reported as a proportion

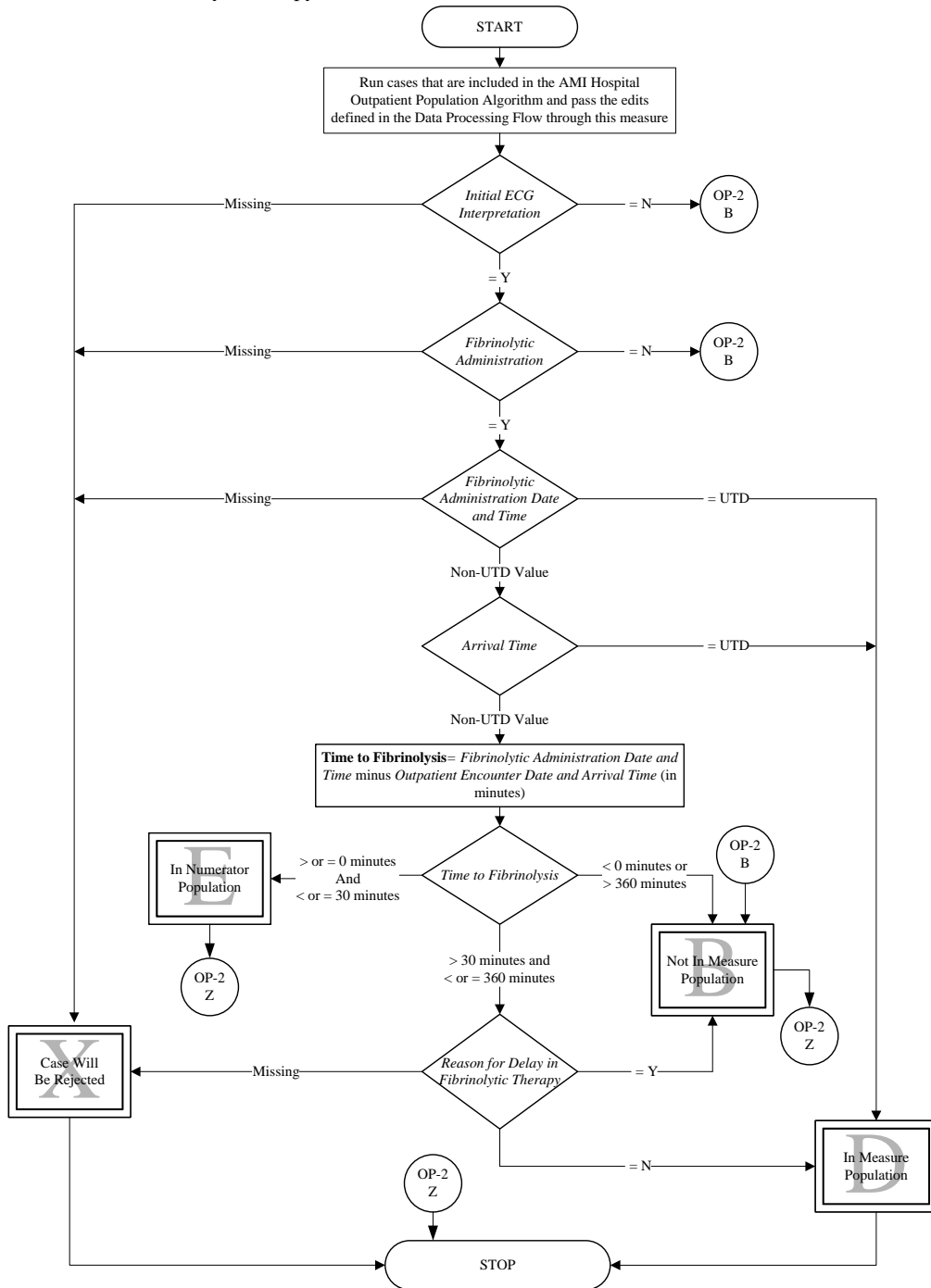
Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at: <http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm>
- Fibrinolytic Therapy Trialists' (FTT) Collaborative Group. Indications for fibrinolytic therapy in suspected acute myocardial infarction: collaborative overview of early mortality and major morbidity results from all randomized trials of more than 1000 patients. *Lancet*. 1994; 343:311-22.
- Jencks SJ, Cuerdon T, Burwen DR, Fleming B, Houck PM, Kussmaul AE, Nilasena DS, Ordin DL, Arday DR. Quality of medical care delivered to Medicare beneficiaries: a profile at state and national levels. *JAMA*. 2000;284:1670-1676.
- Krumholz HM, Anderson JL, Brooks NH, Fesmire FM, Lambrew CT, Landrum MB, Weaver WD, Whyte J. ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction: a report of the ACC/AHA Task Force on Performance Measures (ST-Elevation and Non-ST-Elevation Myocardial Infarction Performance Measures Writing Committee). *J Am Coll Cardiol* 2006;47:236-65. Available at: <http://www.acc.org/qualityandscience/clinical/measures/stemi/pdfs/STEMIfinal.pdf>

