Commonwealth of Massachusetts
Executive Office of Health Human Services

Technical Specifications Manual for MassHealth Acute Hospital Quality Measures (Version 6.1.a)

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SECTION 1. INTRODUCTION

The Massachusetts Executive Office of Health and Human Services (EOHHS) publishes this technical specifications manual, as a supplement to the Acute Hospital Request for Application (RFA) contract, for hospitals participating in the MassHealth Hospital Pay-for-Performance (P4P) Program reporting requirements.

To minimize reporting burden, every effort has been made to align the MassHealth hospital quality reporting requirements with national standards for hospital measurement and reporting systems supported by the Centers for Medicare and Medicaid Services (CMS) and other stakeholder groups involved in hospital quality measurement.

A. Purpose of Manual

This EOHHS Technical Specifications Manual for Acute Hospital Quality Measures (EOHHS Manual) contains comprehensive instructions to assist hospitals with implementation of the MassHealth Hospital P4P measures reporting requirements under the Acute Hospital RFA.

This manual serves as a reference guide that provides information on:

- Standards for data collection and submission guidelines on all quality measures reporting.
- Standards for data accuracy and data completeness requirements.
- Technical specifications and data reporting tools for MassHealth specific measures not published in national hospital quality reporting manuals.
- Instructions to modify nationally reported hospital quality measures that apply to MassHealth measures data reporting. This EOHHS manual is intended to be used in conjunction with existing national hospital measures reporting specification manuals posted on QNet and Joint Commission websites. Hospitals are responsible for accessing all national specifications and updated release notes that apply to MassHealth reporting.
- Appendices that include data tools and resources to support collection/reporting of all measures data.
- Types of reports available to assist hospitals in monitoring data reporting status;
- MassQEX website portal for secure data exchange and accessing the Customer Support Help Desk.

EOHHS reserves the right to make changes to measure specifications contained in this manual, during each Acute Hospital RFA contract period, as necessary to improve reliability and accuracy of measurement and reporting. Individuals designated as Acute Hospital RFA key quality contacts will be notified of changes to this manual via the EOHHS mailbox system Masshealthhospitalquality@state.ma.us. Hospital third-party data vendors authorized to submit data on the hospitals behalf will be notified via the MassQEX list-serve system.

The Acute Hospital RFA contract outlines the terms and conditions that hospitals must meet in order to be eligible for incentive payments under the MassHealth Hospital P4P program. The Acute RFA can be downloaded from the Comm-Pass website at: http//www.comm-pass.com.

All inquiries about the Acute RFA MassHealth Hospital Pay-for-Performance Program requirements should be directed to: Iris Garcia-Caban, PhD, MassHealth Office of Providers and Plans at (617) 847-6528 or via email Masshealthhospitalquality@state.ma.us

ACKNOWLEDGEMENTS

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B. Enhancements to Version 6.1a

This version of the EOHHS Technical Specifications Manual contains substantive updates throughout all sections that apply to RY2013 and upcoming RY2014 (Q1) reporting requirements. Key changes to this version of the manual and appendices are shown in *italic underline font* and summarized in Table below.

SECTION	CORE MANUAL (DESCRIPTION OF CHANGE)	RATIONALE	PAGE
TOC	**Table of Contents** • Add new sub-header under Section 1.E and Section 5G	New Insert	1
1	**Introduction** • Section 1.B - modify summary table footnote definitions • Section 1.C – modify Table 1.1 header, *add v6.1a,* modify text after table • Section 1.D – modify, expand text on Table 1.2; clarify all text under Table 1.2 • Section 1.E - insert new sub-header & Table 1.3 RY data periods used for calculations	Update, Clarify, New insert	2
2	**Data Collection Standards & Guidelines** • Section 2.B - update EHS *version 6.1a* that apply, correct ICD code table for TJC manual • Section 2.C.1 - modify & reformat all Medicaid payer text descriptions into Table 2.2 • Section 2.C.1- correct old DHCFP website links under Tables 2.2, 2.3 and 2.4. • Section 2.C.3 - delete DHCFP acronym from Race/Ethnicity definitions; • Section 2.D.1 - update reference to v6.1 that applies for all tools; • Section 2.D.2 - add reference to v6.1 under data abstraction text • Section 4.D.5 - insert new sub-header, Table 2.5 EHS manual versions, *add row for 6.1a* • Section 2.E - insert text on new data attestation requirements as of RY14	Update, New insert Clarify	6
3	**MassHealth Measures Specifications** • Section 3.D - change to MAT-3 data element name (labor) & flowchart • Section 3.E - update CCM-1,2,3 descriptions, rationale & denominator statements • Section 3.E - change CCM-2 data element names (medical proced/test; discharge diag) • Section 3.E - *correction to CCM-2 flowchart, re-insert transition counter algorithm that requires each element to be abstracted, correct patient ID element name (on pgs 48-53).*	New insert, clarify, update	14
4	**MassHealth Population Sampling Specifications** • Section 4.D - edit text under Tables 4.1 & 4.2 to clarify applies to all measures. • Section 4.E - edit text for clarify payer code 98 instructions	Update	*63*
5	**Data Transmittal Guidelines** • section 5.A.1 - update reference to XML schema version 6.1 that apply Q1-2013 • Section 5.A.6 - add text to reference new section 5.G • Section 5.G - insert new section on data extension request protocol & sample form	Clarify, New Insert	*67*
6	**Data Validation Methods** • Section 6.A.4 - edit text to increase charts required (n=6 per quarter) effective with Q1-2013 data submissions.	Update	*78*
7	**Health Disparities Measure Specifications**	None	*82*
	APPENDIX (DESCRIPTION OF CHANGE)		
A-1	MAT-1 Data Abstraction Tool - *change made to version label only*	None	Separate pdf
A-2	MAT-2a,b Data Abstraction Tool - *change made to version label only*	None	Separate pdf
A-3	MAT-3 Data Abstraction Tool: Change element name active labor to labor; update prior uterine incision to Y/N; (version 6.1 applies as of Q1-2013 data)	Update; clarify	Separate pdf
A-4	CCM Data Abstraction Tool - Change to element names: discharge diagnosis &medical procedures/tests; (version 6.1 applies as of Q1-2013 data	Update	Separate pdf
A-5	XML Schema: MassHealth Measures File: update MAT3 & CCM data element name changes (version 6.1 applies as of Q1-2013 data)	Update	Separate pdf
A-6	XML Schema: MassHealth Identifier Crosswalk File - minor correction to text for provider-id (version 6.1 applies as of Q1-2013 data)	Update	Separate pdf
A-7	XML Schema: MassHealth Data Deletion Request File *change made to version label only*	None	Separate pdf
A-8	Data Dictionary: modify all CCM data element definitions/notes/guidelines for abstraction; clarify payer source 98 definitions; (version 6.1 applies as of Q1-2013 data)	Update; clarify	Separate pdf
A-9	MassHealth Specific Measure Calculation Rules: Change to MAT-3 & CCM metrics (version 6.1 applies as of Q1-2013 data)	None	Separate pdf

Footnote – Table headers provide the following information:

- Section – shows the key sections that make up the core contents of the manual.
- Description of change – brief explanation of edits made to text (add/expand; delete, correct, modify).
- Rationale – states reason for change included in this version of the manual
  - ► *New insert = indicates new text not previously included,*
  - ► *Clarify = elaborate to explain current text;*
  - ► *Update = rephrase current text and/or information*
  - ► *None = no substantive change made.*
- Page – lists *start page in each section of the manual begins*; for appendices where changes can be found.

C. Changes to Quarterly Reporting Cycle Requirements

The RY2013 Acute RFA introduced changes to reporting requirements that include modification to existing measure specifications, addition of new measures, collection of all Medicaid payer data. In RY13, changes to data reporting requirements will be phased-in with *Q3-2012 and Q1-2013* data cycles shown below.

Table 1.1 Acute RFA Published Data Submission Timelines

Acute RFA Contract Period	Calendar Year (CY) Quarter	Discharge Data Periods	Submission Deadline	EOHHS Manual Instructions
Rate Year 2012	Quarter 1-2012	Jan 1, 2012 – Mar 31, 2012	Aug 10, 2012	Version 5.0 series
Rate Year 2013	Quarter 2-2012 **Quarter 3-2012*** Quarter 4-2012	April 1, 2012- June 30, 2012 **July 1, 2012 – Sept 30, 2012*** Oct 1, 2012 – Dec 31, 2012	Nov 16, 2012 Feb 15 2013 May 17, 2013	Version 5.2. 6.0 Version 6.0 Version 6.0
Rate Year 2014	**Quarter 1-2013****	**Jan 1, 2013 – Mar 31, 2013****	Aug 16, 2013	*Version 6.1, 6.1a*

**New RY13 data reporting requirements begins. ** Upcoming RY14 data reporting begins.*

Table 1.1 shows the Acute RFA contract period, CY quarter discharge data periods, submission due dates and EOHHS manual instructions that apply to measures reporting for each Rate Year. Each rate year RFA contract period *incorporates a rolling reporting cycle that introduces Qtr1 of a new CY data cycle relevant to the next RFA contract period. This is done to avoid interruption of data reporting cycles between contract transitions. During each RY period, EHS manual versions are subject to change to improve accuracy of reporting specifications. At the start of each RFA contract period (new CY Qtr-1 reporting data), the term 'version TBD" indicates the specifications may not change from previous quarter reporting cycle.* Instead, changes to data reporting specifications may go into effect in a following quarter reporting cycle to allow hospitals ample time to modify data collection tools.

D. Performance Evaluation Periods

Each Hospital's performance is calculated using all quarter data reported for the calendar year (CY) period. In RY2013, Hospitals will report on calendar year 2012 data that will serve as the basis for calculating performance between comparison and previous year. A summary of reporting data periods that apply to performance evaluation periods on each measure set is shown below.

Table 1.2 Performance Evaluation Periods (RY13)

Measure Set Category	Reporting Begins	Previous Year Data	Comparison Year Data	Payment Approach
Maternity (MAT-1, MAT 2a, 2b) (MAT-3)	Q1-2011	CY2011 (Q1 - Q4) Jan 1, 2011- Dec 31, 2011	CY2012 (Q1 - Q4) Jan 1, 2012- Dec 31, 2012	P4P
	Q3-2011	CY2011 (Q3 - Q4) July 1, 2011- Dec 31, 2011	CY2012 (Q1 - Q4) Jan 1, 2012- Dec 31, 2012	P4P
Children's Asthma (CAC 1a, 2a, 3)	Q1-2011	CY2011 (Q1 - Q4) Jan 1, 2011- Dec 31, 2011	CY2012 (Q1 - Q4) Jan 1, 2012- Dec 31, 2012	P4P
Pneumonia (PN-3, PN-6)	Q1-2011	CY2011 (Q1 - Q4) Jan 1, 2011- Dec 31, 2011	CY2012 (Q1 - Q4) Jan 1, 2012- Dec 31, 2012	P4P
Surgical Infection Prevention (SCIP-1a, 2a, 3a)	Q1-2011	CY2011 (Q1 - Q4) Jan 1, 2011- Dec 31, 2011	CY2012 (Q1 - Q4) Jan 1, 2012- Dec 31, 2012	P4P
Health Disparities Composite (HD-2)	Q1-2011	Not applicable	CY2012 (Q1 - Q4) only Jan 1, 2012- Dec 31, 2012	P4P (Use Decile Model)
New Reporting Introduced		Baseline Year	Comparison Year	
Care Coordination Category (CCM-2, CCM-3) Care Coordination (CCM-1)	Q1-2012	CY2012 (Q1 - Q4) Jan 1, 2012- Dec 31, 2012	CY2013 (Q1 – Q4) Jan 1, 2013- Dec 31, 2013	Entire Category P4R (in RY13) P4P (in RY14)
	Q3-2012	CY2012 (Q3 - Q4) July 1, 2012- Dec 31, 2012	CY2013 (Q1 - Q4) Jan 1, 2013- Dec 31, 2013	
Emergency Dept Category (ED-1, ED-2)	RY2014 Begins (Q1-2013)	CY2013 (Q1 - Q4) Jan 1, 2013- Dec 31, 2013	CY2014 (Q1 - Q4) Jan 1, 2014- Dec 31, 2014	P4R (in RY14) P4P (in RY15)
All Medicaid Payer Data (Applies to all Measure sets)	RY2013 Begins (Q1-2012)	CY2012 (Q1 - Q4) Jan 1, 2012- Dec 31, 2012	CY2013 (Q1 – Q4) Jan 1, 2013- Dec 31, 2013	Not relevant

As noted on Table 1.2, In RY13 performance comparison periods for existing reported metrics will use CY12 & CY11 data, but the HD-2 performance will be calculated using CY12 data only. For the new RY13 CCM metrics CY12 data will serve as baseline to set attainment/benchmark thresholds. As of RY13 (with Q1-2012 discharge data) the all Medicaid payer data is required on every measure reported.

Reporting of new ED measures that apply to RY2014 CY2013 data will begin with Q1-2013 reporting cycle. *Table 2.1 also adds a column on payment approach (P4P: pay-for-performance; P4R: pay-for-reporting) that applies to performance evaluation periods for existing and newly introduced measure categories.*

E. Performance Data Calculation Periods (*new sub header insert*)

Each Acute RFA rate year contract defines the calendar year (CY) data period reporting requirement that serves as the basis for calculating measure category performance scores and incentive payments as noted in Table 1.2 above. A summary of the data periods that apply to the hospital reports are noted in table below.

Table 1.3 Hospital Report Data Periods

Acute RFA Rate Year (RY)	Acute RFA Contract Period (HRY cycle)	Quality Measure Reports Period (CY cycle)	Eligible Medicaid HDD Report (Adjusted HRY cycle)
RY2011	10/1/2010 - 9/30/2011	CY2010 (Jan 1, 2010 - Dec 31, 2010)	10/1/2009 - 9/30/2010
RY2012	10/1/2011 - 9/30/2012	CY2011 (Jan 1, 2011 - Dec 31, 2011)	10/1/2010 - 9/30/2011
RY2013	10/1/2012 - 9/30/2013	CY2012 (Jan 1, 2012 - Dec 31, 2012)	10/1/2011 - 9/30/2012
RY2014	10/1/2013 - 9/30/2014	CY2013 (Jan 1, 2013 - Dec 31, 2013)	10/1/2012 - 9/30/2013

As noted in Table 1.3, performance scores for each quality measure category are calculated using calendar year (CY) data periods, whereas RFA payment calculations use hospital rate year (HRY) data periods. Below is information that explains the table column headers.

- **Acute RFA Rate Year**: is the federal fiscal rate year cycle that applies to the RFA contract.
- **Acute RFA Contract Period**: is the federal year cycle between October 1 - September 30 the hospital contracts under (also referred to as the HRY cycle). The Acute RFA contract period may be subject to amendments but this does not affect full CY quality data period that applies to each RY payment.
- **Quality Measure Reports Period**: the MassQEX measure and EHS MassHealth Performance Score reports use the calendar year (CY) discharge data period between January 1st to December 31st that apply under the RY contract period. The MassQEX report provides raw measure rates on each individual measure, whereas the Performance Score report provide results by each quality measure category.
- **Eligible Medicaid HDD Report Period**: the eligible Medicaid hospital discharge data (HDD) report is extracted from hospital reported case mix revenue tapes using ICD codes that apply to each quality measure category. The HDD report uses an adjusted previous hospital rate year (HRY) data period linked to the CY data cycle under the RY contract period. The HDD volume is one component used for payment calculation.

The information in Table 1.3 is intended to assist RFA Hospital Key Quality Contacts in tracking the distinct data periods used to calculate various EOHHS hospital quality performance and payment reports during each Acute RFA rate year contract period. Please contact EOHHS at: Masshealthhospitalquality@state.ma.us if you have questions on the information provided above.

SECTION 2. DATA COLLECTION STANDARDS & GUIDELINES

This section outlines the standards and guidelines for collecting clinical and administrative *data elements* that apply to MassHealth hospital quality measures reporting. Hospitals are required to collect and report data on all measures they are eligible to report on based on patient population mix and type of service offered by the facility.

A. MassHealth Hospital Quality Measure Set. The measures required for RY2013 are summarized below.

Table 2.1 Hospital Quality Performance Measure Set

Measure ID #	Measure Name	Reporting Change Begins	Technical Specifications Manual
	Maternity		
MAT-1	Intrapartum Antibiotic Prophylaxis for Group B Streptococcus	None	EOHHS and TJC
MAT-2a	Perioperative Antibiotics for Cesarean Section – Antibiotic Timing		
MAT-2b	Perioperative Antibiotics for Cesarean Section – Antibiotic Choice		
MAT-3	Elective Delivery ≥37 and <39 completed weeks gestation		
	Pediatric Asthma		
CAC-1a	Children's Asthma Care – Inpatient Use of Relievers	None	NHIQM and EOHHS
CAC-2a	Children's Asthma Care – Inpatient Use of Corticosteroids		
CAC-3	Children's Asthma Care – Home management plan of care		
	Community Acquired Pneumonia		
PN-3b	Blood culture performed in ED prior to first antibiotic received in hospital	None	NHIQM and EOHHS
PN-6	Appropriate antibiotic selection for CAP in immuno-competent patients		
	Surgical Care Infection Prevention		
SCIP-1a	Prophylactic antibiotic received within 1 hour prior to surgical incision	None	NHIQM and EOHHS
SCIP-2a	Appropriate antibiotic selection for surgical prophylaxis		
SCIP-3a	Prophylactic antibiotic discontinued w/in 24 hrs after surgery end time		
	Health Disparities Measure		
HD-2	Clinical Health Disparities Composite	None	EOHHS Only
	Care Coordination Measures (Inpatient)	***NEW***	
CCM-1	Reconciled medication list received by patient at discharge (inpatient)	Added Q3-2012	EOHHS Only
CCM-2	Transition record with data received by patient at discharge (inpatient)	Begins Q1-2012	
CCM-3	Timely transmission of transition record (inpatient)	Begins Q1-2012	
	Emergency Dept Throughput	***NEW***	
ED-1	ED median time – from ED arrival to ED depart for Admitted ED patients	Begins Q1-2013	NHIQM and EOHHS
ED-2	ED median time – admit decision time to ED depart for admitted	Begins Q1-2013	

B. General Data Elements. Hospitals must report all general clinical and administrative data elements that are commonly required to calculate measure assignments. Regardless of which measures are reported, certain data elements (i.e.: ICD codes, payer source, race, ethnicity, patient identifiers, etc.) considered general to each patients care episode must be collected and submitted for every case that falls into the measures initial patient population. The technical specifications that define collection and reporting of data elements for measures in Table 2.1 are contained in the following manuals:

1) **EOHHS Technical Specifications Manual for Acute Hospital Quality Measures –** This document is the primary source of instruction for data collection and reporting on all MassHealth measures required in the Acute RFA. Hospitals must adhere to instructions in the following versions of this manual:
   a. **Version 6.0 -** This version applies beginning with Q3-2012 data reporting.
   b. ***Version 6.1a -*** *This version applies as of Q1-2013 data reporting. See Section 2.D.5 for details*

2) **Specifications Manual for National Hospital Inpatient Quality Measures (versions 4.0a, 4.1**) and relevant Release Notes, Appendix A: ICD Code Tables for PN, SCIP, CAC, ED measures posted on: http://www.qualitynet.org. This document is referred to as the "NHIQM Manual" in this EOHHS manual.

3) **Specifications Manual for the Joint Commission National Quality Core Measures** (versions 2012A, 2012 B**),** Relevant Release Notes and Appendix A: ICD-9-CM Code Table *(11.06.1)* for maternity measures that are posted on: https://manual.jointcommission.org/bin/view/Manual/WebHome. This document is referred to as the "TJC Manual" in this EOHHS manual.

Hospitals are responsible for accessing and adhering to data collection instructions contained in the appropriate versions of specification manuals listed above that apply to RY2013 calendar year quarter discharge periods.

C. MassHealth Identifier Data Elements. Specific administrative data elements that link the Hospitals' patient identifier codes to MassHealth patient identifier codes are required. These data elements are required for EOHHS to calculate incentive payments on clinical health disparities measure category and MassHealth *payer* discharges covered under the Acute RFA contract. The MassHealth identifier data elements include payer source, race/ethnicity, other patient identifiers, that are defined below.

1) **All Medicaid Payer Source.** As of RY13, measures reporting must include all Medicaid payer data for members covered across various MassHealth funded insurance programs as follows:
   a) **Included Medicaid Population**: *members in MassHealth programs where Medicaid is the primary payment source as defined in Table 2.2 below*.
   b) **Excluded Medicaid Population:** *members in programs where Medicaid is **not** the primary payment source as defined in Table 2.2 below*

Table 2.2 Massachusetts Medicaid Payer Source Codes*

Data File Requirement	Medicaid Payer Population Description	Payer Code	Payer Source Codes
INCLUDED Medicaid Population	MassHealth Fee-for-Service (FFS) Payer Codes: ▪ Members enrolled in the Primary Care Clinician Plan (PCCP) or FFS insurance programs *which includes MassHealth Limited*. These payer codes represent services paid primarily by MassHealth on a FFS basis under the Acute RFA contract.	**103**	Medicaid - Includes MassHealth Fee-for-Service (FFS), *and* MassHealth Limited
		104	Medicaid Managed Care - Primary Care Clinician (PCC) Plan
	MassHealth Managed Care Payer Codes: ▪ Members enrolled under one of the six (6) MassHealth Managed Care Organization (MCO) Plans. These payer codes represent services paid primarily by MassHealth under capitation payment arrangements	**108**	Medicaid Managed Care- Fallon Community Health Plan
		110	Medicaid Managed Care- Health New England
		113	Medicaid Managed Care - Neighborhood Health Plan
		118	Medicaid Mental Health/Substance Abuse Plan (Mass Behavioral Health Partnership)
		207	Network Health - Cambridge Health Alliance MCD Program
		208	HealthNet - Boston Medical Center MCD Program
	Other Medicaid Payer Codes: ▪ Members covered by other insurance programs where services are paid primarily by Medicaid under capitation and/or other arrangements. *Refer to Appendix A-8 for updated notes on Healthy Start payer source.*	**119**	Medicaid Managed Care Other (not listed elsewhere)
		178	Children's Medical Security Plan (CMSP)
		98	Healthy Start Program (HSP) *Refer to Appendix A-8 payer source definitions that apply to payer code 98*
EXCLUDED Medicaid Population	Excluded Payer Codes are as follows: • Covered by programs where Medicaid is not the primary payer source. • Covered by programs where Medicaid is secondary or tertiary payer source	**144**	Other Government
			• Dual Eligible status (Covered by Medicare and Medicaid) • Third-party liability (Covered by HMO and/or Commercial plan and Medicaid) • Members age 65 and over (Covered by *Medicaid or* Medicare only) • Commonwealth Care (Covered by the Health Connector)

*Source: Massachusetts Division Health Care Finance Policy (DHCFP) Hospital Inpatient Discharge Data Electronic Records Submission Specs (May 2011) at: http://www.mass.gov/chia/docs/g/chia-regs/114-1-17-inpatient-specs.pdf

As shown in Table 2.2, *the included Medicaid payer population codes are hospital services paid primarily by MassHealth funded insurance programs*. The excluded Medicaid payer population codes should not be included in measures data files. Additional information to assist hospitals with data abstraction on the "payer source" data element is *contained in Appendix A-8 of* this EOHHS manual.

NOTE - The *Medicaid payer source descriptions in Table 2.2 differ from those in the NHIQM manuals*. *Hospitals must modify Medicaid payer source codes, using the instructions and data tools provided in this EOHHS manual, when submitting national NHQIM measures data required for MassHealth reporting* .

2) **Other Patient Identifier Data Elements**. In addition, other administrative data elements are essential to link the Hospitals' patient identifier codes to MassHealth patient identifier codes (i.e.: Hospital Bill Number, MassHealth Member ID Number, Hospital Patient ID Number, other case level identifiers, etc.). These additional data elements are required to identify MassHealth specific discharges for dates of services associated with quarter reporting cycles. These additional administrative data elements including their definitions, valid entry codes, allowable values and required formatting can be found in the data dictionary provided in this EOHHS manual.

3) **Race and Ethnicity Data Elements.** The Massachusetts DHCFP regulation requires all Hospitals to collect and report hospital inpatient data by race/ethnicity effective January 1, 2007. These standards for collection of race/ethnicity data elements have been adapted for MassHealth quality measures reporting to minimize burden on hospitals. These data elements are required to calculate the health disparities composite measure assignment.

   Hospitals must adhere to the Massachusetts data collection standards for reporting on the race/ethnicity data elements, and make appropriate adjustments, per instructions in this manual, when preparing quality measures data files.

   a) **Data Coding Standard.** The standards for collection of race/ethnicity data element codes and allowable values differ from those required by CMS for national hospital quality measures reporting as follows:

      i. **Race:** defines six (6) racial group category codes and allowable values. The NHIQM manuals define four (4) racial group category codes and allowable values as shown in Table 2.3 below.

      ii. **Hispanic Indicator**: defines Hispanic/Latino as a separate group and assigns valid entry codes (Yes/No) but allows the patient to select from a broader list of ethnicity groups. The NHQIM manuals define Hispanic as the sole ethnicity group and assigns similar valid entry codes (Yes/No) as shown in Table 2.3 below.

      iii. **Ethnicity:** defines 33 ethnicity inclusion codes and allowable values using a mapping hierarchy that captures ethnic granularity across the different racial and Hispanic/Latino groups as noted in Table 2.4 below. The NHIQM manual limits ethnicity definition to the Hispanic/Latino group only.

   b) **Data Reporting Standard**: The standard requires hospitals to report all three (3) data elements as follows:
      i. Race - allows up to 3 fields for reporting (Race1; Race2; Race Other- free text);
      ii. Hispanic Indicator - allows one field for reporting (Yes or No);
      iii. Ethnicity - allows up to 3 fields for reporting (Ethnicity1; Ethnicity 2; Ethnicity Other-free text)
      iv. At least one Race, the Hispanic Indicator, and one Ethnicity must be reported per patient as part of the data files.

      Contact the MassQEX customer support help desk if you have questions about race/ethnicity data element reporting requirements.

   c) **Data Accuracy Standard.** Hospitals must ensure that medical records selected for chart validation purposes include proper documentation to verify race/ethnicity data elements against the quality measures data files submitted. As noted in Section 6.B (a) of this EOHHS Manual, all three data elements are validated during the medical chart review process. The chart validation process requires all <u>three</u> data elements (race, Hispanic indicator, ethnicity) be reported per-patient file and be clearly documented in the paper copies of medical records submitted for validation.

Table 2.3
Race/Ethnicity Data Element Code Comparison Chart

Race Code	DHCFP Race Allowable Values
R1	American Indian or Alaska Native
R2	Asian
R3	Black or African American
R4	Native Hawaiian or Pacific islander
R5	White
R9	Other Race
UNKNOW	Unknown/Not Specified

Valid Entry	DCHFP Hispanic Indicator
Yes	Patient is Hispanic, Latino, or Spanish
No	Patient is not Hispanic, Latino, or Spanish

Code	DHCFP Ethnicity Inclusions (33 codes)		
2182-4	Cuban	2108-9	European
2184-0	Dominican	2036-2	Filipino
2148-5	Mexican, Mexican American, Chicano	2157-6	Guatemalan
2180-8	Puerto Rican	2071-9	Haitian
2161-8	Salvadoran	2158-4	Honduran
2155-0	Central American (not specified)	2039-6	Japanese
2165-9	South American (not specified)	2040-4	Korean
2060-2	African	2041-2	Laotian
2058-6	African American	2118-8	Middle Eastern
AMERCN	American	PORTUG	Portuguese
2028-9	Asian	RUSSIA	Russian
2029-7	Asian Indian	EASTEU	Eastern European
BRAZIL	Brazilian	2047-9	Vietnamese
2033-9	Cambodian	OTHER	Other Ethnicity
CVERDN	Cape Verdean	UNKNOW	Unknown/Not specified
CARIBI	Caribbean Island		
2034-7	Chinese		
2169-1	Columbian		

Race Codes	CMS Race Allowable Values
1	White
2	Black or African American
3	American Indian or Alaska Native
4	Asian
5	Native Hawaiian or Pacific Islander
6	RETIRED VALUE (as of 7-01-05)
7	UTD: Unable to determine (not stated documented, unwilling to provide)

Valid Entry	CMS Ethnicity Value
Yes	Patient is of Hispanic ethnicity or Latino
N o	Patient is not of Hispanic ethnicity or Latino or unable to determine from medical record documentation

Code	CMS Hispanic Ethnicity Inclusions
None	Cuban
None	Chicano
None	Mexican
None	Puerto Rican
None	Other Spanish culture origin
None	South or Central American
None	Spanish origin
None	Hispanic/Latino
None	Black-Hispanic

The contents of Table 2.3 were created using the following resources:

- Massachusetts DHCFP Hospital Inpatient Discharge Data Electronic Record Submission Specifications (May 2011) which provides additional information on race/ethnicity data coding requirements available at: http://www.mass.gov/chia/docs/g/chia-regs/114-1-17-inpatient-specs.pdf

- The CMS data elements listed in Table 2.3 are published in the Alphabetical Data Dictionary of the NHQIM Manuals which provides detailed information on race/ethnicity data coding requirements available at http://www.qualitynet.org/. The Hispanic ethnicity inclusions were updated in NHQIM (v3.0) as of Q1-2012.

NOTE -- Table 2.3 is provided for the purposes of illustrating the specific differences in codes & allowable values only and **not to** be used as a crosswalk for meeting EOHHS measures data file reporting or chart validation requirements.

Table 2.4
Hierarchy of Ethnicity Codes, Inclusions and Subcategories

Code	Ethnicity Inclusions	Ethnicity Subcategories
2182-4	Cuban	
2184-0	Dominican	
2148-5	Mexican, Mexican American, Chicano	Mexicano, Mexican American, Chicano, La Raza, Mexican American Indian
2180-8	Puerto Rican	
2161-8	Salvadoran	
2155-0	Central American (not specified)	Costa Rican, Nicaraguan, Panamanian, Central American Indian, Belize
2165-9	South American (not specified)	Argentinean, Bolivian, Chilean, Ecuadorian, Paraguayan, Peruvian, Uruguayan, Venezuelan, South American Indian, Criollo, Guyana
2060-2	African	Botswanan, Ethiopian, Liberia, Namibian, Nigerian, Zairean, African also includes Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Cote d'Ivorie, Djibouti, Egypt, Equatorial Guinea, Eritrea, Gabon, Gambia, Ghana, Guinea, Guineas-Bissau, Kenya, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Niger, Reunion, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia and Zimbabwe
2058-6	African American	
AMERCN	American	
2028-9	Asian	Bangladeshi, Bhutanese, Burmese, Hmong, Indonesian, Madagascar, Malaysian, Maldivian, Nepalese, Pakistani, Singaporean, Sri Lankan, Taiwanese, Thai
2029-7	Asian Indian	
BRAZIL	Brazilian	
2033-9	Cambodian	
CVERDN	Cape Verdean	
CARIBI	Caribbean Island	Barbadian, Dominica Islander, Jamaican, Trinidadian, Tobagoan, West Indian
2034-7	Chinese	
2169-1	Columbian	
2108-9	European	English, French, German, Irish, Italian, Scottish. European also includes Greek and Spanish
2036-2	Filipino	
2157-6	Guatemalan	
2071-9	Haitian	
2158-4	Honduran	
2039-6	Japanese	
2040-4	Korean	
2041-2	Laotian	
2118-8	Middle Eastern or North African	Assyian, Egyptian, Iranian, Iraqi, Lebanese, Palestinian, Syrian, Afghanistani, Israeli. Middle Eastern also includes: Algerian, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Sudanese, United Arab, Emirates and Yemen
PORTUG	Portuguese	Azorean, Canarian
RUSSIA	Russian	
EASTEU	Eastern European	Armenian, Polish. Eastern European also includes: Albanian, Azerbijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary ,Latvia, Lithuania, Moldova, Macedonia, Montenegro, Romania, Serbia, Slovakia, Slovenia, and Ukraine
2047-9	Vietnamese	
OTHER	Other Ethnicity	
UNKNOW	Unknown/Not specified	

The contents of Table 2.4 was extracted from the following resource:

- The Massachusetts DHCFP Mapping of Ethnicity Hierarchy (2006) is a supplement to the DHCFP Race/Ethnicity codes noted under Table 2.3 and intended to assist with mapping ethnicity for racial groups.

- Refer to the DHCFP website for a complete list of additional codes that apply to select ethnicity subcategories column above: http://www.mass.gov/chia/docs/g/chia-regs/114-1-17-hierarchy-ethnicity.pdf

D. Data Collection & Reporting Tools

This EOHHS manual provides the following resources to assist in collecting and reporting MassHealth specific patient-level information on all measures listed in Table 2.1.

1) **Data Dictionary.** This EOHHS manual includes a data dictionary **(Appendix A-8**) which provides detailed definitions on the required clinical and administrative data elements, format, allowable values, and data abstraction sources to assist in preparing all MassHealth patient-level data files. The dictionary contains the full set of clinical and administrative data elements pertaining to the MassHealth specific measures (MAT, CCM) not published in CMS national hospital quality reporting manuals. It also includes definitions for all administrative patient-level identifier data elements required to supplement MassHealth payer files for the nationally reported hospital measures (PN, SCIP, CAC, ED) data.

   Appendix A-8 should be used in conjunction with measure specifications in Section 3 of this EOHHS manual. Hospitals must use version 5.0 data dictionary when reporting Q1-2012 and Q2-2012 discharge data, version 6.0 dictionary (effective with Q3-2012 data), and *version 6.1 effective with Q1-2013 data reporting.*

   Data dictionary definitions included in the EOHHS manual were developed through consultation with The Joint Commission and the Iowa Foundation for Medical Care. The 'Specifications Manual for NHIQM' is the collaborative effort of the Centers for Medicare and Medicaid Services (CMS) and The Joint Commission (TJC) which is periodically updated by CMS and TJC. Users of the 'Specifications Manual for NHIQM' are responsible for updating their software and associated documentation based on the nationally published manual production timelines.

2) **Data Abstraction Tools.** This EOHHS manual includes several paper data abstraction tools to facilitate standardized collection and reporting of MassHealth specific maternity and care coordination measures in **Appendix A-1 to A-4**. These data abstraction tools are designed to be used in conjunction with the measure specifications, algorithm flowcharts and data dictionary provided in this manual.

   Appendix A-1 to A-4 should be used in conjunction with revised measure specifications in Section 3 *and data dictionary* of this EOHHS manual. Hospitals must use version 5.0 abstraction tools when reporting Q1-2012 and Q2-2012 discharge data, version 6.0 (effective with Q3-2012 data)*and version 6.1 effective with Q1-2013 data reporting.*

3) **XML File Format.** This EOHHS manual includes several XML schema layouts (**Appendix A-5 to A-7),** in excel worksheets, to assist hospitals in standardized formatting of electronic files for MassHealth quality measures data reporting. All data files must be collected using the Extensible Markup Language (XML) file format consistent with data transmission standards and guidelines provided in the EOHHS and NHIQM Manuals. Adherence to XML file format is important to decreasing variation in data collection and critical to meeting compliance with portal specifications. Failure to comply with the technical format requirements described in this manual will result in data files not being received.

   Appendix A-5 to A-7 should be used in conjunction with revised measure specifications in Section *and data dictionary* of this EOHHS manual. Hospitals must use version 5.0 XML schemas when reporting Q1-2012 and Q2-2012 discharge data reporting, version 6.0 (effective with Q3-2012 data) *and version 6.1 effective with Q1-2013 data reporting.*

4) **Measure Calculation Rules.** This EOHHS manual also includes detailed information on how the MassHealth specific measure observed rates for maternity and care coordination are calculated in **Appendix A-9.** *Refer to Section 2.D.5 for details on versions that apply to quarter reporting cycles*. Measure calculation rules of the health disparities composite measure are in Section 7 of this manual. Measure calculation rules for the nationally reported measures required by MassHealth can be found in the 'NHQIM Manuals' versions noted under Section 2.B of this manual.

Contact the MassQEX Help Desk, listed in Section 5.E of this manual, if you have questions about which versions of the data collection and reporting tools listed above apply to RY2013 quarter reporting requirements.

5) Archive of Rate Year EOHHS Manual Versions *(new sub-header insert)*

The changes to EOHHS manual versions are relevant to all MassHealth quality measures reporting and focus on the following:

a) **MassHealth Specific Metrics**: Changes focus on changes to all maternity & care coordination measures data collection and reporting tools.
b) **Nationally Reported Metrics**. Changes focus on modifications that apply to MassHealth reporting in Section 3, XML Crosswalk/Deletion and dictionary.

A summary of the EHS manual version tools that apply to previous and comparison year calendar year quarter data cycles are provided in Table below.

Table 2.5 Summary of Changes to Rate Year EOHHS Manual Versions*

EOHHS Manual (Publish Date)	Manual version	Calendar Year (CY) Data Period	Reporting Change Begins	Measure Description (Updates)	Abstraction Tools (Updates)	XML Schemas (Updates)	Data Dictionary (Updates)	Measure Calculation Rule (Updates)
RY2012 (Sept 6, 2011)	Version 5.0 →	Jan 1 – Dec 31, 2011 Add CY12 instruction (A-11 Medicaid payer)	Q3-2011 Q4-2011	MAT Descriptions MAT Flowcharts CCM Descriptions CCM Flowcharts NHQIM instruction	A-1: R/E Code Charts A-2: MAT-1 A-3: MAT-2a,2b A-4: new MAT-3 A-5: new CCM	A-6: MH Specific Metrics A-7: Crosswalk file A-8:Deletion file	A-9:Dictionary Instruction • new MAT-3 • new CCM • expand Payer Source	A-10: MH Metric Rules • new MAT-3 • new CCM
RY2012 (Nov 21, 2011)	Version 5.1 →	Add CY12 instruction (A-12 Payer sampling)	Q3-2011 Q4-2011	No change (use v 5.0)	No change (use v 5.0)	No change (use v 5.0)	No change (use v 5.0)	No change (use v 5.0)
RY2012 (Jan 25, 2012)	Version 5.2 →	A-11 & A-12 release notes effective→	Q1-2012 Q2-2012	MAT3: Flowchart (use 5.2) CCM: Flowchart (use 5.2) NHQIM: discontinue PN4, 5c	No change (use v 5.0)	No change (use v 5.0)	No change (use v 5.0)	No change (use v 5.0)
RY2013 (Aug 22, 2012)	Version 6.0 →	Jan 1 – Dec 31, 2012 (Add RY14 instruction)	Q3-2012 Q4-2012	MAT Descriptions MAT Flowcharts CCM Descriptions CCM Flowcharts NHQIM: add ED metric	A-1: MAT1 A-2: MAT2a,2b A-3: MAT-3 A-4: CCM	A-5: MH Metrics A-6: Crosswalk A-7:Deletion	A-8: Dictionary Instruction • MAT • all CCM • MH records	A-9: MH Metric Rules • MAT • CCM (Appendix numbering re-adjusted)
RY2013 (Feb 8, 2013)	Version 6.1 →	(Add CY13 instruction)	Q1-2013	*MAT Descriptions* *MAT Flowcharts* *CCM Descriptions* *CCM Flowcharts* NHQIM: edits	*A-1: MAT1* *A-2: MAT2a,b* *A-3: MAT3* *A-4: CCM*	*A-5: MH Metrics* *A-6: Crosswalk* *A-7:Deletion*	A-8: Dictionary Instruction • *MAT* • *all CCM* • *MH record*	A-9: MH Metric Rules • *MAT* • *CCM*
RY2013 (March 22, 2013)	6.1.a →	No change	Q1-2013	*CCM-2 flowchart correction*	No change (use v 6.1)	No change (use v 6.1)	No change (use v 6.1)	No change (use v 6.1)
RY2014 (Date TBD)	Version TBD	Jan 1 – Mar 31, 2013	△TBD	△TBD	△TBD	△TBD	△TBD	△TBD

Table Legend: how to read the table contents

- EOHHS Manual - refers to Rate Year (RY) quality reporting relevant to the Acute RFA contract period. Publish date refers to date posted on EHS website
- Manual Version - refers to version of specifications instruction that applies to RY calendar year data period & change to reporting cycles.
- Calendar Year Period - refers to the calendar year discharge data period (Jan 1- Dec 31) reported under the RY payment period (ex: CY11 data reporting applies to RY12 payments)
- Reporting Change Begins - refers to CY quarter data changes to RY manual version specifications start.
- Measure Description – refers to updates made in Section 3 (measure descriptions, flowcharts, etc.) that apply in the RY manual version.
- Abstraction Tools – refers to updates made to appendix data abstraction tool listed that apply effective when CY quarter reporting changes begin in the RY manual version
- XML Schemas – refers to updates made to appendix XML schemas listed that apply as of CY quarter data cycle in the RY manual version.
- Data Dictionary - refers to updates made that apply effective when CY quarter reporting changes begin in the RY manual version
- Measure Calculation Rule – refers to updates that apply effective when CY quarter reporting changes begin in the RY manual version

Important Note: When RY manual measure descriptions & data tools have not changed, then a reference to the version that does apply is entered in parenthesis (ex: all v 5.0 series version entries).

E. Data Completeness Requirements

The Acute RFA contract stipulates that hospitals must comply with data completeness requirements to be eligible for incentive payments. Data completeness is defined as the submission of measures data that comply with all technical data collection and format guidelines published in this EOHHS Manual. In order to calculate a hospitals performance on each measure set various sources of information are required to determine accuracy and reliability.

1) **Data Completeness Requirements.** For the purposes of calculating measure set assignments, all of the following data components are required for each quarter reporting period:

   a. **Electronic Data Files:** submit patient-level data on all MassHealth cases [that meet inclusion criteria for each measure population that conforms to XML format, for the quarter discharge data period being reported;

   b. **On-line ICD Data Entry Form:** enter all aggregate ICD patient population data via the portal, which supplements the electronic file uploads for the quarter discharge data period being reported;

   c. **Medical Records Data**: submit requested medical chart documentation associated with upload of electronic files for data validation purposes for the quarter discharge data period being reported.

   d. **Timeliness of Data.** All data components listed above must be received by the quarter submission due dates listed in the Acute RFA and Section 6.A(6) of this EOHHS manual.

   Failure to timely submit all data components listed above in the formats required by EOHHS, during each quarter reporting cycle, will render the hospital ineligible for some or all payments.

   Effective with RY2014 data reporting, EOHHS will require hospitals to complete and submit a "Data Accuracy and Completeness Attestation Form". This form must be signed by the hospitals chief executive officer at the beginning of each Acute Hospital RFA rate year. EOHHS will post updates on availability of these forms on the MassQEX website homepage.

2) **Data Reliability Definition.** The data used to calculate a hospitals performance on each measure and measure sets need to be both accurate and complete as follows:

   a. Accurate data is defined as data on all cases that meet the specific inclusion criteria for eligible patients, which includes data that is collected and abstracted from the patients medical record and other administrative data. If the data are not collected or abstracted from records accurately then that data will not be reliable.

   b. Incomplete data is defined as data that is selectively collected or because the hospital leaves out eligible cases in submitted data files. If the hospital submits accurate data but leaves out eligible cases in data files, and vice versa, then those data are not reliable. Data that are not reliable raise concerns for determining hospital performance.

   c. **Missing and Invalid Data.** Missing data refers to data elements that have no values present for the records submitted whereas, invalid data refers to data element values that fall outside the range of allowable values defined by the measure specifications manuals. Reducing missing and invalid data is critical to minimizing the bias for a measure rate because this data:
      - can not be included in the calculation of the observed measure rate;
      - may not accurately reflect the observed measure rate for the patient population;
      - may contribute to mismatches between data elements that can affect the overall validation score; and
      - may result in measure failure.

   All abstraction of data must provide an answer to every required data element that applies to each measure in a measure category.

SECTION 3. MASSHEALTH MEASURES SPECIFICATIONS

3A. Intrapartum Antibiotic Prophylaxis for Group B Streptococcus (MAT-1)

Description: Pregnant women who are eligible for and receive intrapartum intravenous antibiotic prophylaxis for Group B Streptococcus (GBS).

Rationale: Failure to provide prophylaxis to mothers of all ages who have screened positive for GBS or have other risk factors for GBS significantly increases the chances of GBS infection to the newborn and the risk of infant mortality. Administering timely antibiotic prophylaxis, consistent with current evidenced-based practice, decreases the risk of infant infection, complications, readmissions, morbidity, and mortality.

Type of measure: Process measure

Improvement noted as: An increase in the rate.

Numerator statement: All eligible patients who receive intrapartum intravenous antibiotic prophylaxis for GBS.

Included population: Not applicable
Excluded population: None
Data Elements:

- Antibiotic Administration Date
- Antibiotic Administration Time
- Antibiotic Name for GBS Prophylaxis
- Delivery Date
- Delivery Time
- Intrapartum Antibiotics
- Maternal Allergies

Denominator statement: All patients who deliver a live infant.

Included population: ICD-9 principal and secondary diagnosis codes for live births during the admission (as defined in Appendix A: ICD-9-CM Code Tables 11.01, 11.02, 11.03, 11.04 of the Specifications Manual for Joint Commission National Core measures version noted in Section 2.A of this manual).
This population must be further defined on the basis of the following criteria.

- Previous infant with GBS disease,
- GBS bacteriuria during current pregnancy,
- Screened and tested positive for vaginal and rectal GBS colonization at 35-37 weeks gestation or within 5 weeks prior to birth, or
- Unknown GBS status (culture not done, incomplete or results unknown) and any of the following:
    - Delivery at < 37 weeks gestation
    - Amniotic membrane rupture ≥18 hours, or
    - Intrapartum temperature ≥100.4° F (38.0° C)

Excluded populations:

- Less than 8 years of age
- Greater than or equal to 65 years of age
- Length of stay > 120 days
- Patients enrolled in a clinical trial during the hospital stay relevant to the measure population,
- Patient screened negative for GBS at 35-37 weeks gestation or within 5 weeks prior to birth,
- Patients delivering via Cesarean section prior to onset of labor with intact membranes,
- Patients who received an intravenous antibiotic for any reason other than GBS prophylaxis within 24 hours prior to delivery, and
- Deliveries resulting in stillbirths

Data Elements:

- Amniotic Membrane Rupture 18 or More Hours

- Cesarean Delivery
- Clinical Trial
- GBS Bacteriuria
- GBS Screening
- Gestational Age < 37 Weeks
- Intrapartum Temperature
- IV Antibiotics (non-GBS) – MAT-1
- Live Newborn
- Previous Infant with Invasive GBS

Risk adjustment: No

Data collection approach: Retrospective data sources for required data elements include administrative and medical records. Data is collected on the last administration of the intrapartum prophylactic antibiotic. Choices for the data element Antibiotic Name for GBS Prophylaxis are limited to Ampicillin, Cefazolin, Clindamycin, Penicillin, Vancomycin, or Other. Refer to data abstraction tool (**Appendix A-1)** and data dictionary (A**ppendix A-8)** of this manual for detailed instructions.

Data accuracy: Women may be receiving antibiotics at the time of delivery for a variety of reasons besides GBS prophylaxis. Hospitals may wish to pay particular attention to documenting these reasons, so that practice that deliberately differs from standards for good clinical reasons is not confused with failure to follow standards where they are applicable.

Measure analysis suggestion: Consideration may be given to relating this measure to antenatal screening and postnatal compliance with overall GBS guidelines. The process-owners for intrapartum GBS prophylaxis, as assessed in this measure, may include clinicians and support staff on the labor and delivery unit as well as the obstetrical admitting area. Opportunities may exist in any of these arenas which, when addressed jointly, can generate true process improvement. Attention should be given to possible decreases in infection rate and infant mortality, specifically changes over time for a total population and in underserved racial and ethnic groups.

Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the calculation rules in ***Appendix A-9*** of this manual that apply to this measure.

Selected References:

- American Academy of Pediatrics (1997). Committee on Infectious Diseases and Committee on Fetus and Newborn. Revised guideline for prevention of early-onset group B streptococcus (GBS) disease. Pediatrics 1997;99:489-96.
- American College of Obstetricians and Gynecologists (2011). Prevention of early-onset group B streptococcal disease in newborns. Obstet Gynecol 2011;117:1019-27.
- American College of Obstetricians and Gynecologists (2002). Prevention of early-onset group B streptococcus in newborns. Obstet Gynecol 2002;100:1405-12
- Center for Disease Control and Prevention. 2010 Revised Guidelines for Prevention of Group B Strep. MMWR Weekly Report, Vol. 59, no RR-10, Nov.19, 2010. Accessed http://www.cdc.gov/mmwr/
- Centers for Disease Control and Prevention (2008). Active Bacterial Core Surveillance Report, Emerging Infections Program Network, Group B Streptococcus, 2007-provisional. Available via: http://www.cdc.gov/ncidod/dbmd/abcs/survreports/gbs07.pdf
- Centers for Disease Control and Prevention (2004). Diminishing racial disparities in early-onset neonatal Group B streptococcal disease – United States, 2000-2003. MMWR 2004;53:502-05.
- Centers for Disease Control and Prevention. Early-onset and late-onset neonatal Group B streptococcal disease – United States, 1996-2004. MMWR 2005;54:1205-08.
- Centers for Disease Control and Prevention. Perinatal Group B streptococcal disease after universal screening recommendations – United States, 2003-2005. MMWR 2007;56:701-05.
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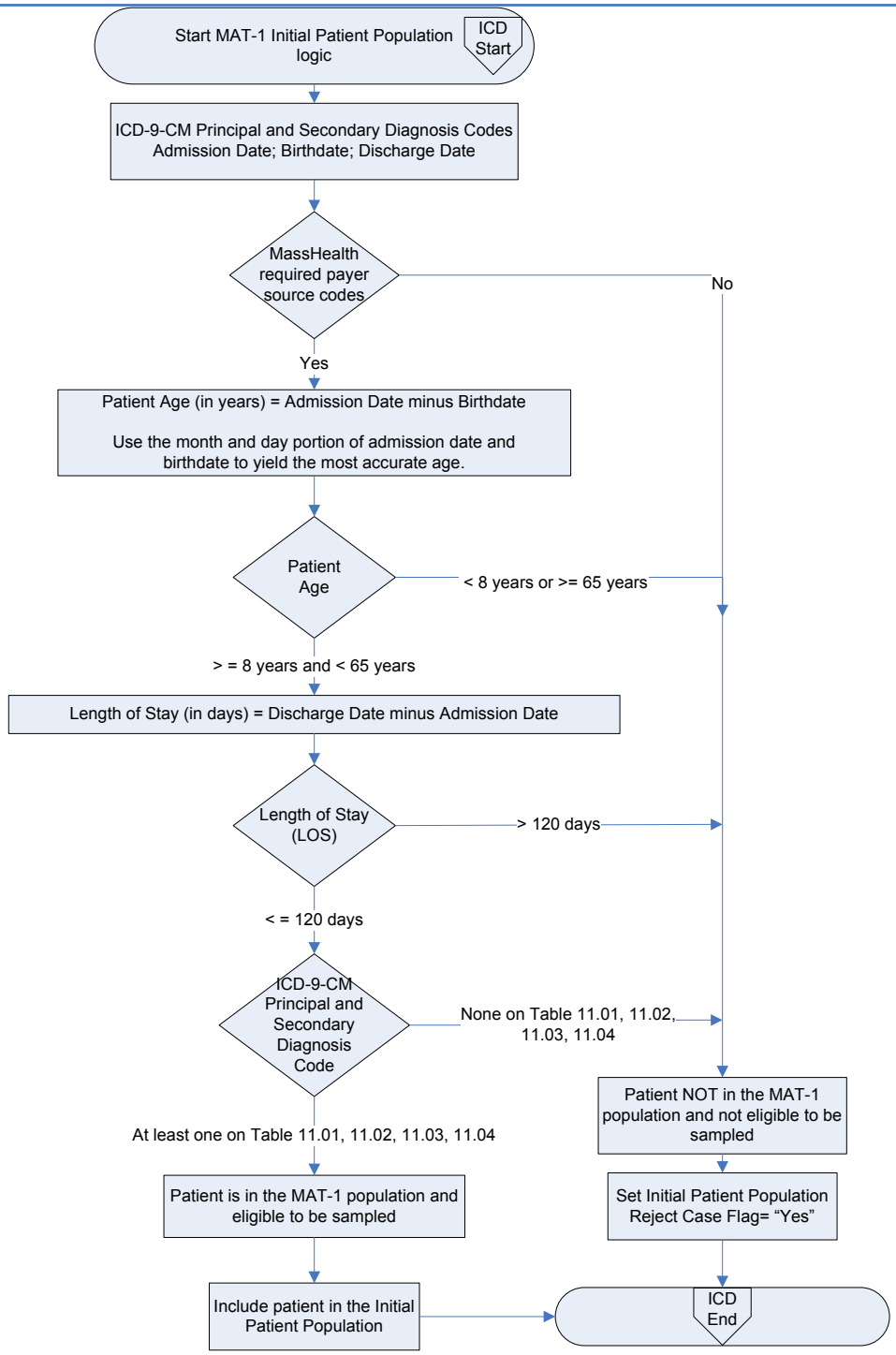
- Centers for Disease Control and Prevention. Trends in Perinatal Group B Streptococcal Disease – United States, 2000-2006. MMWR 2009;58:109-12.
- Colombo D.F., Lew, J.L., Pedersen, C.A., Johnson J.R., Fan-Havard P. (2005). Optimal timing of ampicillin administration to pregnant women for establishing bactericidal levels in the prophylaxis of Group B Streptococcus,. *American Journal of Obstetrics and Gynecology*, 194**,** p. 466-70.
- Larsen JW, Sever JL. (2008). Group B Streptococcus and pregnancy: a review**,** *Amer Jnl Obstetrics and Gynecology*, p.440-50.
- Matteson, K.A., Lievense SP, Catanzaro, B, Phipps, MG. (2008). Intrapartum group B streptococci prophylaxis in patients reporting a penicillin allergy, *Journal of Obstetrics and Gynecology*, 111(2):356-64.
- Phares C.R., Lynfield R., Farley M.M., et al. (2008). Epidemiology of invasive group B streptococcal disease in the United States, 1999-2005., *Journal American Medical Association*, 299(17), p.2056-2065.
- Riley L., Appollon, K., Haider S, Chan-Flynn S., Cohen A, Ecker, J., Rein M, Lieberman, E. (2003). Real world compliance with strategies to prevent early-onset group B streptococcal disease. *Journal of Perinatology* 23(4), p.272-7.