OP-2: ED Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival

Numerator: Emergency Department AMI patients whose time from ED arrival to fibrinolysis is 30 minutes or less

Denominator: Emergency Department AMI patients with ST-segment elevation or LBBB on ECG who received fibrinolytic therapy.



Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction

Measure ID #: OP-3

Outpatient Setting: Emergency Department

Set Measure ID #	Performance Measure Name
OP-3a	Median Time to Transfer to Another Facility for Acute Coronary Intervention – Overall Rate
OP-3b	Median Time to Transfer to Another Facility for Acute Coronary Intervention –Reporting Measure
OP-3c*	Median Time to Transfer to Another Facility for Acute Coronary Intervention –Quality Improvement Measure

*(previously noted as D prime)

Performance Measure Name: Median Time to Transfer to Another Facility for Acute Coronary Intervention

Description: Median time from emergency department arrival to time of transfer to another facility for acute coronary intervention

Rationale: The early use of primary angioplasty in patients with acute myocardial infarction (AMI) who present with ST-segment elevation or LBBB results in a significant reduction in mortality and morbidity. The earlier primary coronary intervention is provided, the more effective it is (Brodie, 1998 and DeLuca, 2004). National guidelines recommend the prompt initiation of percutaneous coronary intervention (PCI) in patients presenting with ST-segment elevation myocardial infarction (Antman, 2004). Despite these recommendations, few eligible older patients hospitalized with AMI receive primary angioplasty within a timely manner (Jencks, 2000). Patients transferred for primary PCI rarely meet recommended guidelines for door-to-balloon time (Nallamothu, 2005). Times to treatment in transfer patients undergoing primary PCI may influence the use of PCI as an intervention (Nallamothu, 2005). Current recommendations support a door-to-balloon time of 90 minutes or less (Krumholz, 2006).

Type of Measure: Process

Improvement Noted As: A decrease in the median value

Continuous Variable Statement: Time (in minutes) from emergency department arrival to transfer to another facility for acute coronary intervention.

Included Populations:

- An *E/M Code* for emergency department encounter as defined in Appendix A, OP Table 1.0, and
- Patients discharged/transferred to a short-term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1, and
- ST-segment elevation or LBBB on the ECG performed closest to ED arrival, and
- Patients with *Transfer for Acute Coronary Intervention* as defined in the Data Dictionary

Excluded Populations:

- Patients less than 18 years of age
- Patients receiving *Fibrinolytic Administration* as defined in the Data Dictionary

Data Elements:

- *Arrival Time*
- *Birthdate*
- *Discharge Date and Time*
- *Discharge Status*
- *E/M Code*
- *Fibrinolytic Administration*
- *ICD-9-CM Principal Diagnosis Code*
- *Initial ECG Interpretation*
- *Outpatient Encounter Date*
- *Reason for Not Administering Fibrinolytic Therapy*
- *Transfer for Acute Coronary Intervention*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires 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.