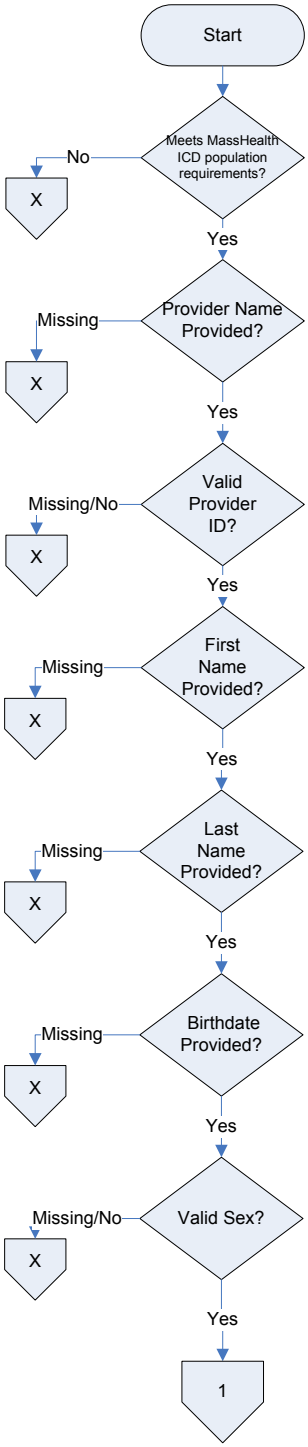
Initial Patient Population Algorithm
Intrapartum Antibiotic Prophylaxis for GBS (MAT-1)



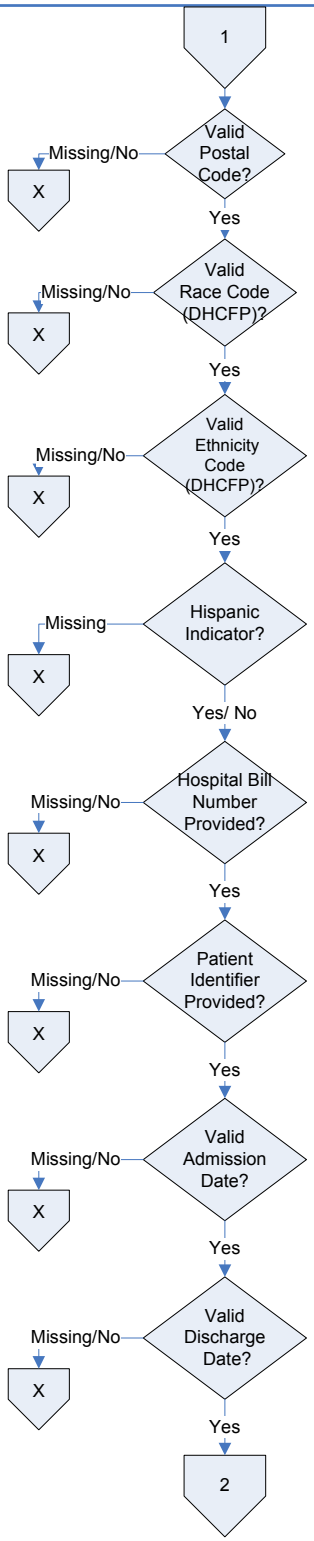
Intrapartum Antibiotic Prophylaxis for Group B Streptococcus (MAT-1)

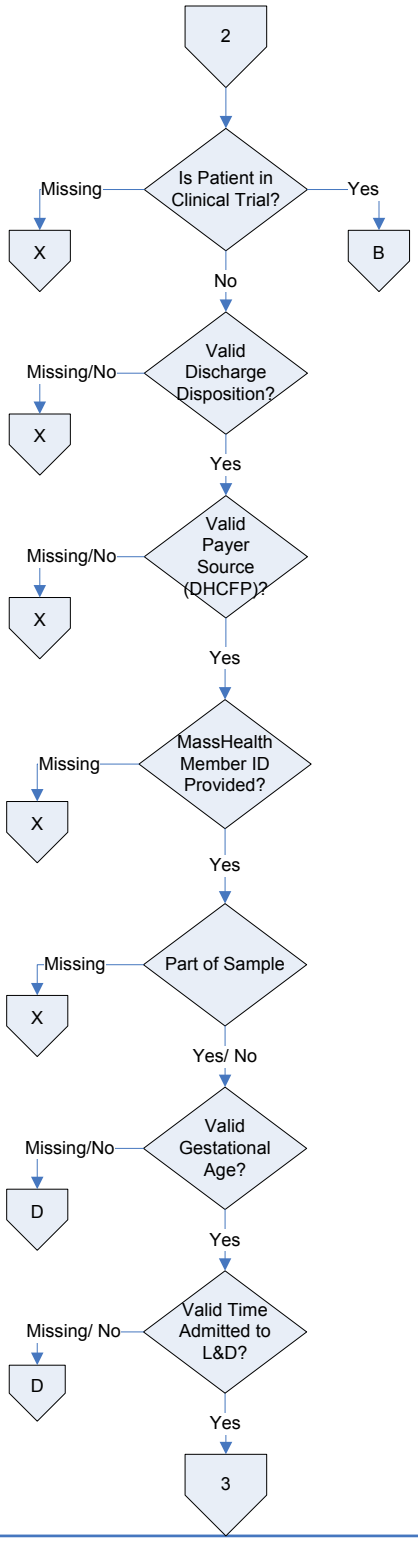
***Numerator:** All eligible patients who receive intrapartum antibiotic prophylaxis for GBS

***Denominator:** All patients who deliver a live infant

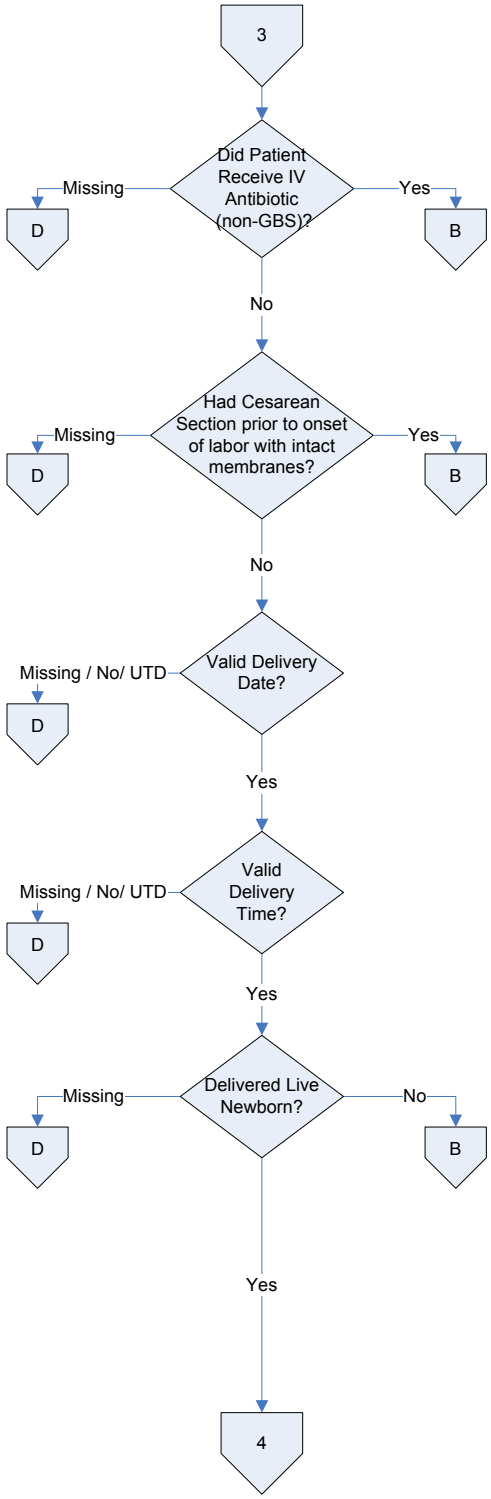


Intrapartum Antibiotic Prophylaxis for Group B Streptococcus (MAT-1)



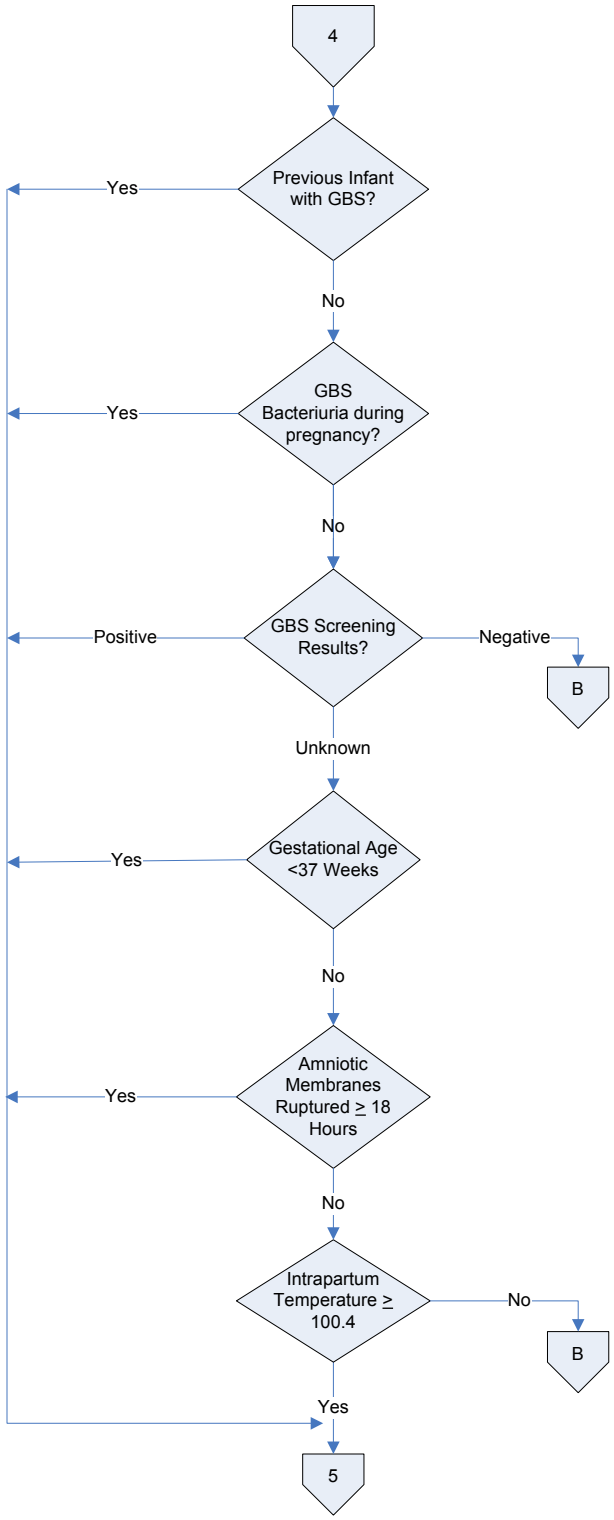

2
Is Patient in Clinical Trial?
Missing
X
Yes
B
No
Valid Discharge Disposition?
Missing/No
X
Yes
Valid Payer Source (DHCFP)?
Missing/No
X
Yes
MassHealth Member ID Provided?
Missing
X
Yes
Part of Sample
Missing
X
Yes/ No
Valid Gestational Age?
Missing/No
D
Yes
Valid Time Admitted to L&D?
Missing/ No
D
Yes
3

Intrapartum Antibiotic Prophylaxis for Group B Streptococcus (MAT-1)

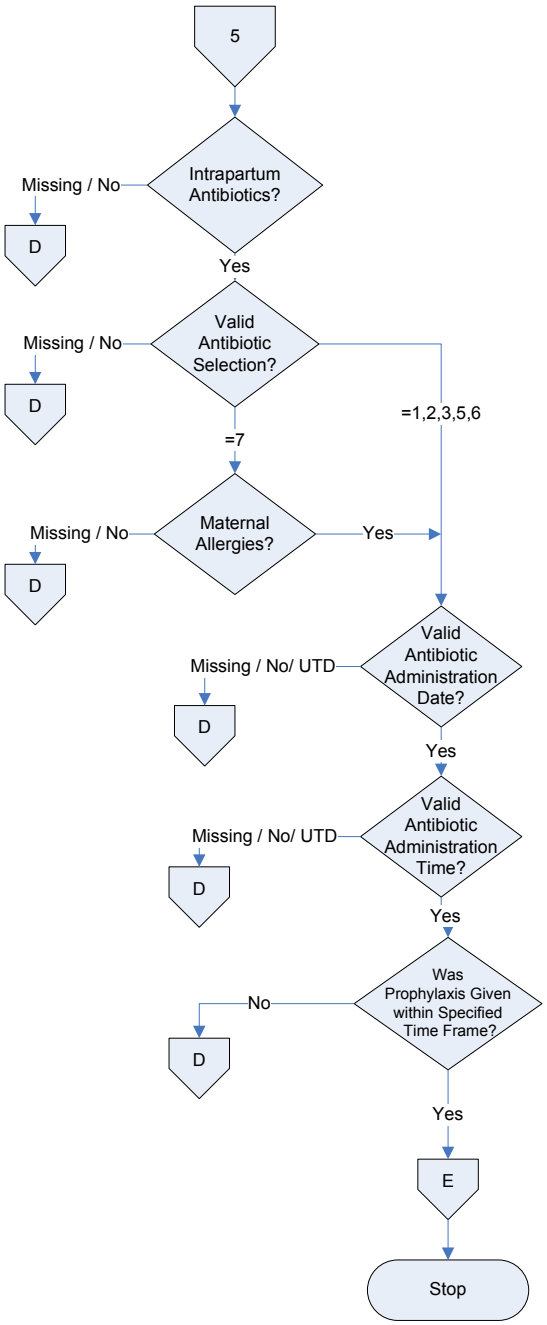


Note:
Infant delivery date cannot be prior to the mother's admission date or after the discharge date.

Intrapartum Antibiotic Prophylaxis for Group B Streptococcus (MAT-1)



Intrapartum Antibiotic Prophylaxis for Group B Streptococcus (MAT-1)



Note:
If the antibiotic prophylaxis is administered prior to infant delivery time, the case will be assigned to Category E.

X

Review Ended
Not in Measure Population
Missing or Invalid Data
Case will be Rejected

B

Review Ended
Not in Measure Population
Excluded from Numerator and Denominator

D

Review Ended
In Measure Population
Excluded from Numerator
Included in Denominator

E

Measure Met
In Measure Population
Included in Numerator and Denominator

3B. Perioperative Antibiotics for Cesarean Section – Antibiotic Timing (MAT-2a)

Description: Patients undergoing Cesarean section who receive prophylactic intravenous antibiotics within one (1) hour prior to surgical incision.

Rationale: Delivery of prophylactic antibiotics, consistent with current evidence-based practice, within an hour prior to incision time is a well-established quality and safety practice. It reduces the risk of morbidity to the mother and decreases the overall cost of care by avoiding the expense of treating postoperative infections. Over 80 well-designed studies have documented the efficacy of prophylactic antibiotics in high-risk Cesarean sections (Smaill, F. and Hofmeyer, G.J. 1999; Hopkins, L and Smaill, F, 1999).

The American College of Obstetricians and Gynecologists recommends this practice both for high-risk and other Cesarean deliveries. An even larger body of evidence supports the use of prophylactic antibiotics for broad classes of surgery, including operative deliveries (Dellinger et al, 1994). The larger body of evidence is generally applicable to Cesarean delivery with the notable difference that an infant is being born as the mother is undergoing surgery.

Traditionally, many practitioners have preferred to defer administration of antibiotics until the time of delivery in order to avoid introducing unnecessary medications into the newborn's system, while others have found it safe and effective to administer the antibiotics shortly before the surgical incision. Current evidence and guidelines support administration prior to surgical incision.

Type of measure: Process measure

Improvement noted as: An increase in the rate.

Numerator statement: All eligible patients who receive prophylactic intravenous antibiotics within one (1) hour prior to surgical incision.

Included population: Not applicable

Excluded population: None

Data Elements:

- Antibiotic Administration Date
- Antibiotic Administration Time
- Cesarean Section Incision Time
- Cesarean Section Start Date
- IV Antibiotic for Cesarean Section Prophylaxis

Denominator statement: All patients undergoing Cesarean section.

Included population: An ICD-9-CM principal procedure code for Cesarean section that include 74.0 (classical Cesarean section), 74.1 (low cervical Cesarean section), 74.2 (extraperitoneal Cesarean section), 74.4 (Cesarean section of other specified type) or 74.99 (other Cesarean section of unspecified type).

Excluded population:

- Less than 8 years of age
- Greater than or equal to 65 years of age
- Length of stay > 120 days
- Patients enrolled in a clinical trial during the hospital stay relevant to the measure population,
- Patients with a confirmed or suspected infection during the birth hospitalization prior to the Cesarean section procedure or rupture of amniotic membranes 18 hours or greater,
- Patients who received an intravenous antibiotic within 24 hours prior to surgery except prophylaxis for GBS, which is not a reason for exclusion, and
- Patients who undergo other surgeries within 3 days before or after the Cesarean section during this hospitalization.

Data Elements:

- Clinical Trial
- Infection Prior to Cesarean Section
- Other Surgeries
- IV Antibiotics (non-GBS)

Risk adjustment: No

Data collection approach: Retrospective data sources for required data include administrative and medical records. Data is collected on the perioperative antibiotic for surgical prophylaxis that is administered within the targeted time frame. Refer to MAT-2a,2b data abstraction collection tool in ***Appendix A-2*** and data dictionary ***Appendix A-8*** of this manual for detailed instructions.

Data accuracy: Women may be receiving antibiotics at the time of delivery for a variety of reasons besides prophylaxis against postoperative infections. Hospitals may wish to pay particular attention to documenting these reasons, so that practice that deliberately differs from standards for good clinical reasons is not confused with failure to follow standards where they are applicable.

Measure analysis suggestion: Improvement in compliance rates should be accompanied with decreases in the rate of postoperative infections.

Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the calculation rules in ***Appendix A-9*** of this manual that apply to this measure.

Selected References:

- All bibliography for the MAT 2a, 2b measures are listed under the MAT 2b selected references description.

3C. Perioperative Antibiotics for Cesarean Section – Antibiotic Choice (MAT-2b)

Description: Patients undergoing Cesarean section who receive appropriate prophylactic intravenous antibiotics for surgical prophylaxis.

Rationale: A goal of prophylaxis with antibiotics is to use an agent that is safe, cost-effective, and has a spectrum of action that covers most of the probable intraoperative contaminants for the operation.

Type of measure: Process measure

Improvement noted as: An increase in the rate.

Numerator statement: All eligible patients who receive recommended intravenous antibiotics for Cesarean Section surgical prophylaxis.

Included population: Not applicable

Excluded population: None

Data Elements:

- Antibiotic Name for Cesarean Section Prophylaxis
- IV Antibiotic for Cesarean Section Prophylaxis
- Maternal Allergies

Denominator statement: All patients undergoing Cesarean section.

Included population: An ICD-9-CM principal procedure code for Cesarean section that include 74.0 (classical Cesarean section), 74.1 (low cervical Cesarean section), 74.2 (extraperitoneal Cesarean section), 74.4 (Cesarean section of other specified type) or 74.99 (other Cesarean section of unspecified type).

Excluded population:

- Less than 8 years of age
- Greater than or equal to 65 years of age
- Length of stay > 120 days
- Patients enrolled in a clinical trial during the hospital stay relevant to the measure population,
- Patients with a confirmed or suspected infection during the birth hospitalization prior to the Cesarean section procedure or with rupture of amniotic membranes 18 hours or greater,
- Patients who received an intravenous antibiotic within 24 hours prior to surgery except prophylaxis for GBS, which is not a reason for exclusion, and
- Patients who undergo other surgeries within 3 days before or after the Cesarean section during this hospitalization.

Data Elements:

- Clinical Trial
- Infection Prior to Cesarean Section
- Other Surgeries
- IV Antibiotics (non-GBS)

Risk adjustment: No

Data collection approach: Retrospective data sources for required data include administrative and medical records. Data is collected on the perioperative antibiotic for surgical prophylaxis that is administered within the targeted time frame. Choices for the data element Antibiotic Name for Cesarean Section Prophylaxis are limited to Ampicillin, Cefazolin, Gentamicin, or Other. Refer to MAT-2a,2b data abstraction collection tool in ***Appendix A-2*** and data dictionary ***Appendix A-8*** of this manual for detailed instructions.

Data accuracy: Women may be receiving antibiotics at the time of delivery for a variety of reasons besides prophylaxis against postoperative infections. Hospitals may wish to pay particular attention to documenting these reasons, so that practice that deliberately differs from standards for good clinical reasons is not confused with failure to follow standards where they are applicable.

Measure analysis suggestion: Improvement in compliance rates should be accompanied with decreases in the rate of postoperative infections.

Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the calculation rules in ***Appendix A-9*** of this manual that apply to this measure.

Selected References (MAT-2a and MAT-2b):

- Alekwe, L.O., Kuti, O., Orji, E.O., Ogunniyi, S.O. (2008). Comparison of ceftriaxone versus triple drug regimen in the prevention of cesarean section infectious morbidities, *Journal Maternal Fetal Neonatal Medicine*, 21(9):638-42.
- Costantine, M.M., Rahman, M., Ghulmiyah, L., Byers B., Longo, M., Wen, T., Hankins G., Saade, G.R. (2008). Timing of perioperative antibiotics for cesarean delivery: a meta-analysis. *American Journal Obstetrics Gynecology*, 199 (3), p.301e1-301e6.
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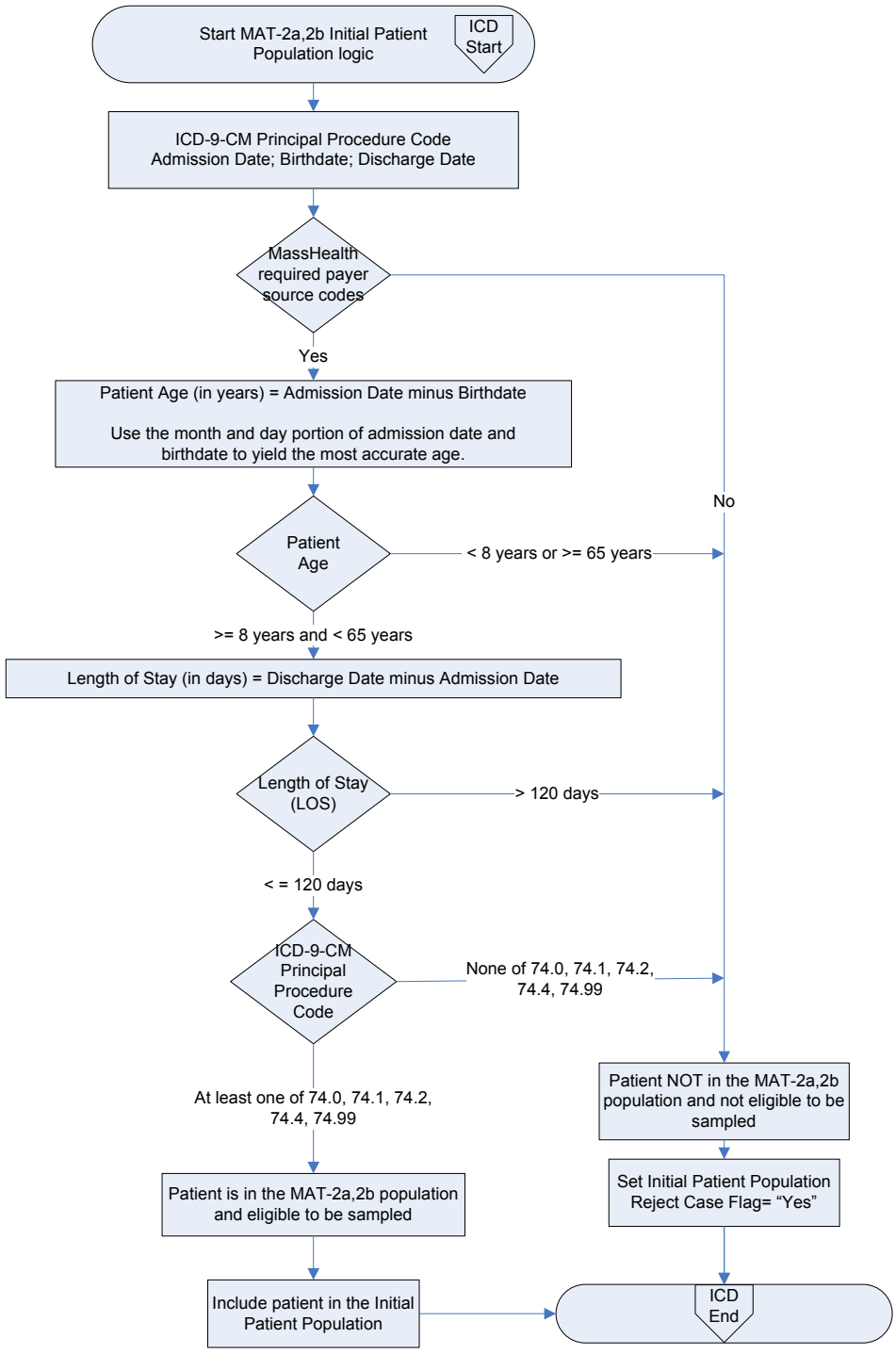
- Tita, A.T., Hauth, J.C., Grimes, A., Owen J., Stamm, A.M., Andrews, W.W. (2008). Decreasing incidence of post-cesarean endometritis with extended-spectrum antibiotic prophylaxis. *Obstetrics & Gynecology* 111(1), p.51-56.
- Tita, AT, Rouse DJ, Blackwell S, Saade, GR, Spong, C.Y., Andrews W.W. (2009). Emerging concepts in antibiotic prophylaxis for cesarean delivery: a systematic review. *Obstetrics & Gynecology*, 113(3):675-82.
- Dellinger, E.P., Gross, P.A., Barrett, T.L. et al. (1994). Quality standards for antimicrobial prophylaxis in surgical procedures. *Clinical Infectious Disease*, 18, p. 422-7.
- American College of Obstetricians and Gynecologists (2003). Prophylactic antibiotics. ACOG Practice Bulletin No. 47. *Obstetrics and Gynecology,* 102, p.875-82.
- Smaill, F., Hofmeyr, G.J.(2002). Antibiotic prophylaxis for cesarean section. Cochrane Database System Review 2002:3:CD000933.
- Hopkins L, and Smaill, F (1999). Antibiotic prophylaxis regimes and drugs for cesarean section. Cochrane Database System Review 1999;2:CD001136.
- Berghella, V., Baxter, J.K., Chauhan, S.P. (2005).Evidence-based surgery for cesarean delivery. *American Journal of Obstetrics Gynecology*, 193, p.1607-17.
- Chelmow, D., Hennesy, M., and Evantash E.G. (2004). Prophylactic antibiotics for non-laboring patients with intact membranes undergoing cesarean delivery: an economic analysis. *American Journal of Obstetrics Gynecology*, 191, p. 1661-65.
- Sullivan, S.A., Smith, T., Chang, E, et al.(2007). Administration of cefazolin prior to skin incision is superior to cefazolin at cord clamping in preventing postcesarean infectious morbidity: a randomized, controlled trial, *American Journal of Obstetrics Gynecology*, 196, p.455.e1-455.e5.
- Thigpen BD, Hood WA, Chauhan S, Bufkin L, Bofill J, Magann E, Morrison JC.(2006). Timing of prophylactic antibiotic administration in the uninfected laboring gravida: a randomized clinical trial. *American Journal Obstetric Gynecology,* 192, p.1864-8.
- Griffiths, J., Demianczuk, N., Cordoviz, M., Joffe, A.M. (2005). Surgical site infection following elective caesarian section: a case-control study of post discharge surveillance*. J Obstet Gynaecol Canada*, p.340-4.
- American College of Obstetricians and Gynecologists. Antimicrobial prophylaxis for cesarean delivery: timing of administration. September 2010:116:791-2

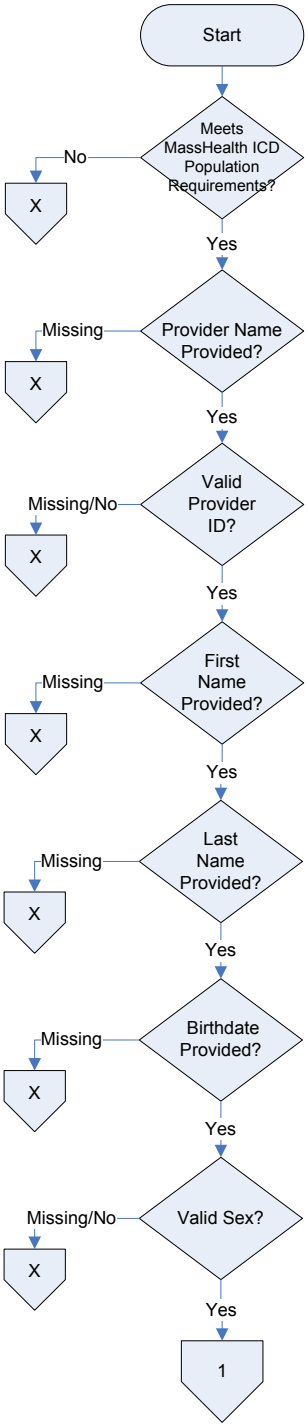
Initial Patient Population Algorithm
Perioperative Antibiotics for Cesarean Section (MAT-2a,2b)



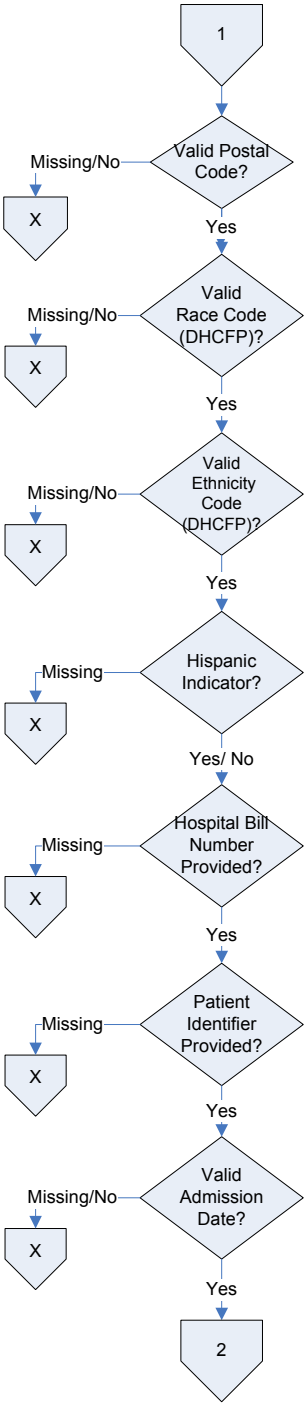
Perioperative Antibiotics for Cesarean Section (MAT-2a, 2b)

***Numerator:** All eligible patients who receive prophylactic intravenous antibiotics within one (1) hour prior to surgical incision.

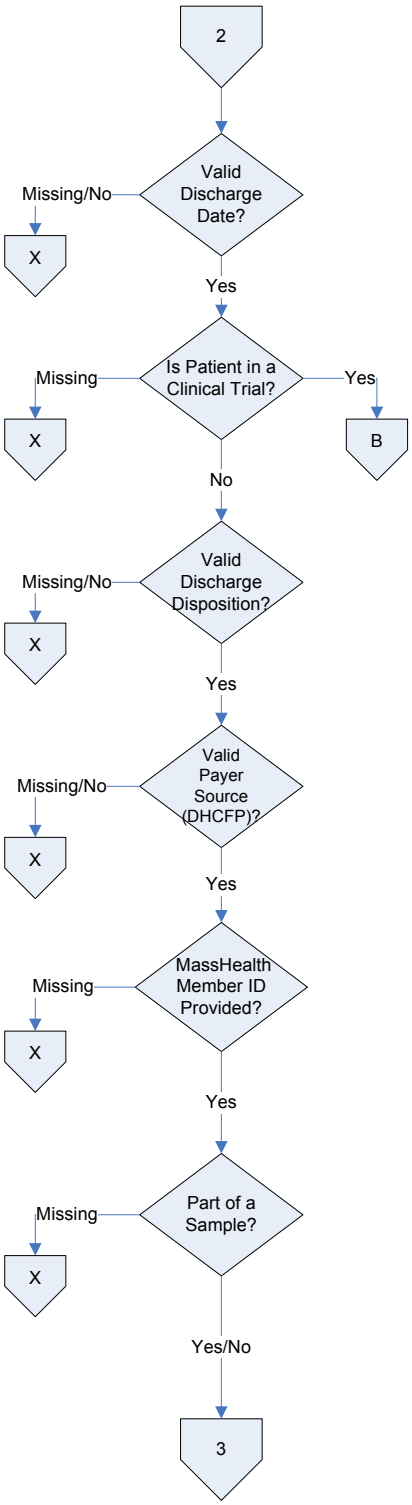
***Denominator:** All patients undergoing Cesarean section.



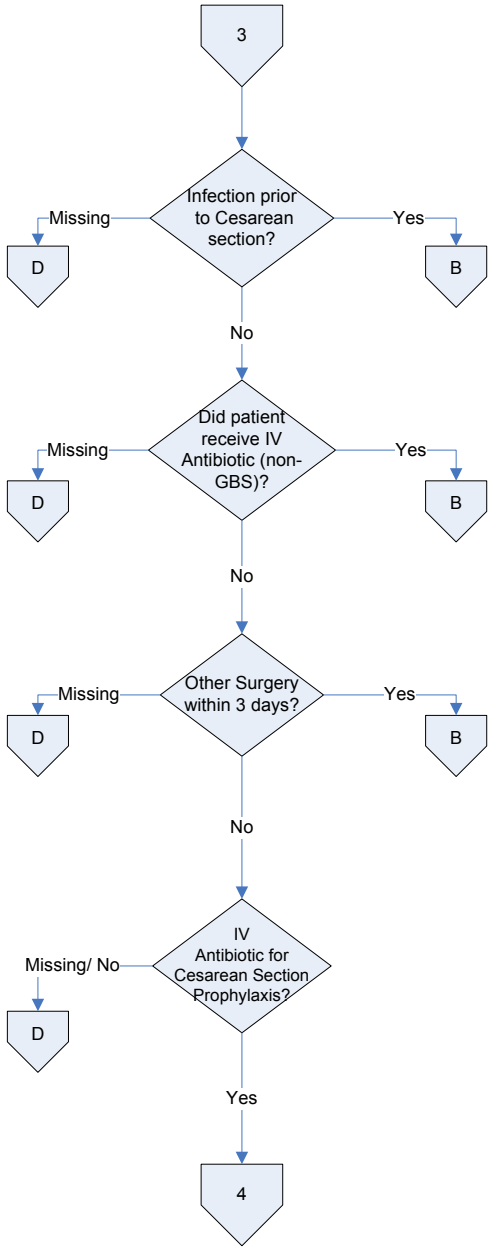
Perioperative Antibiotics for Cesarean Section (MAT-2a, 2b)



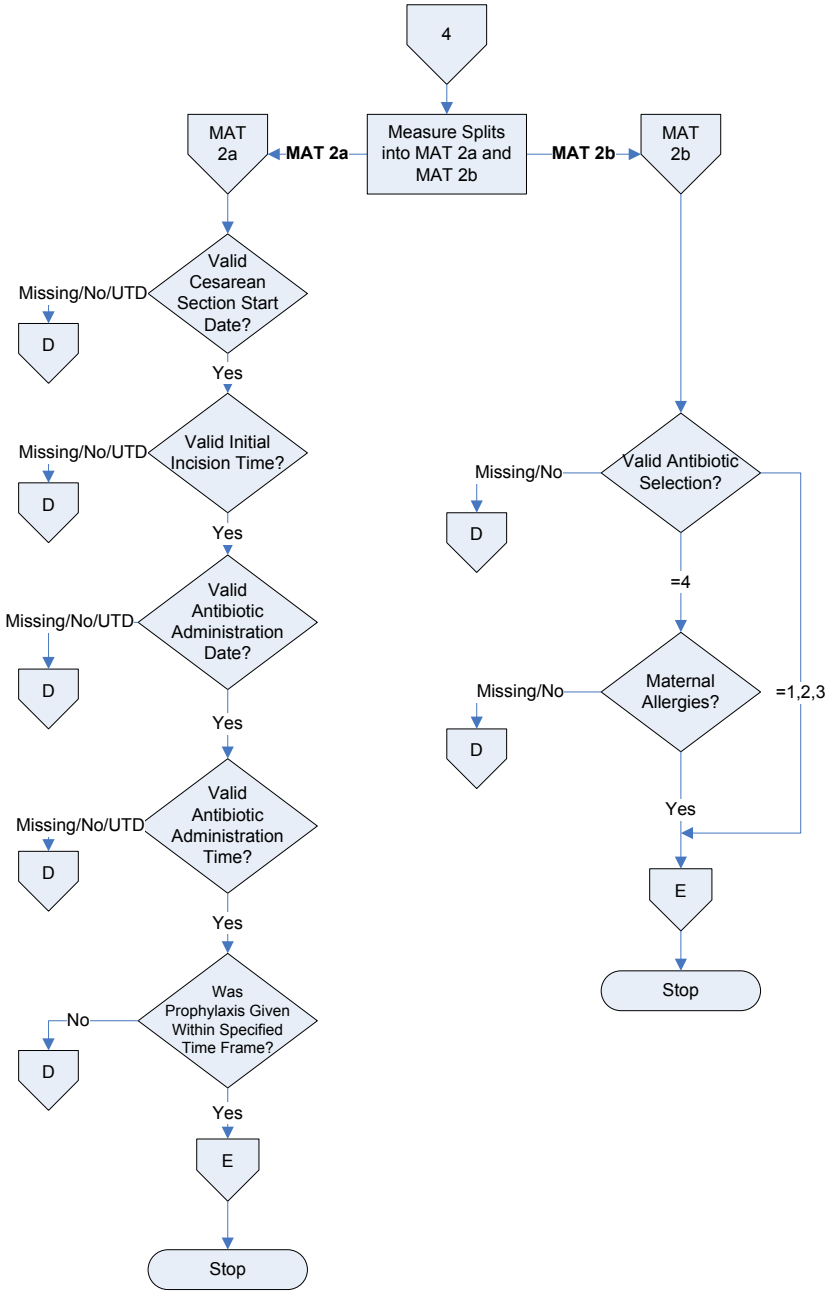
Perioperative Antibiotics for Cesarean Section (MAT-2a, 2b)



Perioperative Antibiotics for Cesarean Section (MAT-2a, 2b)

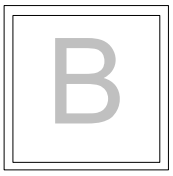


Perioperative Antibiotics for Cesarean Section (MAT-2a, 2b)



Note:
If the Perioperative Antibiotic is administered within one hour prior to initial incision time, the case will be assigned to Category E.

Review Ended
Not in Measure Population
Missing or Invalid Data
Case will be Rejected



Review Ended
Not in Measure Population
Excluded from Numerator and Denominator

Review Ended
In Measure Population
Excluded from Numerator
Included in Denominator

Measure Met
In Measure Population
Included in Numerator and Denominator

3D. Elective Delivery ≥ 37 and < 39 completed weeks gestation	(MAT-3)

Description: Patients with elective vaginal deliveries or elective cesarean sections at >= 37 and <39 weeks of gestation completed.

Rationale: For almost 3 decades, the American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics (AAP) have had in place a standard requiring 39 completed weeks gestation prior to elective delivery, either vaginal or operative (ACOG, 1996). A survey conducted in 2007 of almost 20,000 births in HCA hospitals throughout the U.S. carried out in conjunction with the March of Dimes at the request of ACOG revealed that almost 1/3 of all babies delivered in the United States are electively delivered with 5% of all deliveries in the U.S. delivered in a manner violating ACOG/AAP guidelines. Most of these are for convenience, and result in significant short term neonatal morbidity (neonatal intensive care unit admission rates of 13- 21% (Clark et al., 2009).

According to Glantz (2005), compared to spontaneous labor, elective inductions result in more cesarean deliveries and longer maternal length of stay. The American Academy of Family Physicians (2000) also notes that elective induction doubles the cesarean delivery rate. Repeat elective cesarean sections before 39 weeks gestation also result in higher rates of adverse respiratory outcomes, mechanical ventilation, sepsis and hypoglycemia for the newborns (Tita et al., 2009).

Type of measure: Process

Improvement noted as: Decrease in the rate.

Numerator statement: Patients with elective deliveries

Included population: ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for one or more of the following:

- Medical induction of labor as defined in Appendix A, Table 11.05
- Cesarean section as defined in Appendix A, Table 11.06 while not in Active Labor or experiencing Spontaneous Rupture of Membranes

Excluded population: None

Data Elements:

- *Labor*
- ICD-9-CM Other Procedure Codes
- ICD-9-CM Principal Procedure Code
- Spontaneous Rupture of Membranes
-

Denominator statement: Patients delivering newborns with >= 37 and < 39 weeks of gestation completed

Included population:

- ICD-9 principal and secondary diagnosis codes for live births during the admission (as defined in Appendix A: ICD-9-CM Code Tables 11.01, 11.02, 11.03, 11.04 of the Specifications Manual for Joint Commission National Core measures version noted in Section 2.A of this manual).
- ICD-9-CM Principal Diagnosis Code or ICD-9-CM Other Diagnosis Codes for planned cesarean section in labor as defined in Appendix A, Table 11.06.1 of the Specifications Manual for Joint Commission National Core measures.

Excluded population:

- ICD-9-CM Principal Diagnosis Code or ICD-9-CM Other Diagnosis Codes for conditions possibly justifying elective delivery prior to 39 weeks gestation as defined in Appendix A, Table 11.07 of the Specifications Manual for Joint Commission National Core measures version noted in Section 2.A of this manual)
- Less than 8 years of age
- Greater than or equal to 65 years of age

- Length of stay > 120 days
- Enrolled in clinical trials
- Prior Uterine Surgery

Data Elements:

- Admission Date
- Birthdate
- Clinical Trial
- Discharge Date
- Gestational Age
- ICD-9-CM Other Diagnosis Codes
- ICD-9-CM Principal Diagnosis Code
- Prior Uterine Surgery

MAT-3 Measure Population identification: See initial patient population algorithm.

Risk adjustment: No

Data collection approach: Retrospective data sources for required data include administrative and medical records. Refer to MAT-3 data abstraction collection tool in ***Appendix A-3*** and data dictionary ***Appendix A-8*** of this manual for detailed instructions.

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

Measure analysis suggestion: In order to identify areas for improvement, hospitals may want to review results based on specific ICD-9 codes or patient populations. Data could be analyzed further to determine specific patterns or trends to help reduce elective deliveries.

Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

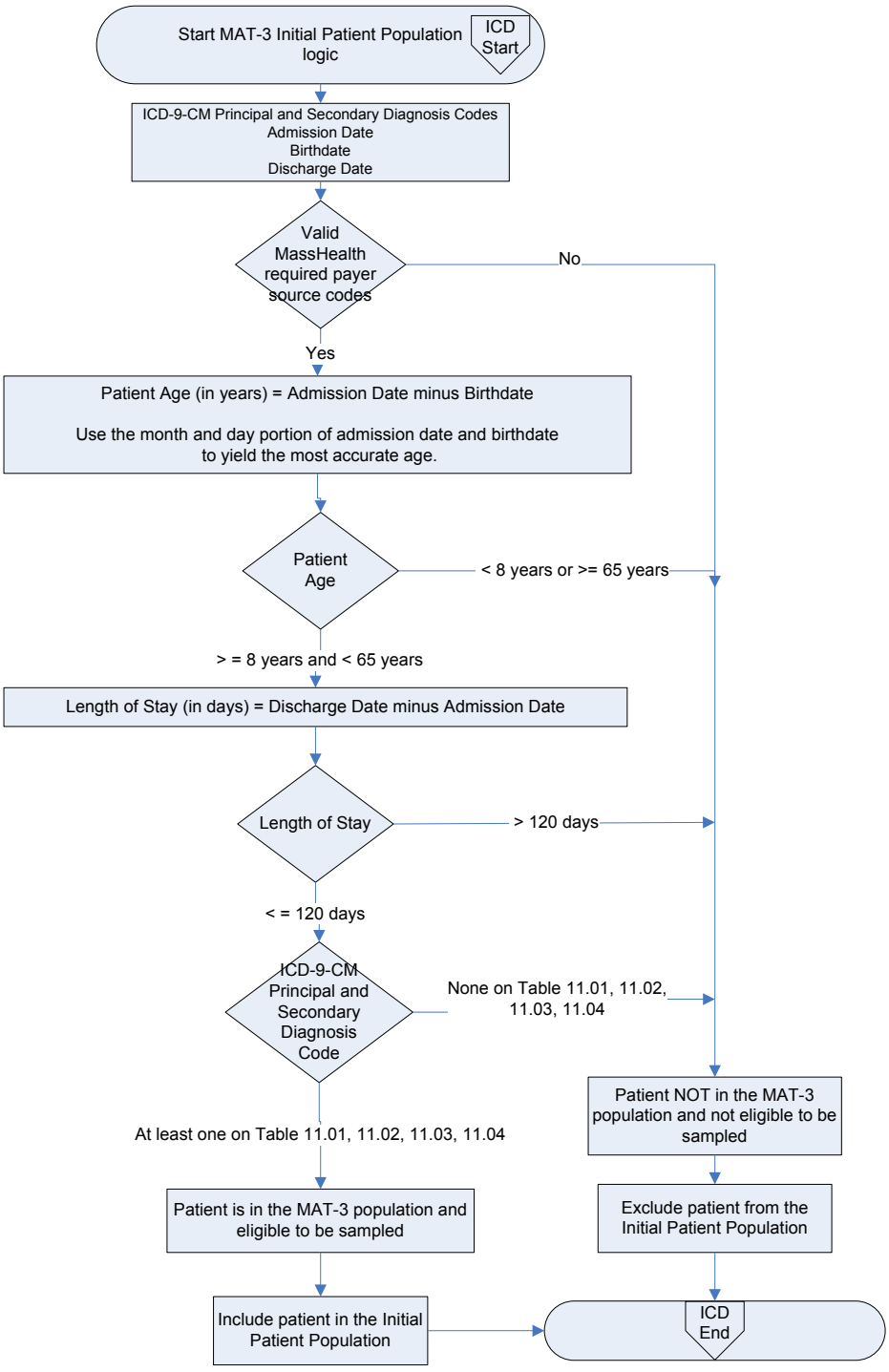
Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the calculation rules in ***Appendix A-9*** of this manual that apply to this measure.

Selected References:

- American Academy of Family Physicians. (2000). Tips from Other Journals: Elective induction doubles cesarean delivery rate, 61, 4.Retrieved December 29, 2008 at: http://www.aafp.org/afp/20000215/tips/39.html.
- American College of Obstetricians and Gynecologists. (November 1996). ACOG Educational Bulletin.
- Clark, S., Miller, D., Belfort, M., Dildy, G., Frye, D., & Meyers, J. (2009). Neonatal and maternal outcomes associated with elective delivery. [Electronic Version]. *Am J Obstet Gynecol*. 200:156.e1-156.e4.
- Glantz, J. (Apr.2005). Elective induction vs. spontaneous labor associations and outcomes. [Electronic Version]. *J Reprod Med*. 50(4):235-40.
- Tita, A., Landon, M., Spong, C., Lai, Y., Leveno, K., Varner, M, et al. (2009). Timing of elective repeat cesarean delivery at term and neonatal outcomes. [Electronic Version]. *NEJM*. 360:2, 111-120.

ACKNOWLEDGEMENT: The MassHealth MAT-3 measure attributes described above were adapted from Specifications Manual for the Joint Commission National Quality Core Measures (versions 2012B) in consultation with The Joint Commission and the Iowa Foundation for Medical Care. The 'Specifications Manual for the Joint Commission National Quality Core Measures' is periodically updated by The Joint Commission. Users of the 'Specifications Manual for The Joint Commission National Core Measures' must update their software and associated documentation based on The Joint Commission's published manual production timelines.

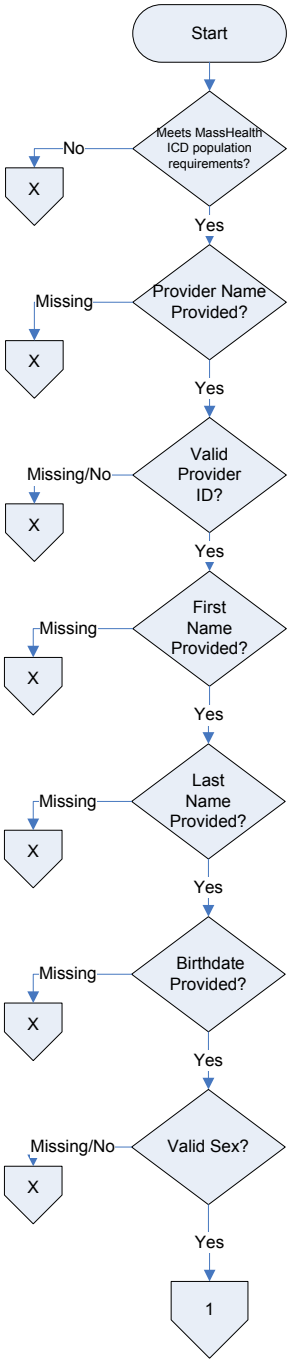
Initial Patient Population Algorithm
Elective Delivery (MAT-3)



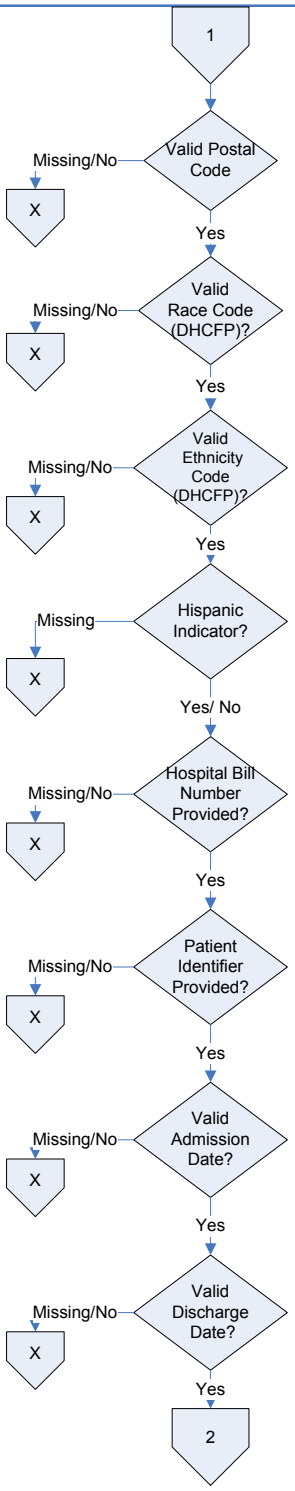
Elective Delivery (MAT-3)

***Numerator:** Patients with elective deliveries completed

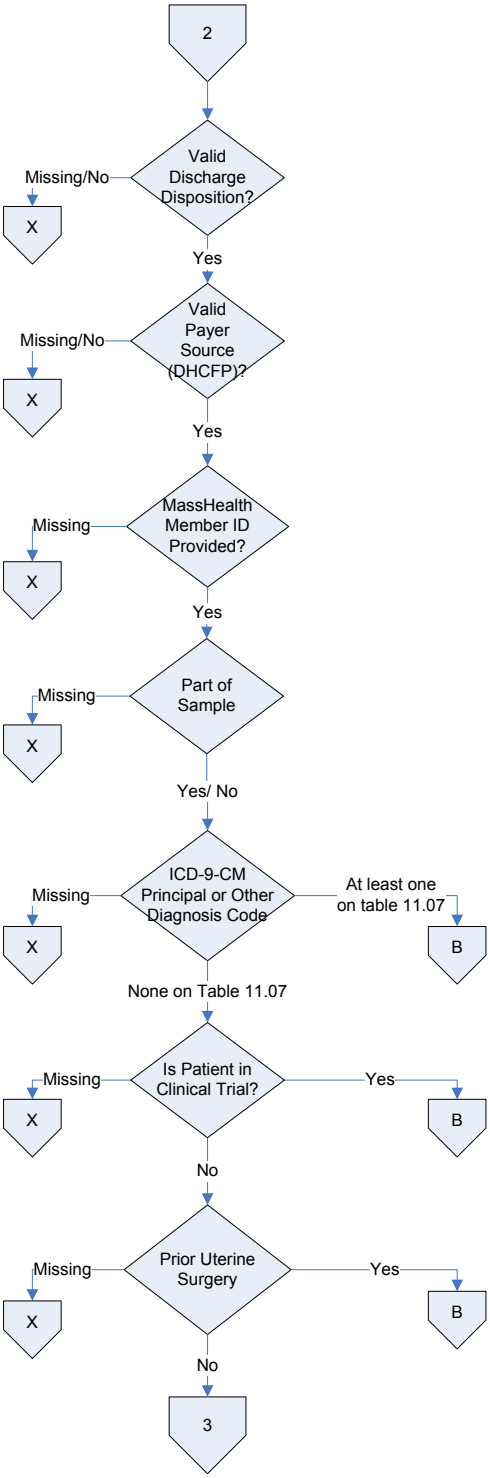
***Denominator:** Patients delivering newborns with >= 37 and <39 weeks gestation completed



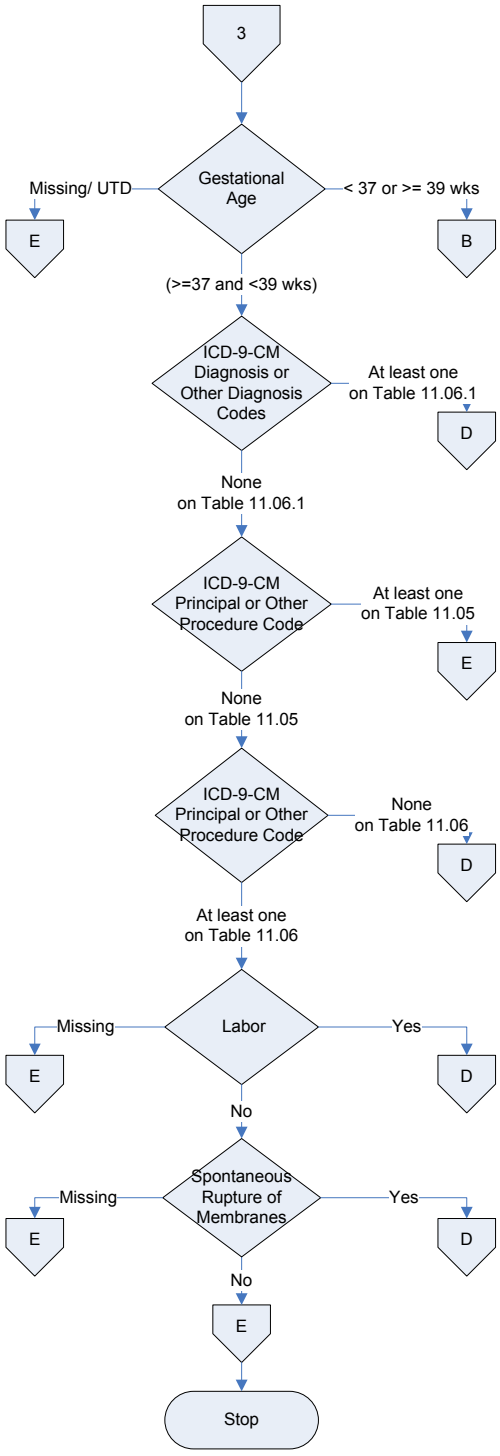
Elective Delivery (MAT-3)



Elective Delivery (MAT-3)



Elective Delivery (MAT-3)



Review Ended
Not in Measure Population
Missing or Invalid Data
Case will be Rejected

Review Ended
Not in Measure Population
Excluded from Numerator and Denominator

Review Ended
In Measure Population
Excluded from Numerator
Included in Denominator

Review Ended
In Numerator Population
Included in Numerator and Denominator

3E. Care Coordination Measures Set (Inpatient Discharges)

Introduction
Care coordination is the deliberate organization of care delivery activities between providers, patients, and health system components designed to improve quality and efficiency of healthcare. Care coordination measures are intended to capture a broad cross-section of diagnoses and reasons for admissions that must include patients discharged from any hospital inpatient facility unit. Thus, the *measure* population should not be limited to cases drawn from existing measures listed in Table 2.1 of this manual.

3E-1 Reconciled Medication List Received by Discharged Patients (CCM-1)

Description: *Percentage of patients discharged from an acute hospital inpatient facility to home or any other site of care, or their caregiver(s), who received a reconciled medication list at the time of discharge including, at a minimum, medications in the specified categories (continued, new, discontinued).*

Rationale: The Institute of Medicine estimated that medication errors harm 1.5 million people each year in the United States, at an annual cost of at least $3.5 billion. Many of these medication errors occur during times of transition, when patients receive medications from different prescribers who lack access to patients' comprehensive, reconciled medication list at each care transition (e.g., inpatient discharge). Providing a reconciled medication list at discharge may improve patients' ability to manage their medication regimen properly and reduce the number of medication errors.

Type of measure: Process

Improvement noted as: An increase in the rate.

Numerator statement: Patients or their caregiver(s) who received a reconciled medication list at the time of discharge.

Data Elements:
- Reconciled Medication List

Denominator statement: *Patients* discharged from *any unit of the acute hospital inpatient facility* (e.g.: medical, surgical, rehab, psychiatric, obstetrics, etc) to home/ self care or any other site of care.

Excluded population:
- Patients less than 2 years
- Patients greater than or equal to 65 years of age
- Patients who died
- Patients who left against medical advice (AMA) or discontinued care

Measure Population Identification. See initial patient population algorithm.

Risk adjustment: No

Data collection approach: Retrospective data sources for required data elements include administrative and medical records. Refer to data abstraction tool in ***Appendix A-4*** and data dictionary in ***Appendix A-8*** of this manual for detailed instructions.