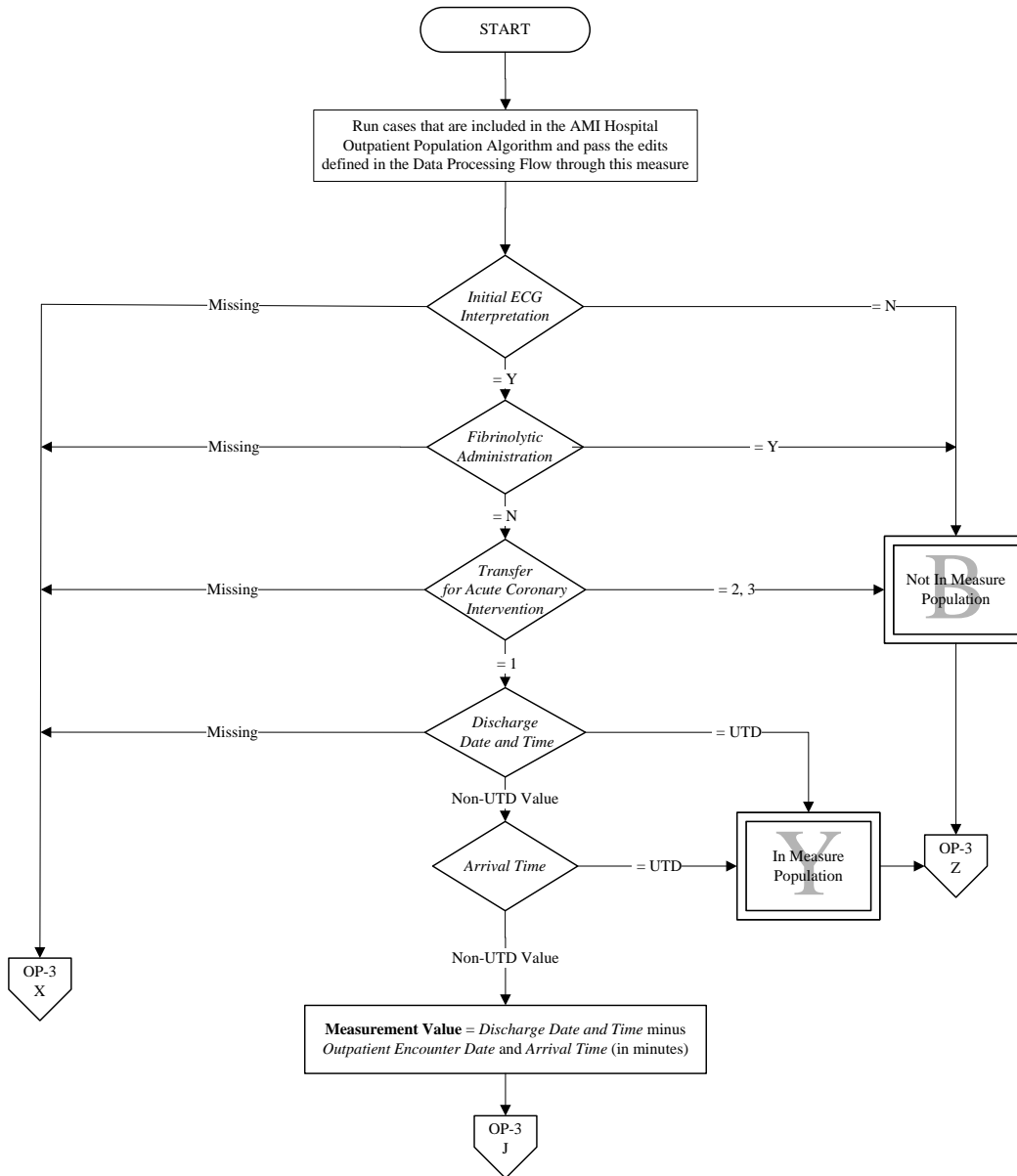
Data Reported As: Aggregate measure of central tendency

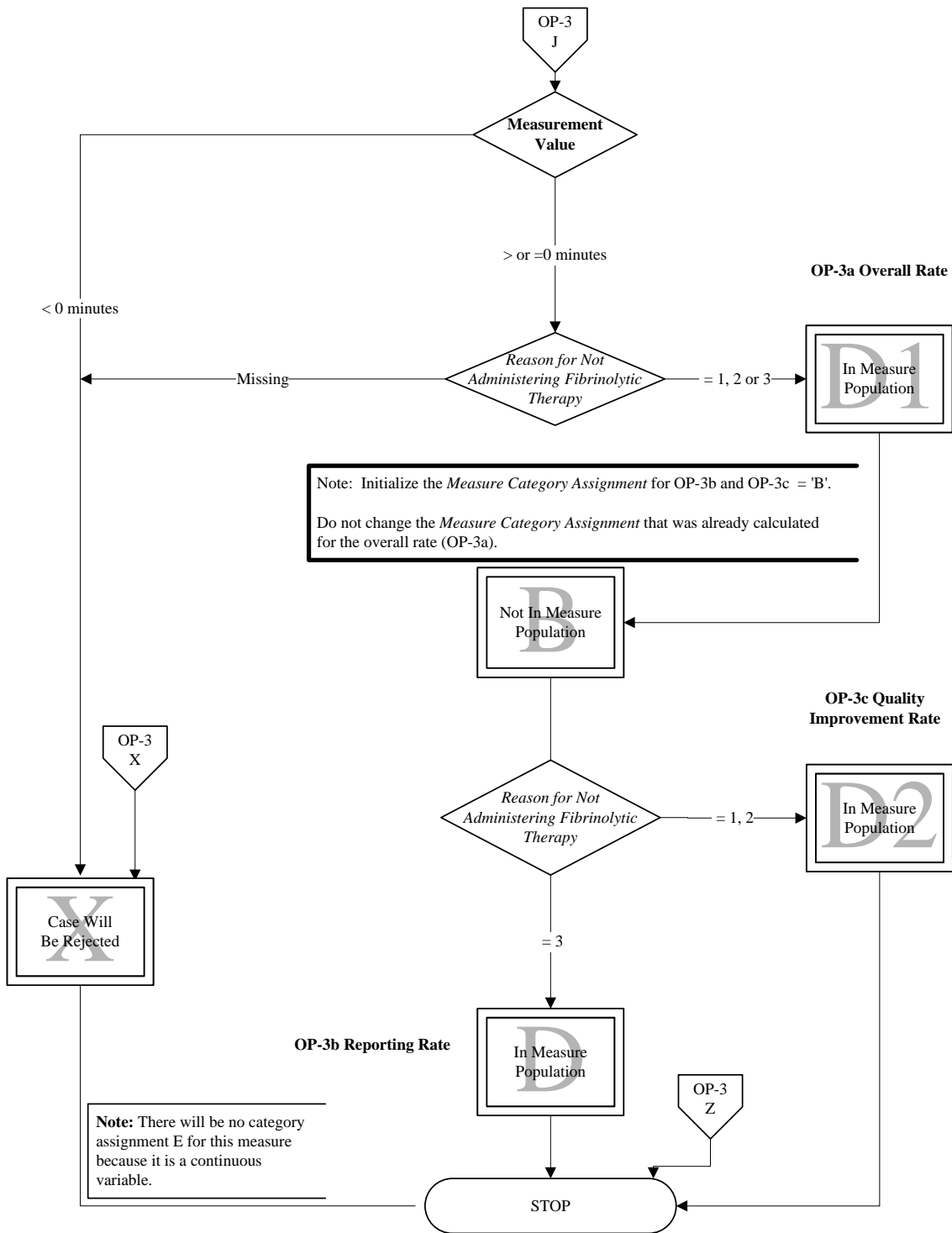
Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at: <http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm>
- Brodie BR, Stuckey TD, Wall TC, Kissling G, Hansen CJ, Muncy DB, Weintraub RA, Kelly TA. Importance of time to reperfusion for 30-day and late survival and recovery of left ventricular function after primary angioplasty for acute myocardial infarction. *J Am Coll Cardiol*. 1998;32:1312-9.
- DeLuca G, Suryapranata H, Ottervanger JP, Antman EM. Time delay to treatment and mortality in primary angioplasty for acute myocardial infarction: every minute of delay counts. *Circulation* 2004; 109:1223-1225.
- Jencks SJ, Cuedon T, Burwen DR, Fleming B, Houck PM, Kussmaul AE, Nilasena DS, Ordin DL, Arday DR. Quality of medical care delivered to Medicare beneficiaries: a profile at state and national levels. *JAMA*. 2000;284:1670-1676.
- Krumholz HM, Anderson JL, Brooks NH, Fesmire FM, Lambrew CT, Landrum MB, Weaver WD, Whyte J. ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction: a report of the ACC/AHA Task Force on Performance Measures (ST-Elevation and Non-ST-Elevation Myocardial Infarction Performance Measures Writing Committee). *J Am Coll Cardiol* 2006;47:236–65. Available at: <http://www.acc.org/qualityandscience/clinical/measures/stemi/pdfs/STEMIfinal.pdf>
- Nallamothu BK, Bates ER, Herrin J, Wang Y, Bradley EH, Krumholz HM; NRMI Investigators. Times to treatment in transfer patients undergoing primary percutaneous coronary intervention in the United States: National Registry of Myocardial Infarction (NRMI)-3/4 analysis. *Circulation*. 2005;111:761-7.