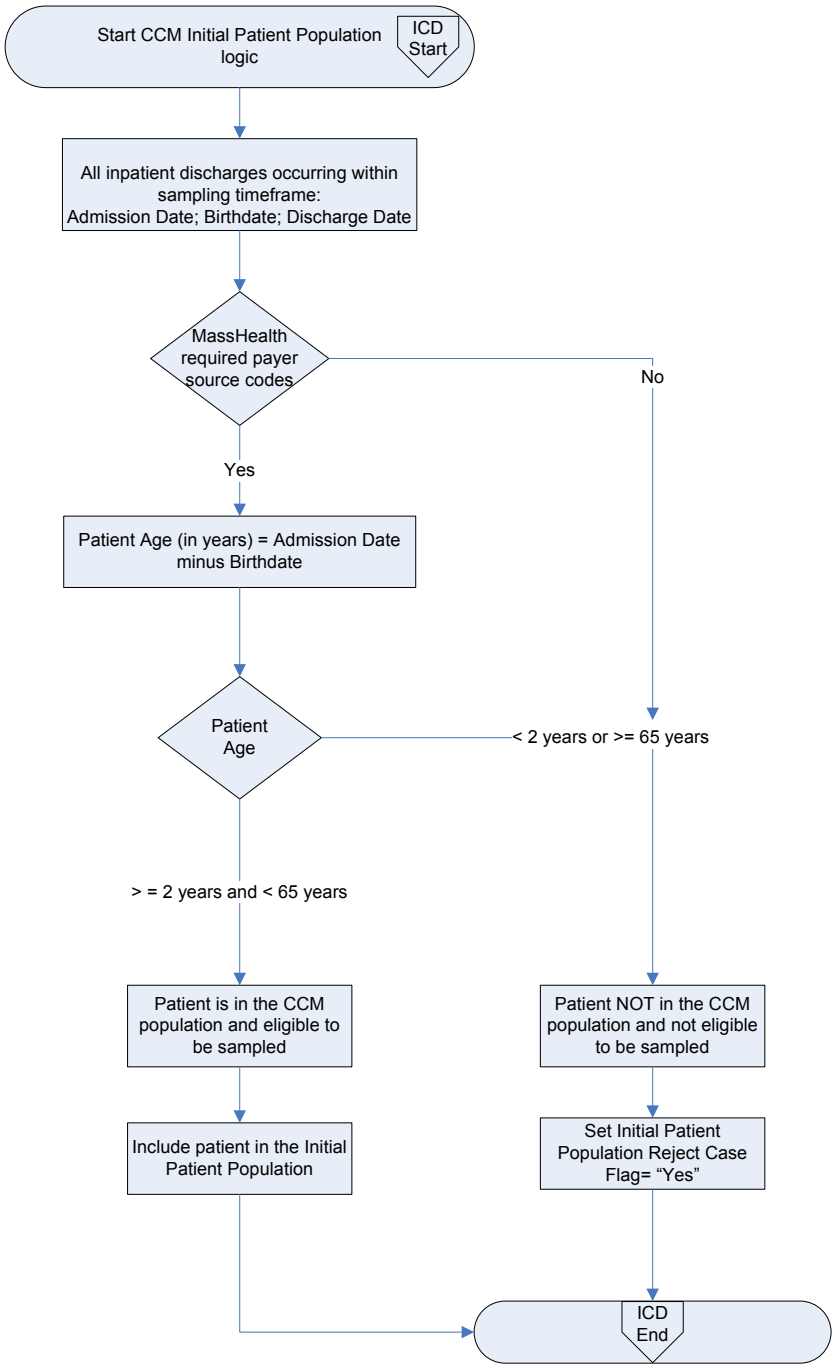
Data accuracy: Variation may exist in documentation provided at the time of transition and documentation of transmission time; therefore, medical record documentation processes may require evaluation.

Measure analysis suggestion: Data could be analyzed further to determine specific patterns or trends.

Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the ***Appendix A-9*** for the calculation rules that apply to this measure.

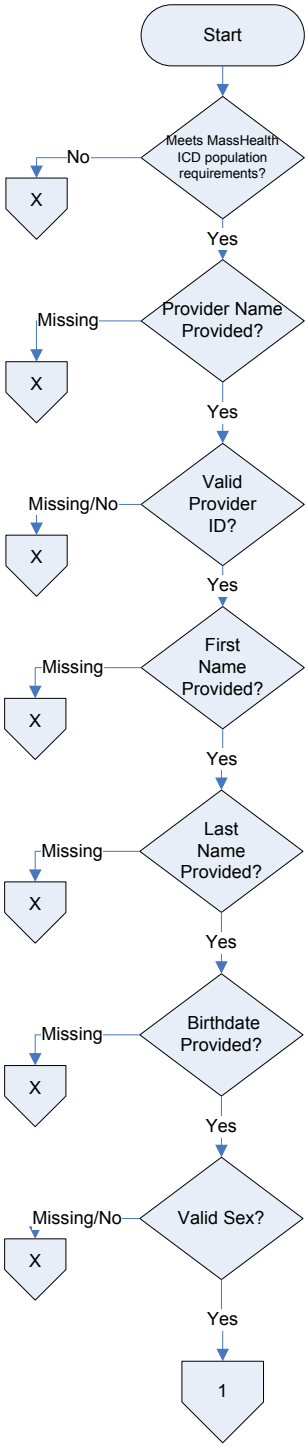
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



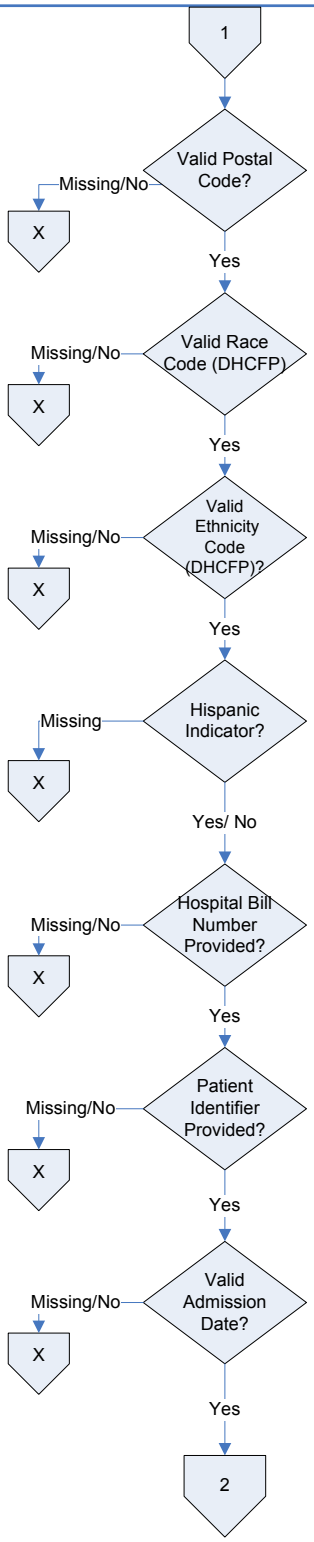
Care Coordination Measure (CCM-1)

***Numerator:** Patients or their caregiver(s) who received a reconciled medication list at the time of discharge including, at a minimum, medications in the following categories: Discontinued, Continued, and New.

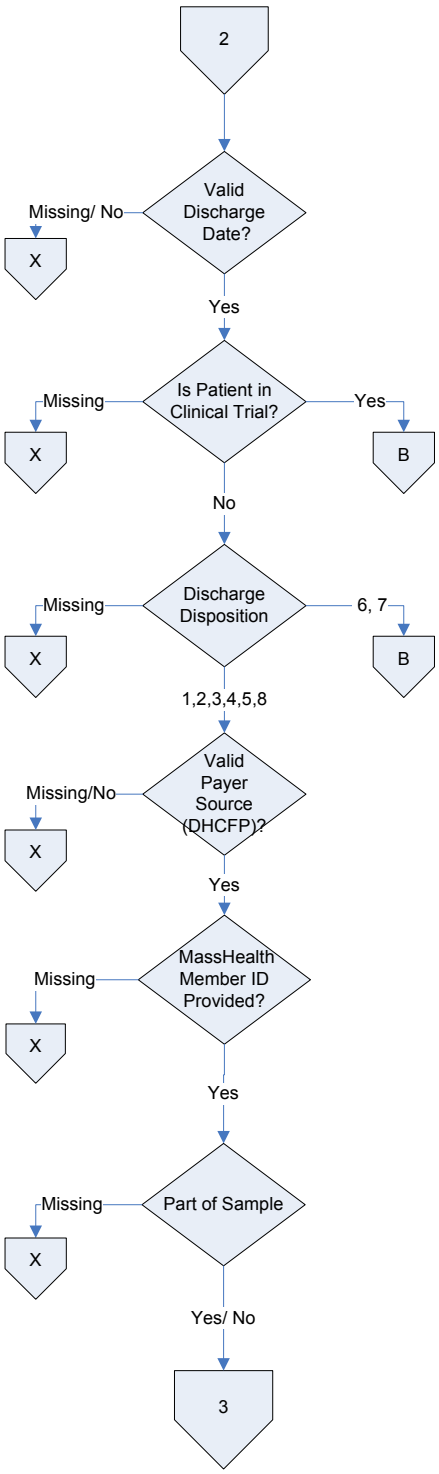
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



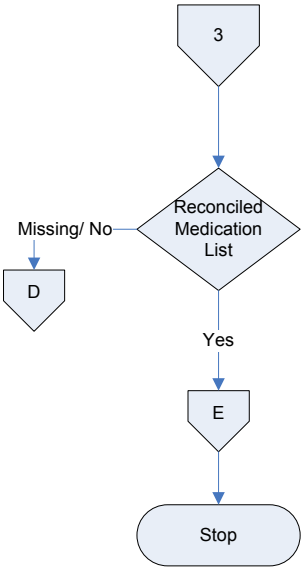
Care Coordination Measure (CCM-1)



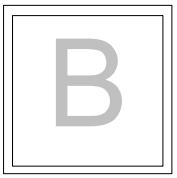
Care Coordination Measure (CCM-1)



Care Coordination Measure (CCM-1)



Review Ended
Not in Measure Population
Missing or Invalid Data
Case will be Rejected



Review Ended
Not in Measure Population
Excluded from Numerator and Denominator

Review Ended
In Measure Population
Excluded from Numerator
Included in Denominator

Measure Met
In Measure Population
Included in Numerator and Denominator

3E-2. Transition Record with Specified Elements Received by Discharge Patient (CCM-2)

Description: *Percentage of patients discharged from an acute hospital inpatient* facility to home or any other site of care, or their caregiver(s), who received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the specified elements.

Rationale: *Numerous studies have identified the necessary elements required for effectively managing transitions of care at time of discharge that should be included in transition records. National consensus has led to an agreed upon minimum set of data elements that should be in transition records to facilitate communication and exchange of information for providing proper follow up care and avoiding readmission.*

Type of measure: Process measure

Improvement noted as: An increase in the rate.

Numerator statement: Patients or their caregiver(s) who received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, all of the included data elements.

Data Elements:

- Transition Record
- Reason for Inpatient Admission
- *Medical* Procedures and Tests Performed During Inpatient Stay and Summary of Results
- *Discharge Diagnosis*
- Current Medication List
- Studies Pending at Discharge
- Patient Instructions
- Advance Care Plan
- Contact Information 24 hrs/ 7 days
- Contact Information for Studies Pending
- Plan for Follow Up Care
- Primary Physician or Other Health Care Professional Designated for Follow Up Care

Denominator statement: *Patients* discharged from *any unit of the acute hospital inpatient facility* (e.g.: medical, surgical, rehab, psychiatric, obstetrics, etc) to home/ self care or any other site of care.

Excluded population:

- Patients less than 2 years
- Patients greater than or equal to 65 years of age
- Patients who died
- Patients who left against medical advice (AMA) or discontinued care

Measure Population Identification. See initial patient population algorithm

Risk adjustment: No

Data collection approach: Retrospective data sources for required data elements include administrative and medical records. Refer to data abstraction tool in ***Appendix A-4*** and data dictionary in ***Appendix A-8*** of this manual for detailed instructions.

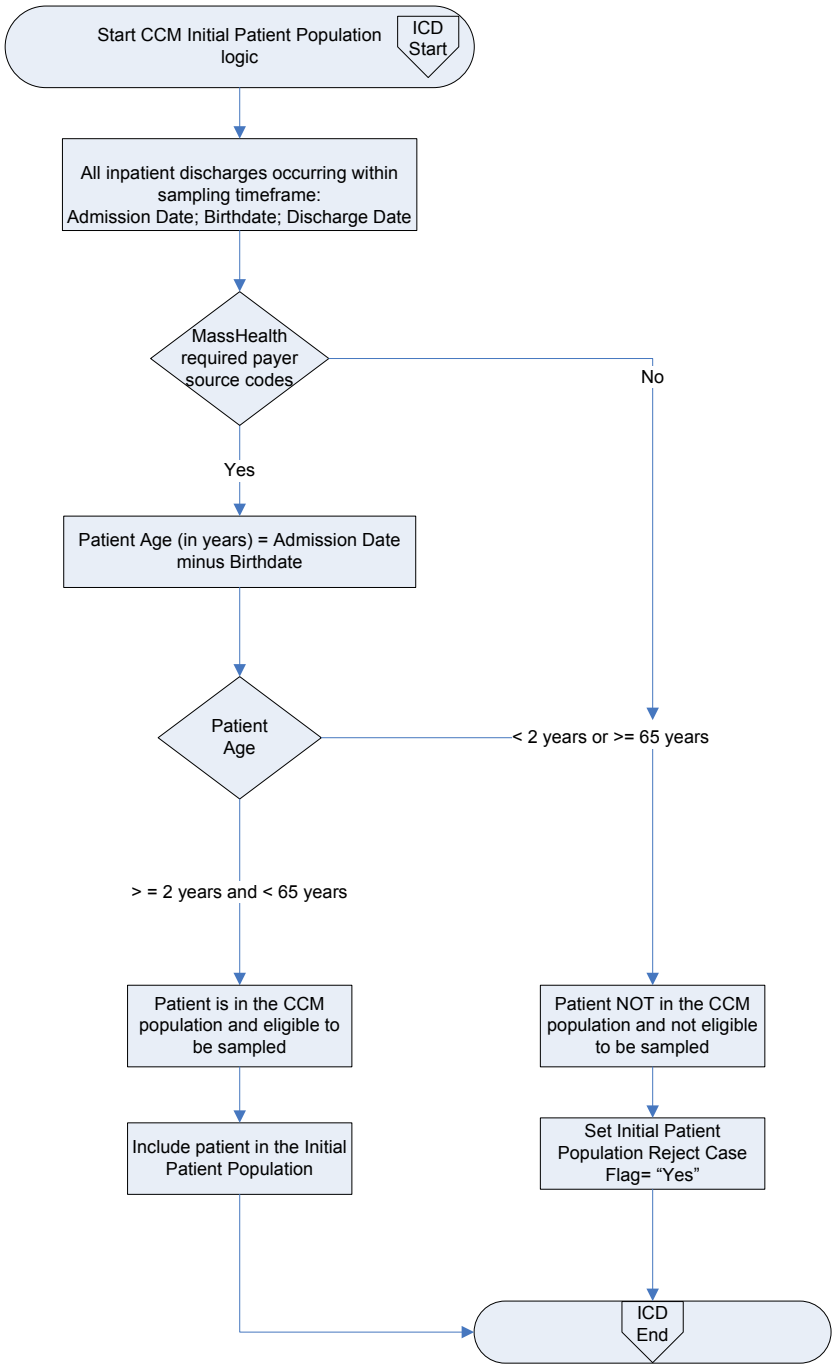
Data accuracy: Variation may exist in documentation provided at the time of transition and documentation of transmission time; therefore, medical record documentation processes may require evaluation.

Measure analysis suggestion: Data could be analyzed further to determine specific patterns or trends.

Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the ***Appendix A-9*** for the calculation rules that apply to this measure.

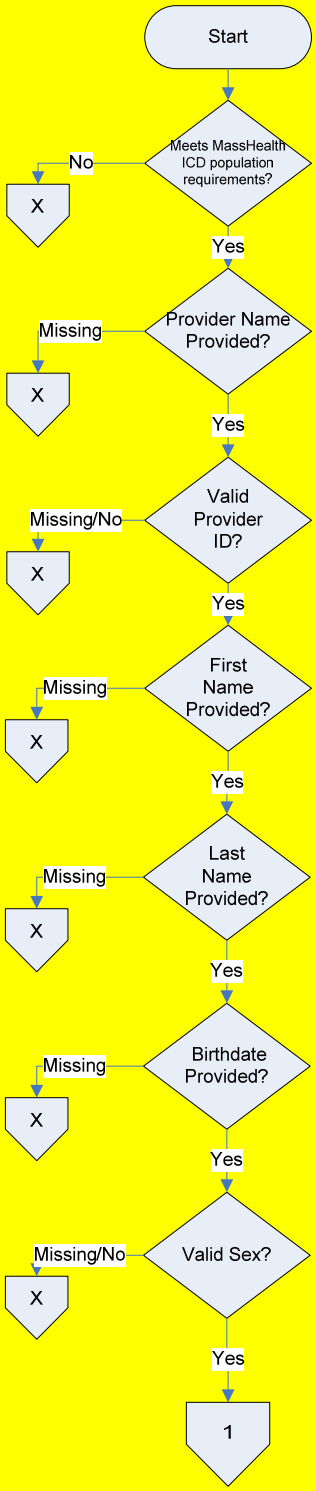
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



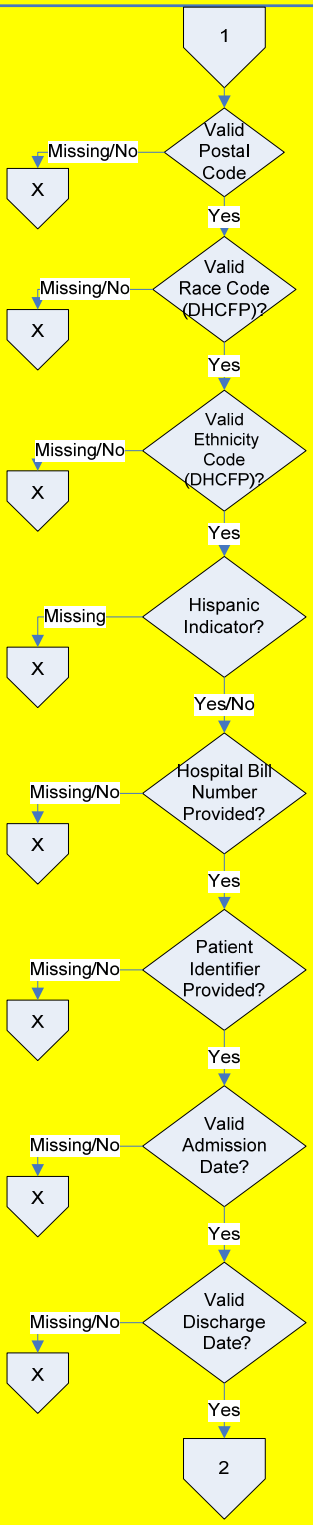
Care Coordination Measure (CCM-2)

***Numerator:** Patients or their caregiver(s) who received a written transition record at the time of discharge.

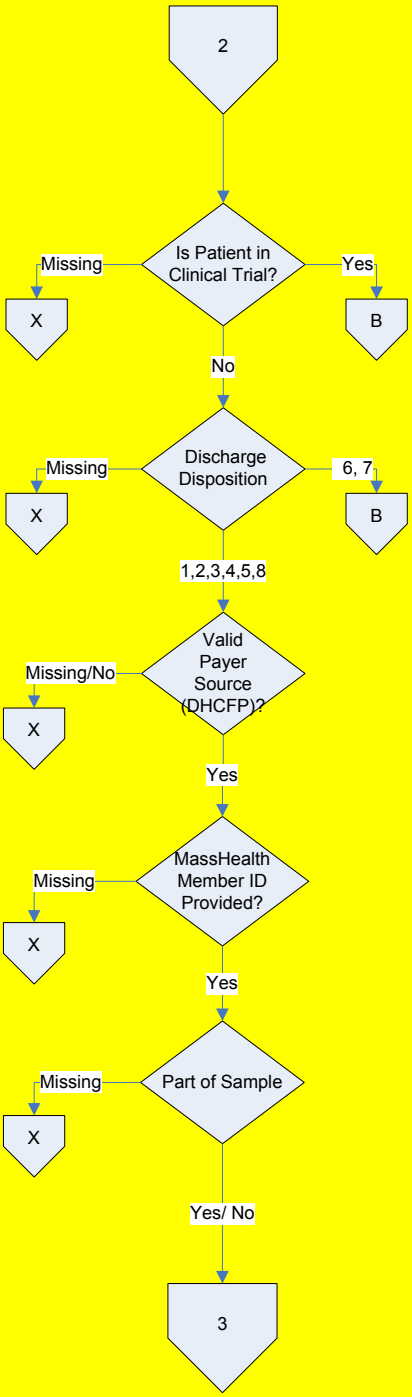
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



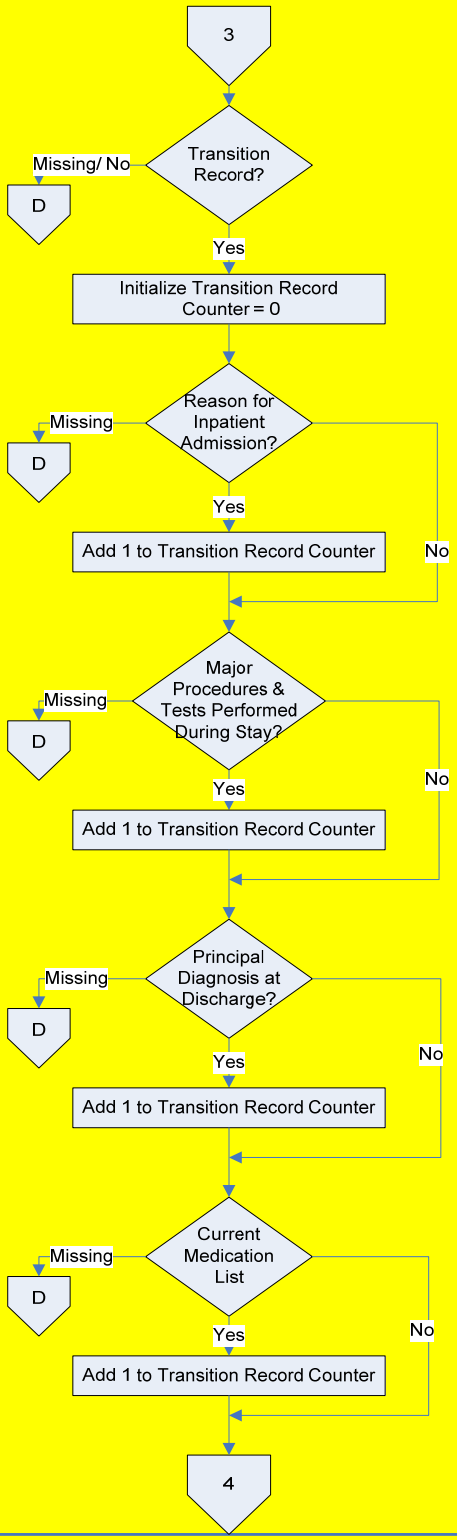
Care Coordination Measure (CCM-2)



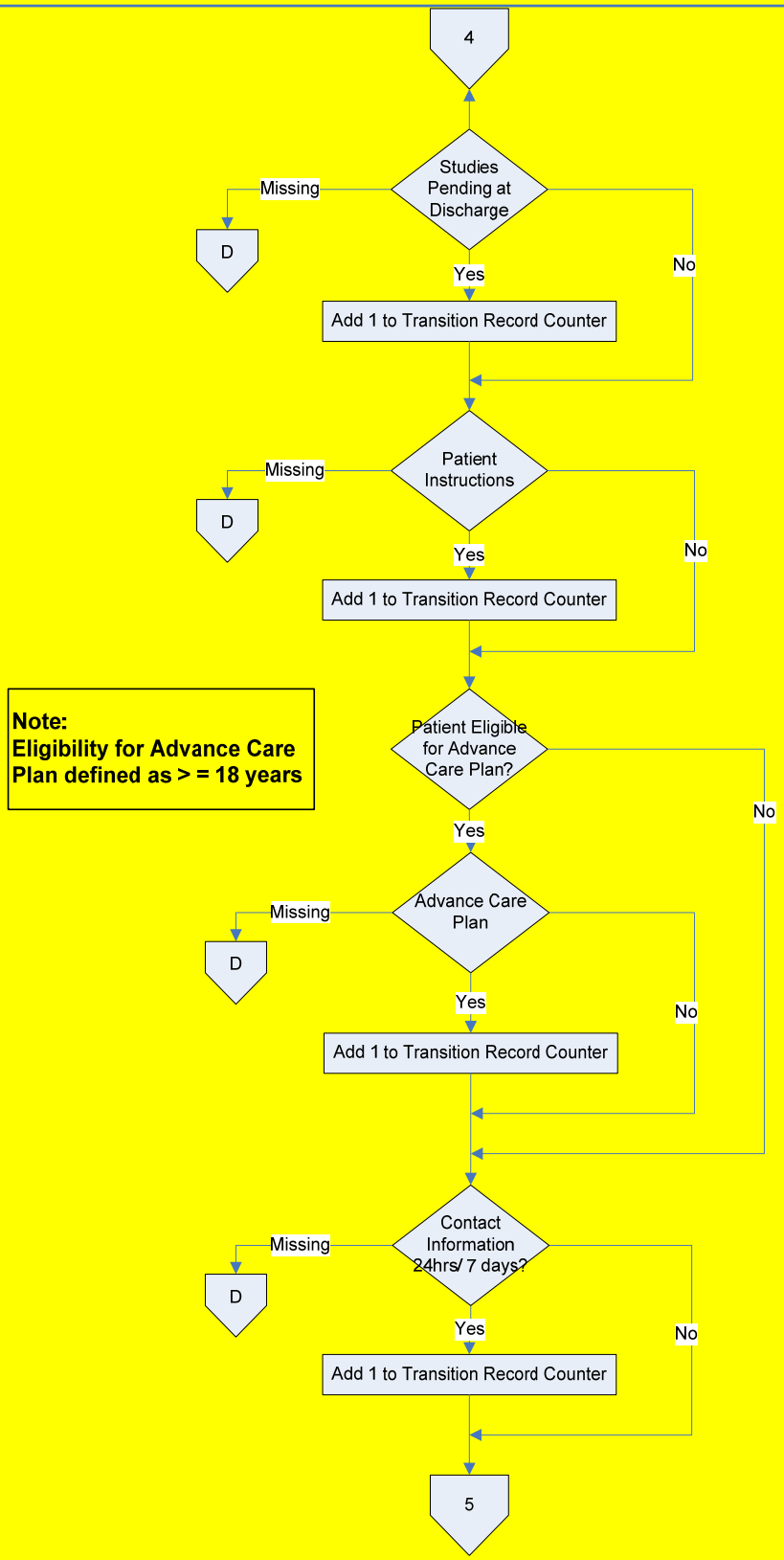
Care Coordination Measure (CCM-2)



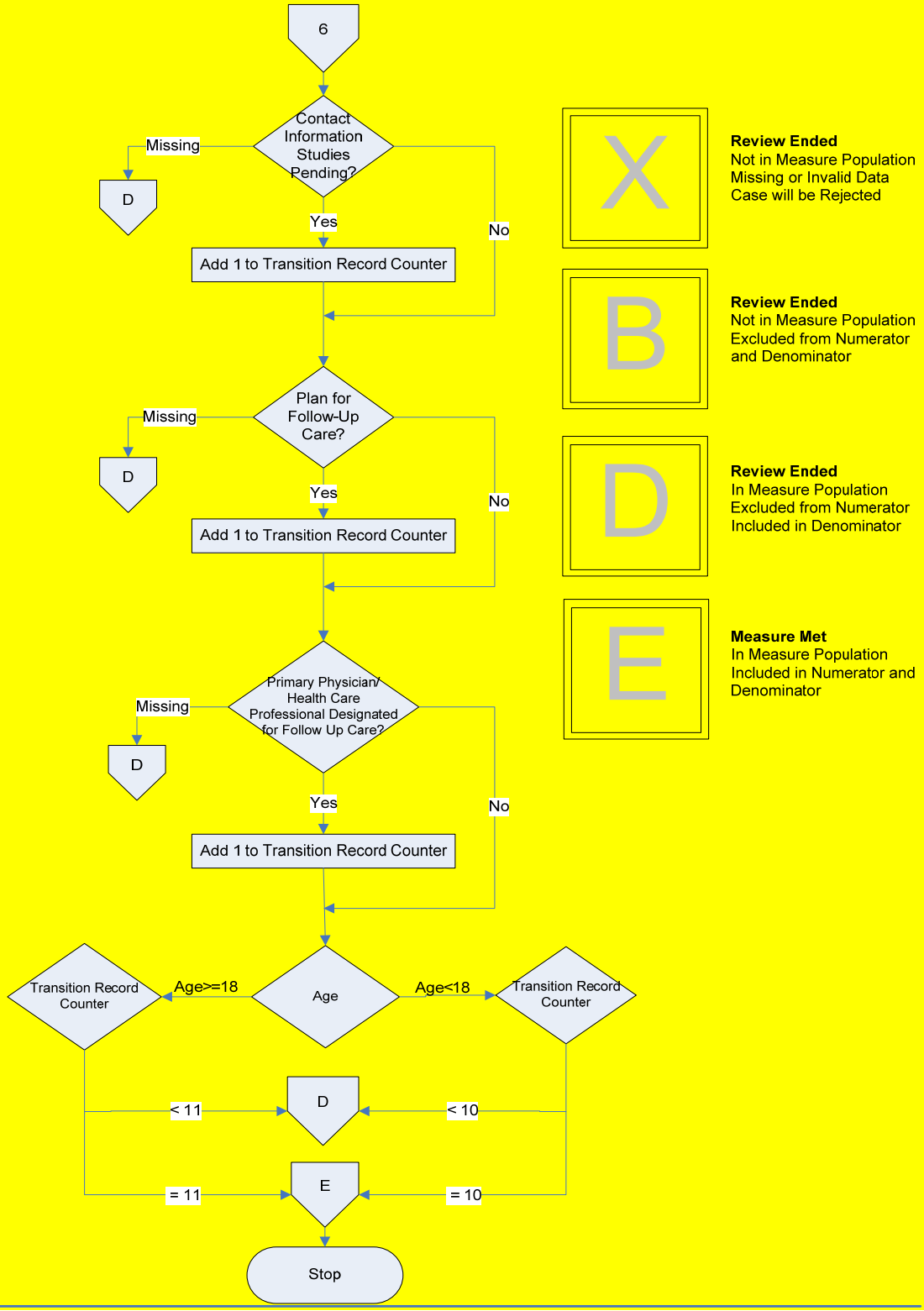
Care Coordination Measure (CCM-2)



Care Coordination Measure (CCM-2)



Care Coordination Measure (CCM-2)



3E-3. Timely Transmission of Transition Record (CCM-3)

Description: Percentage of *patients discharged from an acute hospital inpatient facility* to home or any other site of care for whom a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 2 days of discharge.