OP-3: Median Time to Transfer to Another Facility for Acute Coronary Intervention

Continuous Variable Statement: Time (in minutes) from emergency department arrival to transfer to another facility for acute coronary intervention





Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction and Hospital Outpatient Chest Pain

Measure ID#: OP-4

Outpatient Setting: Emergency Department

Performance Measure Name: Aspirin at Arrival

Description: Emergency Department acute myocardial infarction (AMI) patients or chest pain patients (with *Probable Cardiac Chest Pain*) who received aspirin within 24 hours before ED arrival or prior to transfer.

Rationale: The early use of aspirin in patients with AMI results in a significant reduction in adverse events and subsequent mortality. Aspirin therapy provides a percent reduction in mortality that is comparable to thrombolytic therapy and the combination provides additive benefit for patients with ST-segment elevation myocardial infarction (ISIS-2, 1988) and is also effective in patients with non-ST-segment elevation myocardial infarction (Theroux, 1988 and RISC Group, 1990). National guidelines strongly recommend early aspirin for patients hospitalized with AMI (Braunwald, 2002 and Antman, 2004).

Type of Measure: Process

Improvement Noted As: An increase in the rate

Numerator Statement: Emergency Department AMI or Chest Pain patients (with *Probable Cardiac Chest Pain*) who received aspirin within 24 hours before ED arrival or prior to transfer.

Included Populations: Not Applicable

Excluded Populations: None

Data Elements:

Aspirin Received

Denominator Statement: Emergency Department AMI or Chest Pain patients (with *Probable Cardiac Chest Pain*)

Included Populations:

- An E/M Code for emergency department encounter as defined in Appendix A, Table 1.0, and

- Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1 or an *ICD-9-CM Principal or Other Diagnosis Codes* for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a with *Probable Cardiac Chest Pain*

Excluded Populations:

- Patients less than 18 years of age
- Patients with a documented *Reason for No Aspirin on Arrival*

Data Elements:

- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *ICD-9-CM Other Diagnosis Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *Outpatient Encounter Date*
- *Probable Cardiac Chest Pain*
- *Reason for No Aspirin on Arrival*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires 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. Sampling requirements apply to each distinct hospital outpatient measure set (AMI and Chest Pain).

Data Reported As: Aggregate rate generated from count data reported as a proportion