***Rationale**: Timely communication and exchange of patient information between hospitals and physician or other provider caring for the patient allows the receiving provider to effectively facilitate treatment consistent with patients clinical presentation, and decrease risk of hospital readmissions*

Type of measure: Process measure

Improvement noted as: An increase in the rate.

Numerator statement: Patients for whom a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up within 2 days of discharge.

Data Elements:

- Discharge Date
- Transmission Date

Denominator statement: *Patients* discharged from *any unit of the acute hospital inpatient facility* (e.g.: medical, surgical, rehab, psychiatric, obstetrics, etc) to home/ self care or any other site of care.

Excluded population:

- Patients less than 2 years
- Patients greater than or equal to 65 years of age
- Patients who died
- Patients who left against medical advice (AMA) or discontinued care

Measure Population Identification. See initial patient population algorithm

Risk adjustment: No

Data collection approach: Retrospective data sources for required data elements include administrative and medical records. Refer to data abstraction tool in ***Appendix A-4*** and data dictionary in ***Appendix A-8*** of this manual for detailed instructions.

Data accuracy: Variation may exist in documentation provided at the time of transition; therefore, medical record documentation processes may require evaluation.

Measure analysis suggestion: Data could be analyzed further to determine specific patterns or trends.

Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the calculation rules in ***Appendix A-9*** of this manual that apply to this measure.

Selected References (for all CCM measures):

- ABIM Foundation American College of Physicians Society of Hospital Medicine. The Physician Consortium for Performance Improvement. (PCPI). Care Transitions Performance Measurement Set Phase 1: Inpatient Discharges & Emergency Dept Discharges, PCPI, American Medical Association, June 2009.

- Transitions of Care Consensus Policy Statement American College of Physicians-Society of General Internal Medicine-Society of Hospital Medicine-American Geriatrics Society-American College of Emergency Physicians-Society of Academic Emergency Medicine, 2009b Journal of Hospital Medicine, vol 4 364—370.

- Chin, MH., Walters, AE., Scott C., Huang, E. (2007) Interventions to Reduce Racial and Ethnic Disparities in Health Care, Medical Care Research Review, Oct, 64 (5 suppl) 7S-28s DOCI:10.1177/1077558707305413.

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- McDonald, KM, Schultz, E., Albin, L., Pineda, N, Lonhart, J, Sundaram, V., Smith-Spangler, C. Brustrom, J., Malcolm, E. (2011), Care Coordination Measures Atlas. AHRQ Publication No. 11-0023-EF, January 2011. Agency for Healthcare Research and Quality, Rockville, MD available at: http://www.ahrq.gov/qual/careatlas/; Accessed August 12, 2011

- Greenwald, J., Denham, C., and Jack, B (2007), The Hospital Discharge: A review of a High risk care transition with highlights of a re-engineered discharge process, Jnl Patient Safety, vol 3, No 2, June 2007.

- National Quality Forum. Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination, 2010, A Consensus Report. http://www.qualityforum.org/ Accessed August 12, 2011.

- Pham, H, Grossman, J. Cohen, G. and Bodenheimer (2008), Hospitalists and Care Transitions: The Divorce of Inpatient and outpatient care, Health Affairs, vol 27, no. 5 pp 1315-1327

- Rozich JD & Resar, RK. 2001. Medication safety: One organization's approach to the challenge. *J. Clin. Outcomes Manag*. 8:27-34.

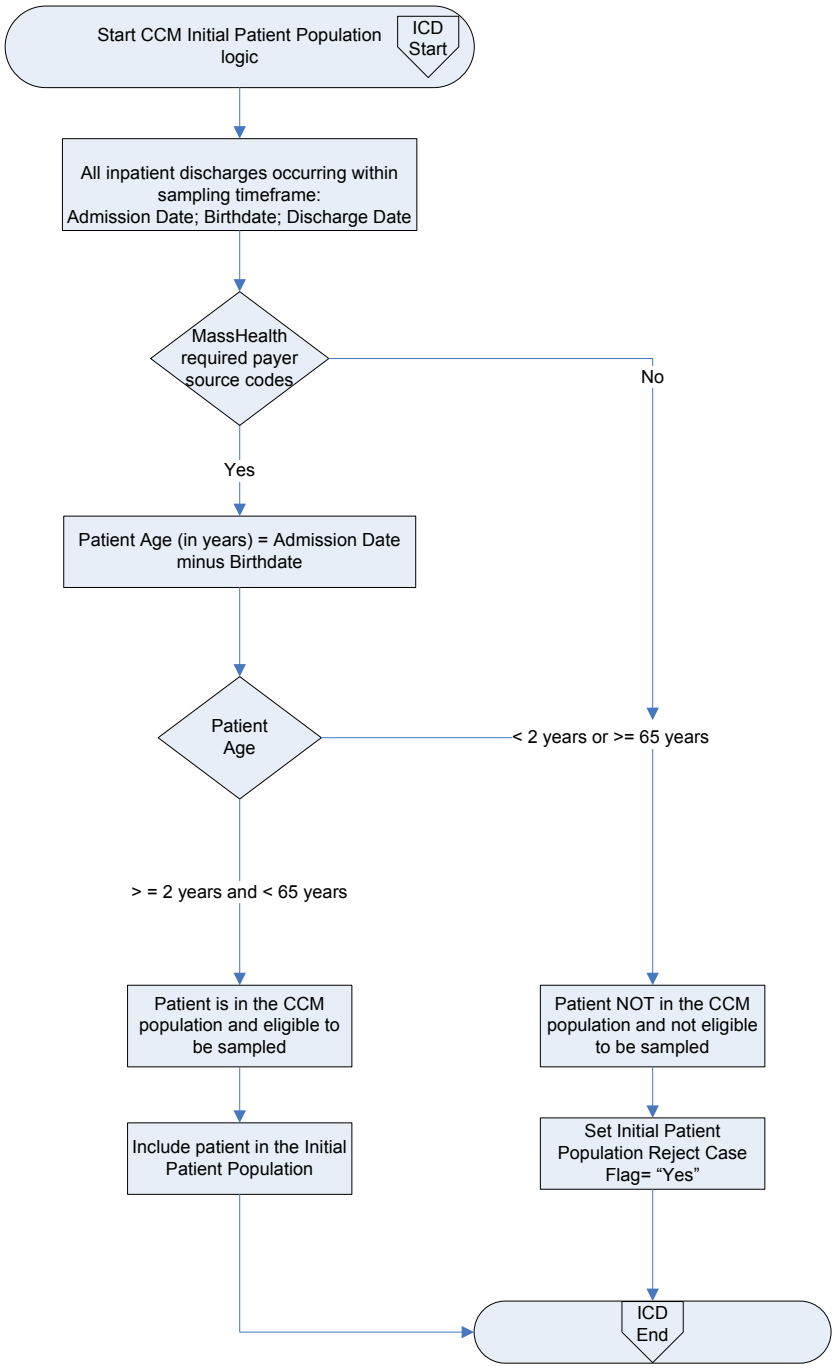
- Partnership for Solutions. 2002. *Chronic conditions: Making the Case for Ongoing Care*. Baltimore MD: The Johns Hopkins University.

- Van Walraven C, Seth R, Austin PC, Laupacis A. 2002. Effect of discharge summary availability during post-discharge visits on hospital readmission. Journal of General Internal Medicine 17:186-192.

- Snow V, Beck D, Budnitz T,. Miller DC, Potter J, Wears RL, Weiss KB, Williams MV. Transitions of Care Consensus Policy Statement: American College of Physicians-Society of General Internal Medicine- Society of Hospital Medicine- American Geriatrics Society- American College of Emergency Physicians- Society of Academic Emergency Medicine. *J Gen Intern Med* 2009 Apr 3.

- National Research Council. *Preventing Medication Errors: Quality Chasm Series*. Washington, DC: The National Academies Press, 2007.

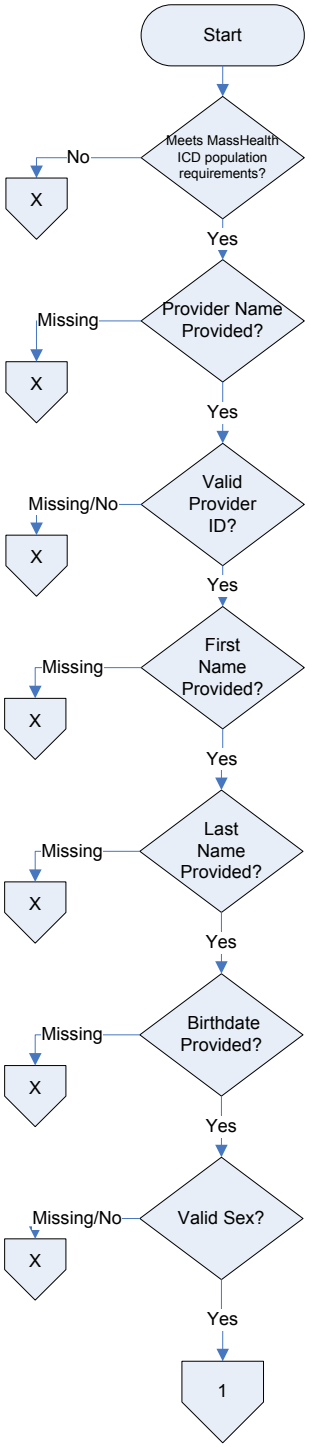
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



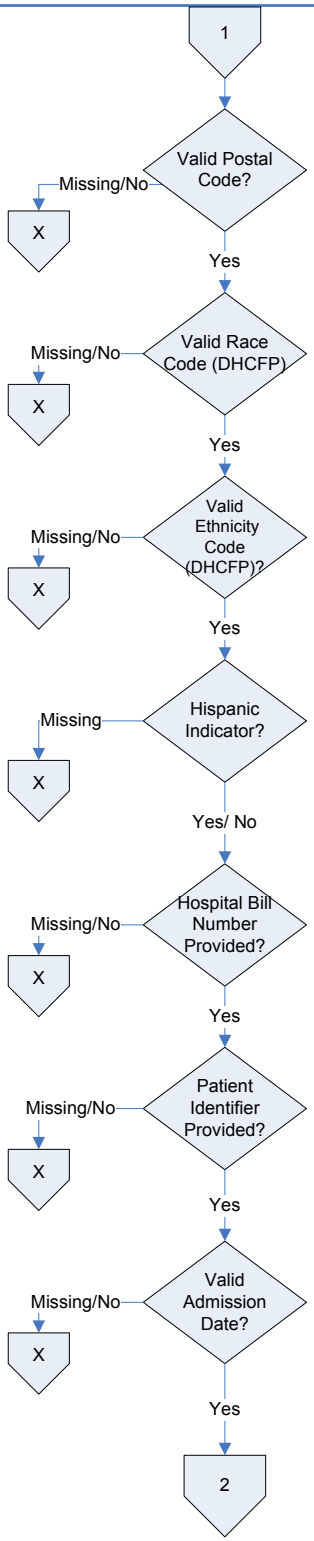
Care Coordination Measure (CCM-3)

***Numerator:** Patients for whom a written transition record was transmitted to the facility or primary physician or other health care professional designated for follow up care within 2 days of discharge

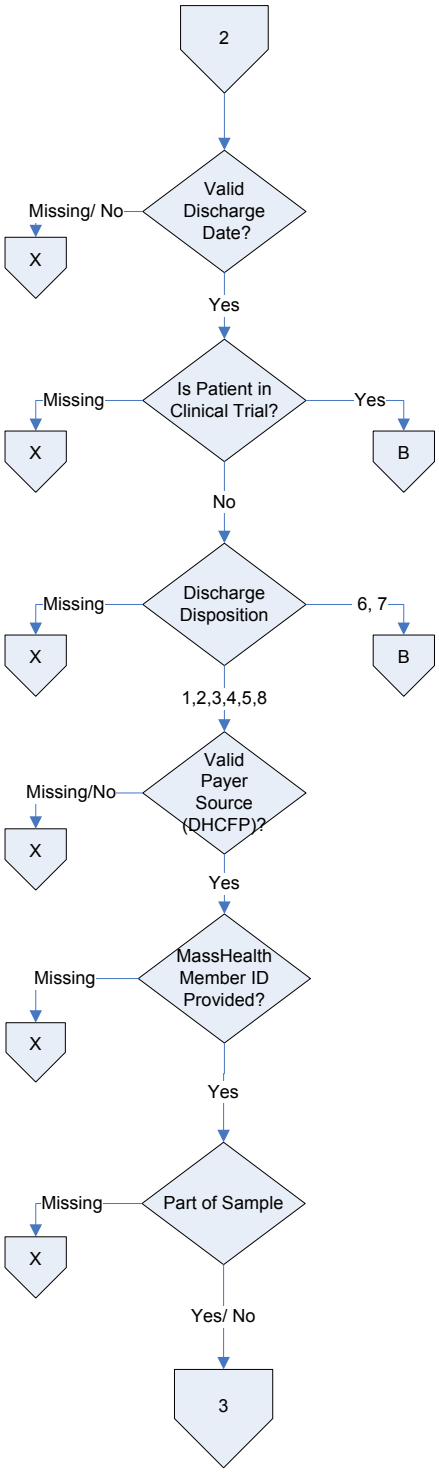
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



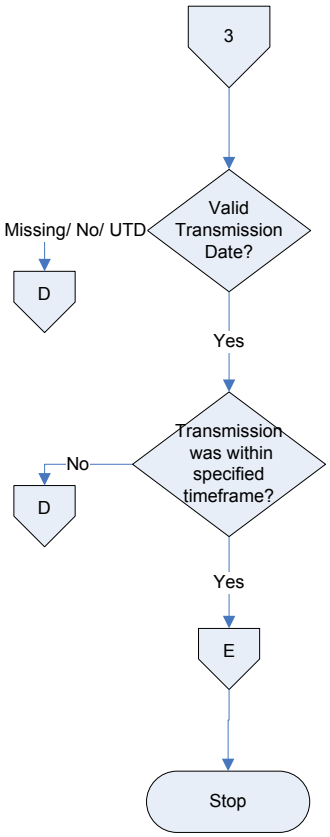
Care Coordination Measure (CCM-3)



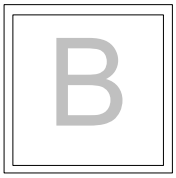
Care Coordination Measure (CCM-3)



Care Coordination Measure (CCM-3)



Review Ended
Not in Measure Population
Missing or Invalid Data
Case will be Rejected



Review Ended
Not in Measure Population
Excluded from Numerator and Denominator

Review Ended
In Measure Population
Excluded from Numerator
Included in Denominator

Measure Met
In Measure Population
Included in Numerator and Denominator

Note:
If the Transition Record was transmitted within 2 days of the discharge date, the case will be assigned to Category E.

3-F National Hospital Quality Measures Reporting Requirements

Hospitals must collect and report on the MassHealth nationally reported hospital quality measures that apply to RY2013 reporting requirements using the data collection and transmittal instructions outlined below.

The nationally reported hospital quality measures required by MassHealth include: pneumonia, surgical care infection prevention, pediatric asthma, and emergency department measures, listed in Section 2 of this EOHHS manual. Data collection and transmittal guidelines for these measures are currently published in various versions of the Specification Manuals for NHIQM. The versions that apply to RY2013 (CY 2012) and new RY2014 data reporting requirements are listed in table below.

Table 3.2 Specifications Manual for NHIQM

Versions	Discharge Data Periods
Version 4.0a and Release notes	01/01/2012 – 06/30/2012
Version 4.1 and Release notes	07/01/2012 – 12/31/2012
Version 4.2 and Release notes	01/01/2013 – 06/30/2013

Hospitals are responsible for accessing and adhering to data collection specifications for nationally reported hospital quality measures using the appropriate versions of the manuals listed in Table 3.2. Users of the 'Specifications Manual for NHIQM' are responsible for updating their software and associated documentation based on the national published manual production timelines.

1. **Community Acquired Pneumonia (PN)**
   a) **Measure Specifications and Flowchart:** Refer to the appropriate versions of the 'NHIQM Manuals**"** and relevant updates referenced in Section 2.A of this 'EOHHS Manual' that apply to instructions for reporting four quarters of CY 2012 discharge periods on this measure.

   b) **Data Dictionary:** Refer to manual cited in 1.a above for data element definitions that apply.

   c) **Data Abstraction Tool:** Refer to NHIQM manual cited in 1.a above.

   d) **Sampling Requirement:** Refer to Section 4 for MassHealth sampling requirements that apply.

   e) **XML File Format.** This manual provides an XML schema for the MassHealth Crosswalk File in **Appendix A-6** to assist Hospitals in collecting the required MassHealth identifier data elements that must be included as part of the data files. Refer to Section 5 of this manual for versions of XML schemas that apply to RY2013 quarter reporting periods.

2. **Surgical Care Infection Prevention (SCIP**)
   a) **Measure Specifications and Flowchart:** Refer to the appropriate versions of the 'NHIQM Manual"' and relevant updates referenced in Section 2.A of this 'EOHHS Manual' that apply to instructions for reporting four quarters of CY 2012 discharge periods on this measure.

   b) **Data Dictionary:** Refer to manual cited in 2.a above for data element definitions that apply.

   c) **Data Abstraction Tool:** Refer to NHIQM manual cited in 2.a above.

   d) **Sampling Requirement:** Refer to Section 4 for MassHealth sampling requirements that apply.

   e) **XML File Format:** This manual provides an XML schema for the MassHealth Crosswalk File in **Appendix A-6** to assist Hospitals in collecting the required MassHealth identifier data elements that must be included as part of the data files. Refer to Section 5 of this manual for versions of XML schemas that apply to RY2013 quarter reporting periods.

3. **Children's Asthma Care Measures (CAC)**

a) **Measure Specifications and Flowchart:** Refer to the appropriate versions of the 'NHIQM Manual"' and relevant updates referenced in Section 2.A of this 'EOHHS Manual' that apply to instructions for reporting four quarters of CY 2012 discharge periods on this measure.

Hospitals must follow the CMS transmission specifications and requirements outlined in the Hospital Clinical Data XML file layout section of the 'NHIQM Manual"' versions referenced in Section 2.A of this manual, when creating the CAC data files for submission to MassQEX.

Note that, unlike CMS, The Joint Commission (TJC) measure specifications does not allow transmission of any patient identifiers and asks for additional data elements. Therefore, if a Hospital or vendor uploads CAC measures data files they created for TJC, these will be rejected by the MassQEX portal.

b) **Data Dictionary:** Refer to NHIQM manual cited in 3.a above for data element definitions that apply.

c) **Data Abstraction Tool:** Refer to NHIQM manual cited in 3.a above.

d) **Sampling Requirement:** Refer to Section 4 for MassHealth sampling requirements that apply.

e) **XML File Format:** This manual provides an XML schema for the MassHealth Crosswalk File in ***Appendix A-6*** to assist Hospitals in collecting the required MassHealth identifier data elements that must be included as part of the CAC measures data set file. Refer to Section 5 of this manual for versions of XML schemas that apply to RY2013 quarter reporting periods.

Refer to Section 5 of this 'EOHHS Manual' for additional instructions that apply to preparation of data files that must be included as part of the MassHealth Payer files.

4. Emergency Department Measures (ED-1, ED-2)

a) **Measure Specifications and Flowchart:** Refer to the appropriate versions of the 'NHIQM Manual"' and relevant updates referenced in Section 2.A of this 'EOHHS Manual' that apply to instructions for calendar year 2013 reporting as of Q1-2013 discharge periods on this measure.

b) **Data Dictionary:** Refer to NHIQM manual cited in 4.a above for data element definitions that apply.

c) **Data Abstraction Tool:** Refer to manual cited in 4.a above.

d) **Sampling Requirement:** Refer to Section 4 for MassHealth sampling requirements that apply. GI

e) **XML File Format:** This manual provides an XML schema for the MassHealth Crosswalk File in **Appendix A-6** to assist Hospitals in collecting the required MassHealth identifier data elements that must be included as part of the data files. Refer to Section 5 of this manual for versions of XML schemas that apply to RY2013 quarter reporting periods

Contact the MassQEX Help Desk at 781-419-2818 if you require technical support or have questions on how to prepare the required XML Crosswalk files when preparing any of the nationally reported hospital measures listed above.

SECTION 4. MASSHEALTH POPULATION SAMPLING SPECIFICATIONS

This section defines the patient population and sampling specifications that apply to MassHealth measures reporting requirements. Definitions contained in this section align with guidelines set forth in national manuals, wherever possible to minimize data collection burden.

A. Definition of Measure Population. The Specifications Manual for NHIQM defines "Initial Patient Population" as all patients who share a common set of clinical (ICD-9-CM principle diagnosis, procedure codes) and administrative (admission date, ICD-9-CM principle diagnosis or procedure codes, payer source, age, etc.) characteristics for a given condition from which the sample must be drawn and represent.

For the MassHealth Acute Hospital RFA quality measures reporting requirement, the term 'MassHealth Initial Patient Population' is used to refer to all patients who share the common set of clinical and administrative data elements (Medicaid payer codes, age, etc) that are eligible to be sampled for dates of service relevant to discharge data periods. All relevant ICD-9-CM codes must be identified prior to applying data integrity filters, measure exclusions and sampling methods.

B. Sampling Methodology. Sampling is the process of selecting observations from a patient population without collecting data for the entire eligible population. A well designed sample is based on a selection of cases that provides sufficient information for calculating measure rates. Sample size must be carefully determined and cases randomly selected to ensure meaningful and valid sample-based performance measures data**.**

1. Order of Data Flow. The order of data flow for selecting cases involves the following steps:
   a. Identify the Initial Patient Population using definitions in Section 4.A above;
   b. Pull a sample of medical records for each measure set based on sample size requirements;
   c. Follow either simple random or systematic random sampling approach described below; and
   d. Abstract specific data elements needed for each measure.

Hospitals may sample their population or report their entire population if desired. However, hospitals whose 'MassHealth ICD Patient Population' size is less than the minimum number of cases can not sample and should refer to Tables provided below to determine the minimum number of cases that need to be sampled for each measure category. While over-sampling is not required, hospitals may choose to submit additional observations to increase the precision of their rates.

2. Sampling Approach. Random sampling is a precise procedure that allows you to control the likelihood of specific cases being selected. Hospitals can achieve this by using one of the following approaches:

   a. ***Simple random sampling***: selecting a sample size *(n)* from the population of size *(N)* so that every case has the same chance of being selected into the sample; or

   b. ***Systematic random sampling:*** selecting every k^{th} record from a population of size *N* so that a sample *n* is obtained, where $k \leq N/n$. The first sample record (i.e.: the starting point) must be randomly selected before taking every k^{th} record. This requires a two step process that includes:
      i.) randomly select the starting point by choosing a number between one and k using a table of random numbers or a computer generated random number; and then
      ii.) select every k^{th} record until the selection of the sample size is completed.

The national manuals provide sampling approaches based on patients drawn from an all payer population (Medicare & non-Medicare) that will require adjustment for MassHealth P4P measures reporting. Refer to the national manuals for detailed examples of how to apply the random or systematic sampling techniques described above.

C. Medicaid Sampling Specifications. The sampling methods selected to establish sample size requirements for the MassHealth acute hospital quality reporting on each measure set is based on statistical power analysis. This method enables the calculation of the minimum number of discharges necessary to detect changes in the measure rates and hospital performance data and ensure that a statistically valid sample is drawn. The following guidelines apply to MassHealth sampling specifications.

1. **Sample Size Requirements.** Hospitals must sample cases from all MassHealth inpatient paid claims using *instructions provided below* and perform medical chart abstraction for the sampled claims. The number sampled by Hospitals will vary by the volume of the patients for that provider that meets the criteria for **'**MassHealth Initial Patient Population**'** for each measure as defined in Section 4.A above and throughout this manual. The minimum required sample size is based on the estimated volume of MassHealth discharges required for each measure.

   The MassHealth sample size requirements for the PN, SCIP, CAC, ED measures differ from the sampling specifications published in NHIQM manuals because they are designed to meet MassHealth sampling specifications for a statistically valid sample. In particular, the SCIP and CAC sampling required by MassHealth are designed to produce aggregate rates and not intended to produce rates for several strata as required for national reporting.

2. **Dates of Service**. Hospitals must submit measures data for all discharge quarter reporting periods, specified in the Acute RFA and Section 1.C of this manual using the sample size requirements for each measure provided in tables below.

3. ***All Medicaid Payer Sampling Method.*** Sample size requirements should be modified to capture two distinct Medicaid payer population groups. Each population group will be sampled independently based on discharges for that group.

   The term 'MassHealth Initial Patient Population' will consist of all Medicaid payer code inclusions (in Table 2.2) to be collected as two distinct Medicaid payer source population data sets defined as follows.

   a. **MassHealth FFS/PCC Plan Payer Source**: includes member populations, enrolled in Primary Care Clinician Plan (PCCP) and in fee-for-service (FFS) insurance programs, where hospital services are covered under Acute Hospital RFA contract payment arrangements.

   b. **All Other Medicaid Payer Source:** includes member populations, enrolled in one of the six MassHealth Managed Care Plans and other MassHealth insurance programs, where hospital services are covered under other MassHealth capitation payment arrangements.

   Sampling for nationally reported measures (PN, SCIP, CAC, ED), required by MassHealth, must also be conducted independently for the two Medicaid payer population groups using methods outlined above. These files must include payer codes in the MassHealth Crosswalk File per instructions in this EOHHS Manual

4. ***All Medicaid Payer Sampling Steps*.** The order of data flow must be modified when selecting cases for the two distinct Medicaid payer source groups as follows:

   - **Step 1.** Identify the 'MassHealth Initial ICD Population' for each measure based on the measure specifications and dates of service.

   - **Step 2**.Identify and include cases with the appropriate payer source codes and stratify into two Medicaid payer groups as defined above.

   - **Step 3.** Identify sample size required for each Medicaid payer group independently using sampling tables provided below.

   - **Step 4**. Apply the sampling approach (in Section 4.B) to each payer group to identify charts.

   - **Step 5**. Begin medical chart abstraction of specified measure on cases selected.

   The above method begins with all Medicaid payer population set and then extracts the initial ICD measure population and stratifies data into two (2) distinct Medicaid payer source groups. The steps outlined above can be followed to identify cases for all measures being submitted.

D. Sampling Options. Hospitals have the option of sampling either quarterly (option A) or monthly (option B) for each measure. Hospitals that choose to sample must select and utilize only one option *consistently*

(either quarterly or monthly for sampling), within a calendar year quarter submission cycle. Regardless of the option used, hospitals must ensure that sampling procedures consistently produce statistically valid and useful data. Due to measure exclusions, hospitals selecting sample cases ***must*** submit ***at least*** the minimum required sample size. The tables provided below, for each sampling option, automatically build the number of cases needed to obtain the required sample sizes.

1) Quarterly Sampling (Option A): Hospitals that choose the quarterly sampling option must use the minimum required sample sizes specified in Table 4.1 below.

Table 4.1 QUARTERLY Sample Size Requirement for Each Measure

Number of MassHealth Discharges **Per QUARTER** (ICD Patient Population Size)	**MassHealth FFS/ PCCP Payer Source**	**All Other Medicaid Payer Source**
	Minimum Required Sample Size "n"	Minimum Required Sample Size "n"
1-29	No sampling; 100% of ICD Population is required	No sampling; 100% of ICD Population is required
30-59	30	30
60-99	46	46
100-129	54	54
130-159	60	60
> 159	65	65

Table 4.1 displays the minimum sample sizes (n) required on each quality measure, *listed under Table 2.1 of this EHS Manual,* for the quarterly sampling option that is consolidated into one table. The quarterly sample size requirements are identified for the two Medicaid payer source groups. Hospitals must ensure that the cases selected represent the combined sample size amounts for both Medicaid payer population groups on each measure listed in Section 2.A of this manual.

2) Monthly Sampling (Option B): Hospitals that choose the monthly sampling option must use the minimum required sample sizes specified in Table 4.2 below.

Table 4.2 MONTHLY Sample Size Requirement for Each Measure

Number of MassHealth Discharges **Per MONTH** (ICD Patient Population Size)	**MassHealth FFS/ PCCP Payer Source**	**All Other Medicaid Payer Source**
	Minimum Required Sample Size "n"	Minimum Required Sample Size "n"
1-10	No sampling; 100% of ICD Population is required	No sampling; 100% of ICD Population is required
11-20	11	11
21-33	16	16
34-43	18	18
44-53	20	20
> 54	22	22

Table 4.2 displays the minimum sample sizes (n) required on each quality measure, *listed under Table 2.1 of this EHS Manual,* for the monthly sampling option that is consolidated into one table. The monthly sample size requirements are identified for the two Medicaid payer source groups. Hospitals must ensure that the cases selected represent the combined sample size amounts for both Medicaid payer population groups on each measure listed in Section 2.A of this manual.

The term "no sampling" used in the above tables means that sampling does not apply when discharge volume per quarter or per month falls in the ranges shown. A hospital may choose to submit a larger sample size than is required in the above tables. Hospitals whose MassHealth Initial Patient Population size is less than the minimum number of cases per quarter or month for the measure ***cannot*** use a sampling option. Instead the entire ICD patient population size is required to be sampled and must be submitted in the electronic data files. Hospitals must use the sample size requirement tables provided above to determine the minimum number of cases that need to be sampled for each measure population.

Examples on How to Sample

The following examples illustrate how to identify and independently sample cases from both Medicaid payer source groups using the sampling steps and sample size tables described above.

Example #1 (Hospital A): Sampling of Maternity Measure	Example # 2 (Hospital B): Sampling of Care Coordination Measure
Hospital A identifies 32 cases for the MassHealth FFS/PCCP payer source and 8 cases for All Other Medicaid payer source group in their MAT-1 initial ICD patient population. Following the quarterly sampling size requirements in Table 4.1 under maternity measures row header shows Hospital A would be required to submit: n=30 cases for the MassHealth FFS/PCCP *plus* n=8 cases from the All Other Medicaid payer group (which is 100% of ICD population).	Hospital B identifies 200 MassHealth FFS/PCCP cases and 60 cases for All Other Medicaid groups in their CCM-2 initial ICD patient population. Following the quarterly sampling Table 4.1, under care coordination measures row header shows Hospital B would be required to submit: n=65 cases for the MassHealth FFS/PCCP plus n=46 cases for the All Other Medicaid payer group

E. Medicaid ICD Patient Population Data

Hospitals are required to submit information on the MassHealth ICD Patient Population and sample count data. MassHealth ICD Patient Population and sample count data are used to evaluate the completeness of all files submitted by the hospital, in accordance with the MassHealth sampling requirements stated above..

1) ***Definitions of ICD Data***. The ICD patient population data must include the following information for each measure set submitted that are defined as follows:

- **ICD Population Size** - refers to count of patient population with all relevant ICD-9-CM diagnosis and procedure codes included in the measure as defined in Section 4.A above.
- ***MassHealth FFS/PCCP ICD Population Size*** **–** refers to count of patient population with all relevant ICD-9-CM diagnosis or procedure codes included in the measure that have payer codes 103 and 104 as defined in Section 2.B. of this manual.
- ***All Other Medicaid Payer ICD Population Size*** **-** refers to count of patient population with all relevant ICD-9-CM diagnosis or procedure codes included in the measure that have payer codes 108, 110, 113, 118, 207, 208, 98, 119, 178 as defined in Section 2.B of this manual. *Refer to the Appendix A-8 (v6.1) payer source data element on updated instructions for payer code 98.*
- ***All Payer ICD Population Size*** – refers to count of patient population with all relevant ICD-9-CM diagnosis and procedure codes included in the measure with Medicare and Non-Medicare payer codes. This data is required for the PN and SCIP measures only.
- ***Sample Size*** – indicates whether or not the hospital has sampled data for the time period being reported for payer source stated. If no sampling was done then enter the total sample count.

2) ICD On-line Data Entry Form Requirements

- The ICD population information must be submitted as aggregate data using the on-line data entry form located in the secure web portal, as described in Section 5 of this manual. Only Hospitals, not data vendors, are authorized to enter ICD population data via the web portal.
- Failure to comply with on-line data entry of ICD population data will result in the information being credited as not received or meeting data completeness requirements, as defined in Section 2.D of this manual

Refer to **Section 5** for detailed instructions on data requirements and timelines that apply to ICD patient population data entry.

SECTION 5. DATA TRANSMITTAL GUIDELINES

This section outlines the technical guidelines for preparation and transmittal of all measures data files required under the Acute RFA. Hospitals and vendors must comply with data transmittal instructions using the appropriate versions of XML schemas provided in this manual. Refer to Section 1.B and 2.A of this manual for other details.

A. Electronic Data File Contents. Each measure must be submitted in separate data files using instructions provided below.

1. **XML File Format.** All measures data must be submitted as electronic files using the appropriate updated versions of the XML schemas that apply to reporting quarters as follows:

   a) As of Q1-2012 and Q2-2012 (0/1/01/12- 6/30/12) reporting, data files for all measures must use appropriate versions of XML schemas in EOHHS Manual (5.0).

   b) As of Q3-2012 (07/01/12) reporting, data files for maternity (MAT) must use version 6.0 of XML Schema for MassHealth Specific Measures, *and version 6.1 effective with Q1-2013 reporting*.

   c) As of Q3-2012 (07/01/12) reporting, data files for pneumonia (PN), surgical care infection prevention (SCIP) and pediatric asthma (CAC) must use the XML schema layout in appropriate versions of the NHIQM manuals listed in Section 2.A *plus version 6.0 XML Schema for* MassHealth Identifier Crosswalk file, *and version 6.1 effective with Q1-2013 reporting. See section 2.D.5 of this manual for additional details.*

   Each XML file may contain data for only one admission per each provider Hospital on each of the measures a hospital is eligible to report on.

2. **MassHealth Payer File.** This file must include all measures data the hospital is eligible to report on for the required discharge data period stated in Section 1.C of this manual. This file should contain all required clinical and administrative data elements for the MassHealth records sampled on each measure, as defined in Section 4 of this manual.

3. **MassHealth Identifier Crosswalk File.** This file should include all unique MassHealth patient identifier administrative data elements, as defined in Section 2 and the data dictionary in this manual. This XML schema file is required for the PN, SCIP, CAC and ED measure sets to ensure that data files pulled from national databases have a corresponding MassHealth patient identifier record. All measure level PN, SCIP, CAC, ED data files submitted without **first** submitting a corresponding MassHealth Identifier Crosswalk file provided in **Appendix A-7,** and instructions in Section 3.F of this manual, will be rejected by the web portal.

4. **Data Transmittal Process.** Hospitals must submit all required data files via the secure web portal described in Section 5. Data files are not accepted in file formats other than those described above. A summary of the required data submission contents is provided below.

Table 5-1. Summary of Electronic Data File Submission Contents

Quality Measures	MassHealth Payer File	MassHealth Crosswalk File	ICD Population Data (On-line Entry Form)
MAT-1	YES	NO	YES
MAT- 2a, 2b	YES	NO	YES
MAT-3	YES	NO	YES
CCM-2, CCM-3, CCM-1	YES	NO	YES
CAC - 1a, 2a, 3	YES	YES	YES
PN - 3b, 6	YES	YES	YES
SCIP (1a, 2a, 3a)	YES	YES	YES
ED-1, ED-2 (as of Q3-2012)	YES	YES	YES

Hospitals have the option to delete electronic files that have been uploaded during a given data production submission cycle. Refer to the detailed instructions under "MassHealth Data Deletion Request Procedures" that apply to deleting data files from the portal environment in Section 5.C(5) below.

5. **Online ICD-9 Population Data Entry Form.** Hospitals are required to submit aggregate ICD population data that accompanies the measures data files. All ICD data must be reported via the portal using the on-line data entry form which is only visible after you have logged into the secure web portal. This data must include the total counts related to each quarterly submission cycle due for the measures being reported in the electronic data files, as defined in Section 4.D of this manual. If the hospital has no cases to report during a given quarter then zero's (0) must be entered in all the fields provided on the on-line data entry form. Failure to enter zeros will render the Hospital having missing data resulting in non-compliance status.

   Effective with Q1-2012 data, Hospitals are required to enter aggregate ICD population data by Medicaid payer groups. As shown in Figure 1, the updated online form has separate data entry fields for ICD-9 counts and sample sizes on each measure category for the two Medicaid payer source groups.

Figure 1.
Online ICD Data entry Form for All Medicaid Payer Data

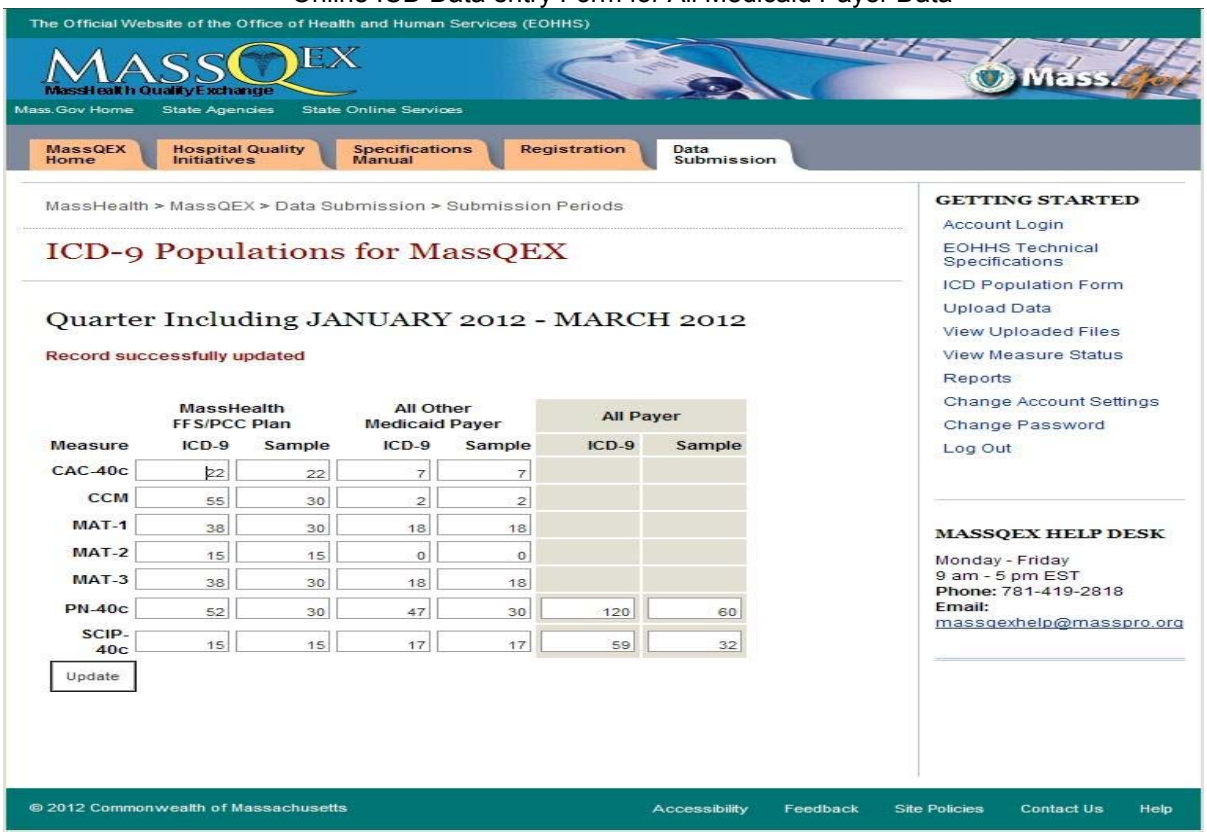


Figure 1 illustrates an ICD form that is properly filled out, including zero (0) entries, where applicable, to be in compliance with data requirements. The online ICD data information should be submitted within fifteen (15) days prior to the close of each Acute Hospital RFA submission deadline and can be edited or updated up until the final submission due dates.

6. **Submission Cycle Deadlines**. All measures data file uploads and online ICD data entry must be completed by the close of business day (5 pm Eastern Time) on the submission due dates listed for the *Acute RFA rate year* and Section 1.C of this manual. Submission timelines are also posted on the MassQEX website. Hospitals may not request an extension of submission deadlines and can not request to resubmit corrections to data files after the portal has closed. *Refer to Section 5.G of this manual for other information that applies to requesting a data reporting extension.*

7. **Data Completeness Requirement**. Data files that contain incorrect or partial information to calculate measurement categories will be rejected by the portal. All uploaded clinical data files must also have corresponding ICD population data entry completed per instructions noted above. Refer to Section 2.D of this manual for additional information.

B. MassQEX Portal User Accounts. EOHHS has designated the MassHealth Quality Exchange (MassQEX) as the secure portal for submitting all required electronic data files and information as outlined in **Section 5** in this manual. The MassQEX website portal URL address is: http://www.mass.gov/masshealth/massqex. This portal is the only approved method to securely transmit private data files between the Hospitals and the EOHHS contractor (Masspro).

The MassQEX portal is designed to resemble features from existing websites for national hospital data collection and reporting systems. The portal is divided into three sections: user accounts, portal system requirements for submission, and reporting repository as described below. All aspects of the MassQEX portal are managed by the EOHHS contractor (Masspro).

1. User Accounts. All Hospitals must set up user accounts to access the secure web portal. The EOHHS contractor will set up and configure all MassQEX user accounts.

a) ***Registration Process***: below are the steps to register a new user:

- Each hospital must identify the individual users that will be authorized to submit and conduct all data transactions on the Hospitals behalf. The users can be individuals from hospital staff and/or hospital third-party vendors.
- There will be a maximum of **three** accounts per provider (e.g.: hospital or third-party vendor) identified as the 'registered user'. New users will be required to complete registrations forms on-line before being granted access to the secure web portal.
- The new user must complete a registration form and then sign and date it in the presence of a Notary Public, who will issue the Notary's stamp and seal on the form.
- The highest-level executive at the hospital site must sign the notarized form to authorize the individual designated to be the registered user for that site.
- Originals of the completed registration forms must be mailed to the EOHHS contractor for the account to be activated.
- Hospitals and third party vendor organizations are responsible for updating their registered user accounts information whenever staffing changes occur.

b) ***Logging into the System:*** The portal provides instructions for setting up a password and is equipped with a 'forgot my password' option that will have the following functionality:

- A temporary password, valid for one time use, will be transmitted to the user's registered email account after successfully answering three randomly selected security questions.
- The temporary password will expire if it is not used within four hours.
- Upon logging into the system, the user will be required to choose a new password.

C. Portal System Requirements. The web portal's data submission tool allows users to securely transmit data files to the web portal. Listed below are the requirements for transmitting data. Any deviation from the requirements listed below may result in data submissions not being processed.

1) The System Requirements are:

- Minimum of 330 MHZ processor or better with a minimum of 125MB free disk space
- Windows XP or higher
- 256 MB of RAM or higher
- High speed internet connect of 128 kbps or higher
- Internet Explorer 7
- Browser security level of Medium or lower
- Adequate operating system rights to allow provider sites to properly install programs and modify/edit registry entries
- Pop-ups allowed for **URL http://www.mass.gov/masshealth/massqex**.
- Java Runtime Environment (JRE) version 1.6.0_14 or higher. Available for download from **http://java.sun.com/j2se/desktopjava/jre/index.jsp**

2) **System Test**. Users can test their system's readiness by going to the MassQEX website at http://www.mass.gov/masshealth/massqex and conducting a System Test. The test will scan the system for the following information:

- JavaScript enabled browser
- Java enabled browser
- Applet enabled browser
- Java version 1.6.0_14 or higher
- Java Security Policy Files

If a system does not pass one of the scans, the user will receive instructions as to what corrective actions are needed. When a successful test has been conducted, the user will receive notification that the portal is ready to be used.

3) **Test Data.** All users are required to successfully complete a test submission for each of the reporting measures prior to uploading final production data. Certification of successful transmission is required prior to the permission being granted for final production level submissions. This certification will serve as proof that a provider's system is capable of generating properly formatted XML files based on CMS, TJC and MassHealth XML schemas.

Below is additional information about using the portal data submission tool to run test submissions:

- Test files will be processed in a near real time environment.
- The user will be able to access reports that show summary success or failure information as well as reports that provide detailed descriptions of errors detected in a test submission.
- All errors must be addressed before certification of a measure can be given.
- There is no limit to the number of test files that can be submitted.
- Test files will not be permanently stored on EOHHS contactor (Masspro) servers.
- The test environment remains open throughout the entire rate year Acute Hospital RFA to allow registered users to perform ongoing tests in preparation for subsequent submission cycles.

4) **Production Data.** Providers are required to use the EOHHS contractor provided upload software for the transmission of data to the web portal. The upload application provides:

- Single and multiple file data submission
- Data compression to reduce transmission sizes
- Data encryption utilizing asymmetric key pairs
- Filename
    - Name cannot exceed 45 characters
    - Filenames are limited to the following character ranges
        - a – z
        - A – Z
        - 0 – 9
    - Underscores will replace spaces in all filenames
    - Filenames containing illegal characters will not be uploaded or processed

Upon completion of data transmissions, users will be able to run reports that show the success or failure of processing. The production environment does not remain open throughout the entire Acute Hospital RFA rate year period. The production environment is activated approximately 60 days prior to submission deadlines and then closed after each submission due date. Notices are sent via the MassQEX list-serve to announce when the portal environment is open for data production prior to each submission deadline.

5) **MassHealth Data Deletion Request Procedures.** The MassQEX portal allows hospitals and/or data vendors to delete data files that have been uploaded during an active data production cycle as described above. The following guidelines apply to data file deletions:

i. The purpose of the delete request feature is to remove previously submitted clinical data. In order to remove clinical data files you must use the XML Schema MassHealth Deletion Request File Layout in ***Appendix A-7*** of this EOHHS manual. The XML file structure has been

designated to closely replicate the structure of the MassHealth Identifier Crosswalk file. The delete request must include all unique patient identifier information.

ii. A successfully processed delete request will remove any measure level submission that corresponds to the unique patient identifier information submitted with the delete request.
iii. This will delete all matching submissions for the period at that time not just the last submission.
iv. Note that a delete request will only remove the measure data and not the historical submission information. Any future data uploads are not affected by any previous delete requests.
v. Electronic file delete requests can only be made for the current submission cycle period. Once a submission cycle has closed file delete requests can no longer be made for that period.

6) Portal Transmittal Specifications. The portal environment is periodically programmed to prepare for and support the changes in transmittal of revised technical specifications that go into effect with each quarter reporting cycle periods listed in Section 1.C of this manual.

Changes to the portal environment are made to accommodate updates on the data transmittal specifications to the maternity and care coordination measures as defined in Section 3 of this EOHHS manual.

Changes to the portal environment are also made to accommodate updates on the data transmittal specifications for the pneumonia, surgical care infection prevention, pediatric asthma and new emergency department measures as defined by the Specifications Manual for NHIQM versions listed under Section 2.B of this EOHHS manual.

Hospitals are responsible for transmitting data for PN, SCIP, CAC and ED measures using the appropriate versions of the NHIQM Manuals. Users of the 'Specifications Manual for NHIQM' must update their software and associated documentation based on the national published manual production timelines.

D. MassQEX Portal Report Repository

The web portal is equipped with an on-line report repository that provides users with summary information on data files submitted to the MassQEX clinical data warehouse. Reports are generated for processing of test and production level data that can be viewed and printed on-line in a PDF format.

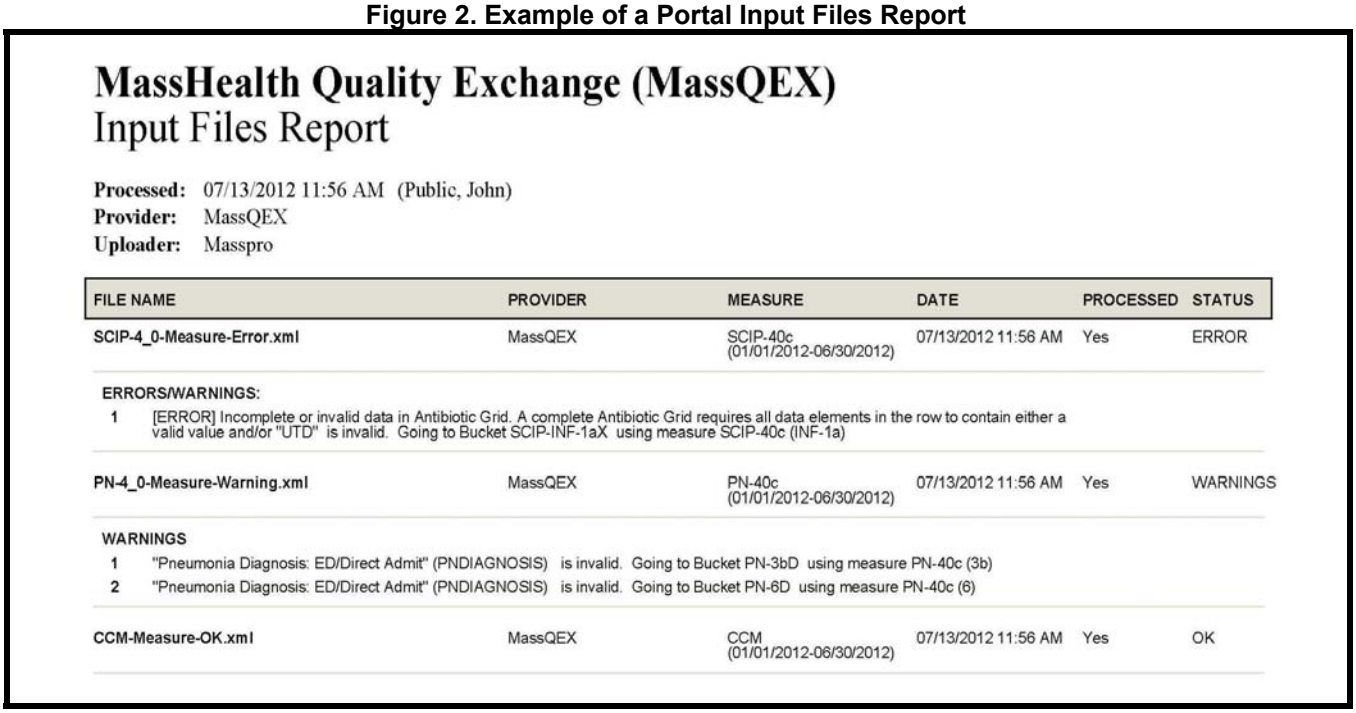
MassQEX enhanced portal functionality for hospitals to be able to generate reports that provide feedback on content of submissions files uploaded into the portal environment. The report repository includes Input file reports plus two types of hospital summary reports that are described below.

1) **Input Files Report**. This report provides detailed information on specifications met for all test and production level data files submitted via the web portal to the MassQEX clinical data warehouse. These reports are *available to both the hospital and data vendor f*or previously submitted data files and for both test and production submissions.

   To view the 'Input Files Report', the hospital or data vendor user will click on the "*View Uploaded Files*" link from the MassQEX portal home page. Clicking on this link will bring up the View Uploaded Files web page, which shows the last five file submissions to the MassQEX clinical data warehouse, including whether the data transmittal was a test or production data submission. Clicking on one of these submissions will bring up a list of the XML input files for that submission. From the "Input Files" screen, the user can click the "Print Report" link to generate the 'Input Files Report' for that submission.

   The 'Input Files Report' is available for all submissions, regardless of whether they are test or production submissions. Submitters of test data will find the reports useful because they will indicate where the submitted data is either incomplete or incorrect and will thus enable the user to correct their data files before submitting them as "production" data to the MassQEX clinical data warehouse. Below is an example of an 'Input Files Report' generated from the portal and details on how to read this report.

Figure 2. Example of a Portal Input Files Report



MassHealth Quality Exchange (MassQEX)
Input Files Report

Processed: 07/13/2012 11:56 AM (Public, John)
Provider: MassQEX
Uploader: Masspro

FILE NAME	PROVIDER	MEASURE	DATE	PROCESSED	STATUS
SCIP-4_0-Measure-Error.xml	MassQEX	SCIP-40c (01/01/2012-06/30/2012)	07/13/2012 11:56 AM	Yes	ERROR
ERRORS/WARNINGS: 1 [ERROR] Incomplete or invalid data in Antibiotic Grid. A complete Antibiotic Grid requires all data elements in the row to contain either a valid value and/or "UTD" is invalid. Going to Bucket SCIP-INF-1aX using measure SCIP-40c (INF-1a)					
PN-4_0-Measure-Warning.xml	MassQEX	PN-40c (01/01/2012-06/30/2012)	07/13/2012 11:56 AM	Yes	WARNINGS
WARNINGS 1 "Pneumonia Diagnosis: ED/Direct Admit" (PNDIAGNOSIS) is invalid. Going to Bucket PN-3bD using measure PN-40c (3b) 2 "Pneumonia Diagnosis: ED/Direct Admit" (PNDIAGNOSIS) is invalid. Going to Bucket PN-6D using measure PN-40c (6)					
CCM-Measure-OK.xml	MassQEX	CCM (01/01/2012-06/30/2012)	07/13/2012 11:56 AM	Yes	OK

The MassQEX 'Input Files Report' contains the following information:

- File Name – the name of the XML file that was submitted
- Provider – the name of the submitting provider
- Measure – the appropriate MassQEX measure name (and the data submission quarter)
- Date – the date that the XML file was submitted
- Processed – indicates whether the file was processed
- Status – indicates if the file processing ended with an error, warning or an OK status.

In addition to the above information, any warning or error messages resulting from data fie submission will be displayed. The following messages will be generated, under the status column, when the data files contain either incorrect or incomplete information:

i. ***Error Message.*** An error message is a "hard edit" – receiving such a message indicates that the file was incorrect or incomplete such that the submission was fatal, and the file was not accepted into the MassQEX clinical data warehouse. An error message identifies a problem with the file which needs to be corrected prior to resubmission by the hospital and/or vendor.

ii. ***Warning Message.*** If the message was a warning (i.e. without the word "error" preceding it), then the message was a "soft edit" in which the file submission was not fatal, and the file was accepted into the MassQEX clinical data warehouse. Even though the file submission was accepted, the warning message is still provided to the submitter for educational purposes. These soft edits do not need to be corrected unless the submitter chooses to do so. In contrast, an error message informs the submitter that an error has occurred that has prevented the data file from being uploaded into the MassQEX clinical data warehouse.