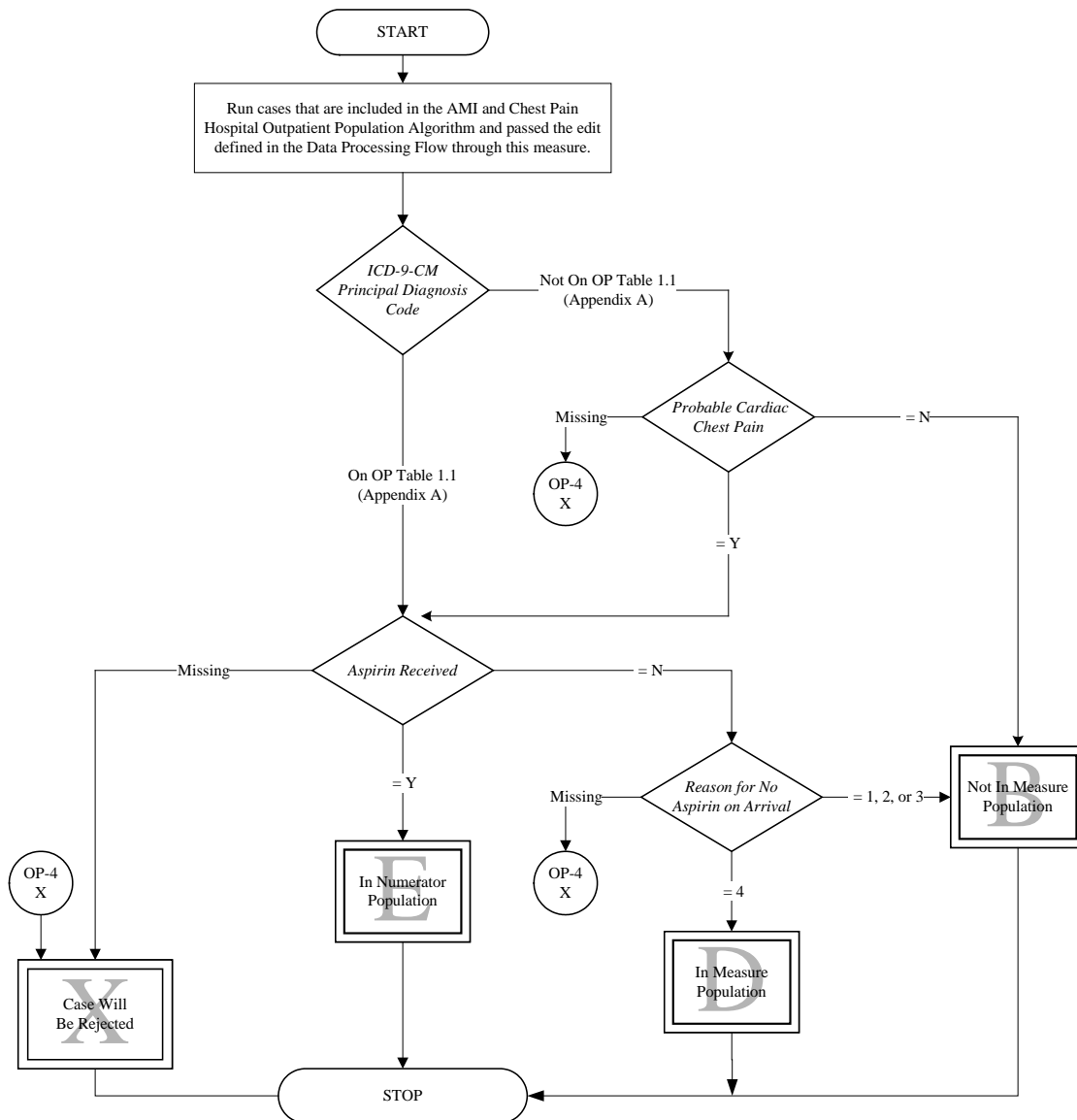
Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at <http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm>
- Braunwald E, Antman EM, Beasley JW, Califf RM, Cheitlin MD, Hochman JS, Jones RH, Kereiakes D, Kupersmith J, Levin TN, Pepline CJ, Schaeffer JW, Smith EE III, Steward DE, Theroux P. ACC/AHA 2002 guideline update for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on the Management of Patients with Unstable Angina). 2002. Available at http://www.acc.org/qualityandscience/clinical/guidelines/unstable/update_index.htm
- Krumholz HM, Anderson JL, Brooks NH, Fesmire FM, Lambrew CT, Landrum MB, Weaver WD, Whyte J. ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction: a report of the ACC/AHA Task Force on Performance Measures (ST-Elevation and Non-ST-Elevation Myocardial Infarction Performance Measures Writing Committee). *J Am Coll Cardiol* 2006;47:236–65. Available at <http://www.acc.org/qualityandscience/clinical/measures/stemi/pdfs/STEMIfinal.pdf>
- Randomized trial of intravenous streptokinase, oral aspirin, both or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. *Lancet*. 1988 Aug 13;2(8607):349-60.
- Risk of myocardial infarction and death during treatment with low dose aspirin and intravenous heparin in men with unstable coronary artery disease. The RISC Group. *Lancet* 1990; 336(8719):827-30.
- Theroux P, Ouimet H, McCans J et al. Aspirin, heparin, or both to treat acute unstable angina. *N Engl J Med* 1988; 319:1105-11.

OP-4: Aspirin at Arrival

Numerator: Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain) who received aspirin within 24 hours before ED arrival or prior to transfer.

Denominator: Emergency Department AMI or Chest Pain patients (with Probable Cardiac Chest Pain).



Measure Information Form

Measure Set: Hospital Outpatient Acute Myocardial Infarction and Hospital Outpatient Chest Pain

Measure ID#: OP-5

Outpatient Setting: Emergency Department

Performance Measure Name: Median Time to ECG

Description: Median time from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with Probable Cardiac Chest Pain).

Rationale: Guidelines recommend patients presenting with chest discomfort or symptoms suggestive of ST-segment elevation myocardial infarction (STEMI) have a 12-lead electrocardiogram (ECG) performed within a target of 10 minutes of emergency department arrival (Krumholz, 2006). Evidence supports reperfusion benefits patients with identified STEMI (Antman 2004). The diagnosis and management of STEMI patients is dependent upon practices within the emergency department. Timely ECGs assist in identifying STEMI patients and impact the choice of reperfusion strategy (Peacock, 2007). This measure will identify the median time to ECG for chest pain or AMI patients and potential opportunities for improvement to decrease the median time to ECG.

Type of Measure: Process

Improvement Noted As: A decrease in the median value

Continuous Variable Statement: Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for AMI or Chest Pain patients (with *Probable Cardiac Chest Pain*).

Included Populations:

- An *E/M Code* for emergency department encounter as defined in Appendix A, OP Table 1.0, and
- Patients discharged/transferred to a short term general hospital for inpatient care, or to a Federal healthcare facility, and
- An *ICD-9-CM Principal Diagnosis Code* for AMI as defined in Appendix A, OP Table 1.1 or an *ICD-9-CM Principal or Other Diagnosis Codes* for Angina, Acute Coronary Syndrome, or Chest Pain as defined in Appendix A, OP Table 1.1a, and
- Patients receiving an *ECG* as defined in the Data Dictionary

Excluded Populations:

- Patients less than 18 years of age

Data Elements:

- *Arrival Time*
- *Birthdate*
- *Discharge Status*
- *E/M Code*
- *ECG*
- *ECG Date and Time*
- *ICD-9-CM Other Diagnosis Codes*
- *ICD-9-CM Principal Diagnosis Code*
- *Outpatient Encounter Date*
- *Probable Cardiac Chest Pain*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records. Some facilities may prefer to gather data concurrently by identifying patients in the population of interest. This approach provides opportunity for improvement at the point of care/service. However, complete documentation includes the ICD-9-CM diagnosis, which requires 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. Sampling requirements apply to each distinct hospital outpatient measure set (AMI and Chest Pain).

Data Reported As: Aggregate measure of central tendency

Selected References:

- Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). 2004. Available at <http://www.acc.org/qualityandscience/clinical/guidelines/stemi/Guideline1/index.htm>
- Krumholz HM, Anderson JL, Brooks NH, Fesmire FM, Lambrew CT, Landrum MB, Weaver WD, Whyte J. ACC/AHA Clinical Performance Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction: a report of the ACC/AHA Task Force on Performance Measures (ST-Elevation and Non-ST-Elevation Myocardial Infarction Performance Measures Writing Committee). *J Am Coll Cardiol* 2006; 47:236–65. Available at <http://www.acc.org/qualityandscience/clinical/measures/stemi/pdfs/STEMIfinal.pdf>
- Peacock WF, Hollander JE, Smalling RW, and Bresler MJ. Reperfusion Strategies in the emergency treatment of ST-segment elevation myocardial infarction. *Am J Emerg Med* 2007; 25: 353-66.

OP-5: ED Median Time to ECG

Continuous Variable Statement: Time (in minutes) from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with probable cardiac chest pain).