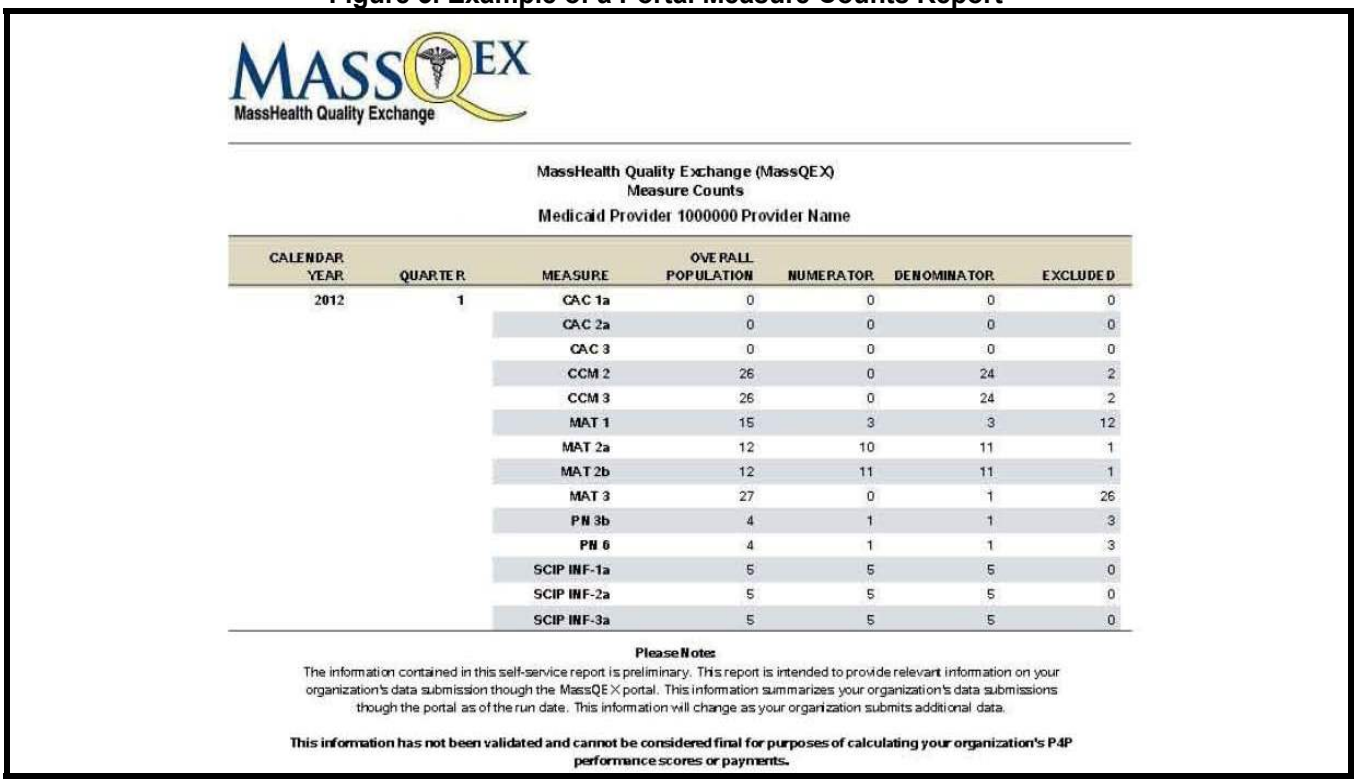
iii. ***OK Message.*** If message has OK status, then the data file was processed with no errors or warnings as described above.

Hospitals and data vendors are responsible for reviewing all details on the "Input Files Report" to ensure specifications and data completeness are met as part of the submission cycle process.

2) **Hospital Summary Reports.** Beginning RY2011, EOHHS expanded portal functionality for hospitals to be able to run user-initiated data summary profile reports on demand. The portal will generate two types of reports that display an aggregate summary of measure and ICD-9 population counts that are described below.

a) **Measure Counts Report.** This report aggregates and summarizes the information on the individual Input Files Report (described above) that presents overall counts of cases that met the numerator and denominator specifications for each measure the hospital reports on as well as cases excluded from denominator. Below is an example of the report that will be generated from the portal and details on how to read this report.

Figure 3. Example of a Portal Measure Counts Report



MassHealth Quality Exchange (MassQEX)
Measure Counts
Medicaid Provider 1000000 Provider Name

CALENDAR YEAR	QUARTER	MEASURE	OVERALL POPULATION	NUMERATOR	DENOMINATOR	EXCLUDED
2012	1	CAC 1a	0	0	0	0
		CAC 2a	0	0	0	0
		CAC 3	0	0	0	0
		CCM 2	26	0	24	2
		CCM 3	26	0	24	2
		MAT 1	15	3	3	12
		MAT 2a	12	10	11	1
		MAT 2b	12	11	11	1
		MAT 3	27	0	1	26
		PN 3b	4	1	1	3
		PN 6	4	1	1	3
		SCIP INF-1a	5	5	5	0
		SCIP INF-2a	5	5	5	0
		SCIP INF-3a	5	5	5	0

Please Note:
The information contained in this self-service report is preliminary. This report is intended to provide relevant information on your organization's data submission though the MassQEX portal. This information summarizes your organization's data submissions though the portal as of the run date. This information will change as your organization submits additional data.

This information has not been validated and cannot be considered final for purposes of calculating your organization's P4P performance scores or payments.

The MassQEX 'Measure Counts Report' contains the following information:

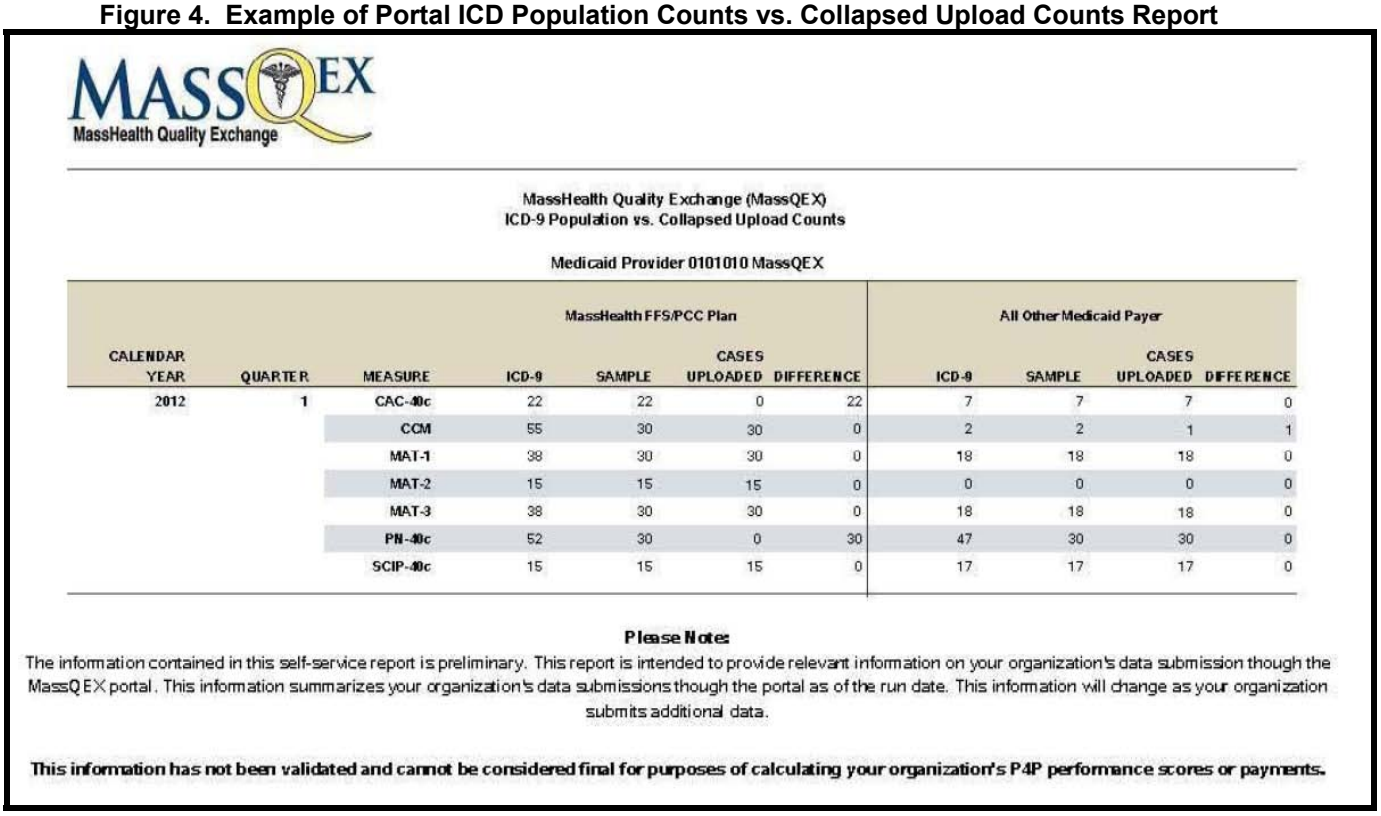
- Calendar Year - the full (Jan-Dec) measurement period that apply to discharge data
- Quarter – the discharge data period that apply to quarters of a calendar year
- Measure – the measure ID as defined in the MassQEX portal
- Overall Population – the sum of the denominator and the excluded counts
- Numerator - the counts that met the criteria for inclusion in the measure numerator
- Denominator - the counts that met the criteria for inclusion in the measure denominator
- Excluded – the number of cases that did not meet the criteria for denominator

To view the 'Measure Counts Report', the user will click on the '*Reports*' link from the menu on the right side of the MassQEX portal home page. Clicking on this link leads to a web page that displays links to the 'Input Files Report" and the new user-initiated reports. The hospital user can specify report criteria such as calendar year and/or quarter, which allows reports to be generated for the calendar year reporting period being requested. From the screen, the user can click the "Print Report" link to generate the report. This report is not designed to display measure counts by the two Medicaid payer population sets.

The 'Measure Counts Report' is available for all data transmittals completed as part of the production level submissions**.** Hospitals will find this report useful because it provides an interim summary on cases that met the measure numerator and denominator specifications as files are submitted. This report is intended for MassQEX portal data management purposes only and does not represent the EOHHS hospital measure rate results used to calculate performance scores**.**

b) **The ICD-9 Population vs. Collapsed Upload Counts Report.** The portal user can also generate a report that aggregates and summarizes the information on the ICD-9 population data entered by the hospital on-line via the portal, with the actual uploaded cases that have been processed at the time of the submission cycle. Below is an example of the report that will be generated from the portal and details on how to read this report.

Figure 4. Example of Portal ICD Population Counts vs. Collapsed Upload Counts Report



MassHealth Quality Exchange (MassQEX)
ICD-9 Population vs. Collapsed Upload Counts

Medicaid Provider 0101010 MassQEX

			MassHealth FFS/PCC Plan				All Other Medicaid Payer			
CALENDAR YEAR	QUARTER	MEASURE	ICD-9	SAMPLE	CASES UPLOADED	DIFFERENCE	ICD-9	SAMPLE	CASES UPLOADED	DIFFERENCE
2012	1	CAC-40c	22	22	0	22	7	7	7	0
		CCM	55	30	30	0	2	2	1	1
		MAT-1	38	30	30	0	18	18	18	0
		MAT-2	15	15	15	0	0	0	0	0
		MAT-3	38	30	30	0	18	18	18	0
		PN-40c	52	30	0	30	47	30	30	0
		SCIP-40c	15	15	15	0	17	17	17	0

Please Note:
The information contained in this self-service report is preliminary. This report is intended to provide relevant information on your organization's data submission though the MassQEX portal. This information summarizes your organization's data submissions though the portal as of the run date. This information will change as your organization submits additional data.

This information has not been validated and cannot be considered final for purposes of calculating your organization's P4P performance scores or payments.

The updated MassQEX 'ICD-9 Population vs. Collapsed Upload Counts Report' contains the following information displayed by the two Medicaid payer population sets entered:

- Calendar Year - the full (Jan-Dec) measurement period that apply to discharge data
- Quarter – the discharge data period that apply to quarters of a calendar year
- Measure – the measure ID as defined in the MassQEX portal
- ICD-9 – the hospital reported count case as defined in Section 4.D and 5.5 of this manual.
- Sample – the hospital reported count of cases sampled as defined in Section 4.D of this manual.
- Cases Uploaded -- the actual cases received, processed and aggregated for production level data.
- Difference - the difference between sample counts entered compared to actual cases uploaded and processed for production level data

To view the 'ICD-9 Population vs. Collapsed Upload Counts Report' the user will click on the '*Reports'* link from the menu on the right side of the MassQEX portal home page. Clicking on this link leads to a web page that displays links to the 'Input Files Report' and the new user-initiated reports. The hospital user can specify criteria, such as calendar year and/or quarter, which allow reports to be generated for the calendar year reporting period being requested. From the screen, the user can click the "Print Report" link to generate a PDF of the report.

The 'ICD-9 Population vs. Collapsed Uploaded Counts Report' is available for all data transmittals completed as part of the production level submissions**.** Hospitals will find this information to be useful because this report displays the difference between the two counts (sample and cases uploaded) and thus enables providers to identify when they have met their submission level obligations. This report is intended for MassQEX portal data management purposes only and does not represent the EOHHS hospital discharge data used to calculate payments.

c) Access to Portal Reports Repository. Hospitals are responsible for downloading and reviewing all details in the portal generated reports with their MassQEX registered users to ensure that data completeness requirements are met as part of each submission cycle process. The Input File Reports are available to both hospitals and/or data vendors and the hospital summary user-initiated reports are available to the ***hospital user only and not data vendors*****.** Please note the hospital summary reports feature described above were not available prior to calendar year reporting data (Jan to Dec 2010).

E. MassQEX Customer Support. EOHHS provides technical support help desk for all registered portal users. The EOHHS contractor staff is available to work with both the hospitals staff and third-party data vendors to assist in the implementation of XML specifications and technical aspects of measures data collection and data transmission procedures outlined in this manual.

1) The MassQEX Customer Support Help Desk features include:

- **Help Desk Phone**: 781- 419-2818 (voice messages are routed directly to staff)

- **Help Desk Email:** The designated email address to access technical support on portal related submissions and reporting is **massqexhelp@masspro.org.**

- **Hours of Operation:** Support staff is available during business hours from 9 a.m. – 5 p.m. (Eastern Time) from Monday through Friday and will respond to any reported issue within one business day.

The EOHHS contractor uses a ticket tracking system to log all MassQEX user inquiries and issues. This system is used to manage and support internal work loads, enter contact demographics, generate email based reminders and notifications for users of the MassQEX system.

2) MassQEX List-Serve. The MassQEX web site provides an auto-notification feature for individuals that have created users-accounts and are authorized to conduct data transactions on behalf of the hospital. The list-serve provides information and updates on portal system functionality and enhancements, including notices on measure specifications, status of submission production timelines and other related activities. Individuals not authorized as portal users may also register for the list-serve by sending a request to the MassQEX Help Desk email listed above.

F. Hospital Third-party Data Vendors. The EOHHS Acute Hospital contract includes a provision for hospitals that work with third-party vendors. Hospitals can identify and authorize third-party vendors to conduct electronic data transactions via the MassQEX secure portal, on the Hospital's behalf.

The Acute RFA contract stipulates that Hospitals are responsible for communicating directly with their data vendors on all aspects of MassHealth hospital data collection and reporting requirements, including adherence to the appropriate versions of the EOHHS Technical Specifications Manual. This is to ensure data completeness and accuracy of electronic data files are submitted on the Hospital's behalf.

The EOHHS manual contains instruction under Section 5 that requires collaboration among the hospital and their data vendors to successfully meet data submission requirements. In specific, Section 5.D provides a portal repository which generates various detailed reports to assist both hospitals and data vendors in verifying data completeness status during each submission cycle.

Hospitals should note that data vendors who submit electronic data files on their behalf can ***only*** access certain types of portal repository reports (Input file reports) but not the "Measure Counts" and "ICD-9 population vs. Collapsed Upload Counts" reports which are hospital user-initiated ***only*** via the portal. For this reason, it is recommended that hospitals review all portal repository reports with their data vendors to identify errors, warnings or inconsistencies that can be corrected prior to the close of each submission cycle.

The MassQEX Customer Support Helpdesk is available to assist hospitals and data vendors in interpreting the various reports generated by the portal.

G. Data Extension Request Protocol (*New sub-section insert*)

Each Acute Hospital RFA rate year defines the quality data reporting deadlines that hospitals must adhere to as a condition for earning incentive payments under the MassHealth Hospital P4P Program. No data extensions are permitted during the rate year. However, EOHHS recognizes that unusual or extraordinary circumstances can arise during the RFA rate year that may require modifying the quality reporting deadlines. This section outlines the provisions and procedures that apply to requesting a change to current RFA rate year quality data reporting deadlines.

A. **Quarterly Data Processing Cycle**. Each quarter the quality data reporting submission process involves various components that include: portal upload of data files, online ICD population entry, and submitting chart records for data validation purposes. During each submission cycle the portal is also programmed for hospitals to able to generate various portal repository reports (see Section 5.D of this manual) to assess their status in meeting specifications for each quarter reporting cycle. Technical specifications for the MassQEX portal and chart validation program software are programmed to each quarter reporting cycle requirements. Therefore a request to change any quality reporting deadline affects processing methods for various data components and programming specifications particular to each quarter reporting cycle.

B. **Provision for Changing Data Reporting Deadlines**. A hospital can request a change to RFA quality reporting deadlines when they have experienced circumstances that are beyond the control of the hospital facility, which may include, but are not limited to, the following:

(1) *Extraordinary Circumstance*: In the event of a disaster or catastrophic event (hurricane, tornado, floods, fires, etc.) that results in shut down of hospital and/or their data vendor facility operations thereby affecting the hospital's ability to complete the work required to meet quality data reporting deadlines. This process does not preclude EOHHS from considering other hospital's that have been affected by such extraordinary events across a specific region or locale.

(2) *Unusual Circumstance*: In the event that the EOHHS or its Contractor facility experiences an unusual circumstance (ex: building power outages, internet provider interruptions, phone service provider interruptions, etc) or extraordinary circumstance (as defined above) that impede the hospital's access to MassQEX portal or customer support services during an open active quarter reporting submission cycle. Other unusual circumstances where meeting the quarterly reporting deadlines is beyond the control of the facility may be considered (ex: new enrolled Medicaid hospitals under the current rate year, etc.).

(3) *Restrictions*. Quality reporting data extensions do not apply to a request for resubmission to correct data files, after the portal has closed, when the data files were incomplete or incorrectly submitted during a quarter reporting cycle. Data extensions also does not apply to a request for resubmitting chart record data that were incomplete, after the due dates noted in Section 6.A.(6) of this EOHHS manual. Finally, data extensions do not apply to calendar year quarter data cycles that are used for prior RFA contract rate year period payments.

Should EOHHS make a determination to grant a change to RFA reporting deadlines to hospitals affected by unusual or extraordinary circumstances, as described above, then such decision will be communicated using existing communication methods (EOHHS memos, email, MassQEX list-serve, posting updates on MassQEX website).

C. **Procedure to Request a Data Extension**. EOHHS has established a procedure for hospitals to request a change to RFA published reporting deadlines when the hospital experiences unusual or extraordinary circumstances during the current RFA rate year period. Hospitals must adhere to the following instructions:

(1) **Hospital Request Format**. The Hospital should initiate contact with EOHHS, via phone or email, to notify EOHHS of circumstances that have occurred plus submit a formal written request. The Hospital must use the "*MassHealth Hospital P4P Data Extension Request Form*" to submit their written request (see sample form shown below). A copy of the form can be obtained by sending an email to EOHHS business mailbox at: Masshealthhospitalquality@state.ma.us.
The hospitals request must provide details on nature of events, include supporting documentation and propose alternate reporting timeline, to the RFA published deadline, for EOHHS agency consideration. EOHHS will determine the final timeline for submitting data based on the circumstances and documentation provided by the hospital.

(2) **Hospital Submission Instructions**. All information on the request form must be completed, with a typed cover letter on hospital stationary that identifies contents enclosed, and mailed to:

Kiki Feldmar
Executive Office of Health and Human Services
MassHealth Office of Providers and Plans
100 Hancock Street 6th floor
Quincy, Ma 02171

The completed form must be received within 10 calendar days of the date that the circumstance occurred. The hospital can expedite their request by sending a copy of the materials via fax to MassHealth at (617) 847-3476 or to the EOHHS mailbox at: Masshealthhospitalquality@state.ma.us.

(3) **EOHHS Notification Process**. Following the receipt of the Hospital's request, EOHHS will provide immediate acknowledgement (via phone & email) to the Hospital CEO and designated quality contact that the request has been received. EOHHS will then provide the Hospital CEO and designated quality contact with final written decision regarding the Hospital's data extension request.

(**Sample Form - For illustration purposes only**)

RY2013 MassHealth Hospital P4P Data Extension Request Form

Instructions: Hospitals must use this form to request a change to RFA published quality data reporting timeline requirements. All information on this form must be typed. Incomplete forms will be returned to the hospital.

I. General Information

Hospital Name		Provider ID:	
Street Address		City, State, Zip	
Hospital CEO	Contact Information	Hospital Quality	Contact Information
Name		Name	
Email		Email	
Phone		Phone	
Fax		Fax	

II. Type of Request: Specify the RFA published data reporting deadline and calendar year data periods affected.

RFA Submission Deadline Affected: (Enter RFA submission due date that applies)	❑ Aug (Q1) _____ ❑ Feb (Q3) _____ ❑ Nov (Q2) _____ ❑ May (Q4) _____
Portal Submission Quarter affected: (Enter CY discharge period)	❑ Q1 _____ ❑ Q2 _____ ❑ Q3 _____ ❑ Q4 _____
Chart Validation Quarter(s) affected: (Enter CY discharge period)	❑ Q1 _____ ❑ Q2 _____ ❑ Q3 _____ ❑ Q4 _____

III. Specify Reason for Request (250 word limit for each entry).

A. Describe circumstance for requesting a change to quality reporting timelines (ex: nature of events, etc.). Refer to EHS manual on definitions

B. Provide evidence of event occurrence. Attach supporting documents relevant to circumstance described above.

C. Provide an estimated reporting timeline (month/day) the hospital will be able to submit affected quarter data with justification for this date.

I hereby attest, to the best of my ability, that the contents of this request form contains accurate information.

Hospital CEO Signature: _____ Date: _____

For EOHHS Use Only	Date Received:	EHS __ Approved __Denied	MassQEX Use Only

QDER Form_2013_Mock template

NOTE- The above sample form is truncated and for illustration purposes only. The actual form contains more detailed instructions.

SECTION 6. DATA VALIDATION METHODS

All quality measures data submitted to EOHHS, via the MassQEX web portal, must meet data validation standards along several levels. This includes passing: a) internal portal data completeness checks; b) chart level audits and; c) external portal checks to verify expectations for volume of discharges that meet ICD requirements for measures data received.

The EOHHS contractor will perform all aspects of portal and chart validation processes for inpatient measures data reported under the MassHealth Acute Hospital RFA. All data that has been successfully submitted via the MassQEX portal are subject to the validation methods described in this section.

A. Overview of Clinical Data Validation Process

1) The purpose of validation is to verify that the patient-level abstracted data submitted by Hospitals to MassQEX is accurate and reliable for calculating performance scores and incentive payments.

2) The EOHHS contractor will identify a sample of the Hospitals MassHealth patient-level records submitted via MassQEX, acquire copies of charts and re-abstract the measures data. Chart re-abstraction will establish the 'EOHHS Standard' for data abstraction. The 'Hospitals original' abstraction will be compared to the 'EOHHS' abstraction using methods outlined throughout this section.

3) Data validation applies to all measures listed in Table 2.1of this manual. The new emergency department measures listed will be included in data validation effective with Q1-2013 discharge data.

4) A random sample of 5 charts per quarter across all of the specified measure sets will be identified, by the EOHHS contractor, for each Hospital. The EOHHS contractor will re-abstract the hospital record data. *Effective with Q1-2013 discharge data submissions a random sample of 6 charts per quarter will be identified for each hospital based on measure sets being reported.*

5) Hospitals achieving an overall agreement score ≥ 80% for all 4 quarters of data submitted will be considered to have "passed" validation. Hospitals with overall scores that fall below 80% will be considered to have "failed" validation.

6) Chart validation schedule:
   a. Hospitals will be notified, by the EOHHS contractor, of cases selected for chart validation within fourteen (14) calendar days following each data submission deadline.
   b. Hospitals must submit paper copies of all medical records requested within seventeen (17) calendar days of the request. The EOHHS contractor will notify hospitals, by email or telephone, if any of the requested records have not been received within four (4) calendar days of the deadline. Copies of all paper medical records must include information on all three data elements of Race, Hispanic Indicator and Ethnicity for validation purposes. Hospitals are responsible for communicating this data submission requirement to their medical records department staff.
   c. Copies of records not received from Hospitals within seventeen (17) calendar days of the Contractor request will be deemed as failing validation for that record. The Acute Hospital RFA requires hospitals provide copies of records, for validation purposes, as part of program participation.

B. Data Validation Scoring Methods

1) **Validation Standard.** Hospitals will be evaluated against the 'EOHHS Standard' for chart abstraction by measuring agreement on the specific clinical and non-clinical (demographic and administrative) data elements for the measure sets listed in Section 2. Information from the 'Hospital original' and 'EOHHS Standard' abstraction will be compared to identify matches and variances across the data elements.

2) **Data Element Scoring.** All data elements are categorized as scored or non-scored. Scored elements are included in the calculation of the overall validation rate. Non-scored elements are not included in the calculation of validation rates but must pass portal completeness checks and will also be used to verify that the correct medical chart was received. A summary of the data element scoring categories is provided in Table below.

Table 6.1: Summary of Clinical Data Element Scoring Categories

Scored Data Elements		Non-Scored Data Elements	
Administrative Elements: • Race (DHCFP) • Hispanic Indicator (DHCFP) • Ethnicity (DHCFP) • Hospital Bill Number	**Clinical Data Elements for:** • MAT-1 measure • MAT-2a & 2b measures • MAT-3 measure • CAC measures • PN measures • SCIP measures • CCM measures • ED measures*	• Admission Date • Admission Time • Birth date • Discharge Date (score for CCM3 only) • Discharge Disposition (scored only for PN & CCM) • Episode of Care • First Name	• Hospital Patient ID # • Last Name • Member ID Number • Payer Source • Postal Code • Provider ID • Provider Name • Sample • Sex

Data elements added.

As noted in Table 6.1, scored data elements include administrative and clinical elements as follows:

a) **Administrative Data Elements**: These elements verify the MassHealth unique patient identifier data.
   i. Race, Hispanic Indicator and Ethnicity data elements will be scored across all measures data being reported on. The aim of validation is to determine how consistently hospitals document all required data elements in medical record and electronic clinical data files.
   ii. All race/ethnicity data elements documented in the medical record must indicate that the patient has self-reported. Clinician notes that make reference to a patient's race/ethnicity are considered invalid for data validation purposes.
   iii. Copies of all paper medical records must include information on all three data elements of Race, Hispanic Indicator and Ethnicity for validation purposes. The data elements must be clearly documented in the copy of the paper medical record submitted (i.e.: copy of the face sheet, nursing admission assessment, initial patient assessment) or include a copy of the administrative record (i.e.: registration system screen shot) for that patient.
   iv. Failure to include the documentation of race/ethnicity data in any medical record submitted will result in failing data validation for these data elements.

b) **Clinical Data Elements**: A full list of the clinical data elements that are eligible to be scored for each of the measure categories are contained in the following location:
   i. ***MassHealth Specific Measures (MAT, CCM):*** The list of clinical data elements that apply to these measures are contained on the table of contents of the data dictionary (**Appendix A-8)** of this EOHHS manual.
   ii. ***Nationally Reported Hospital Measures*** *(PN,SCIP, CAC, ED):* The full list of clinical data elements that apply to each of these measures are located in the NHQIM Manuals, listed under Section 2.B of this manual, posted on the QualityNet website at: http://www.qualitynet.org.

3) **Data Element Mismatch Reasons.** The EOHHS contractor will identify a mismatch reason for each variance observed between the data elements in the 'Hospital original' and 'EOHHS Standard' abstraction. The mismatch reason categories are provided below.

Table 6.2: Mismatch Reason Categories

Abstractor answer not found	Parent element mismatch (child element)
Abstractor missed information	Poor record copy
Acceptable match/mismatch	Unclear element definition
Data entry error	Invalid record sent
Not following abstraction guidelines	Record not received

4) **Calculating Overall Score.** The overall agreement score is the aggregate of the validation rates for all quarters of data. The overall score is the proportion of scored items in agreement divided by the total scored items rated. Confidence intervals will be calculated to determine appropriate range for estimating if a reliability threshold has been met.

5) **Validation Results Reports.** Hospitals will receive reports that provide information on quarterly results, case detail results at the data element level, and comments to improve reliability of measures reporting as appropriate. Hospitals will receive validation results twice during the rate year, once after the first two quarters (Q1, Q2) are submitted, and then after the last two quarters (Q3, Q4) are submitted. After all four quarters have been validated, the Hospital will receive their overall results report with the overall agreement score for all four quarters reported.

C. Requesting Re-Evaluation of Clinical Data Validation Results

Hospitals can have their original validation results considered for re-evaluation under the following conditions:

1) Basis for Re-evaluation:

a. Only Hospitals that have **not** met an overall agreement rate of ≥ 80% may request a re-evaluation of their validation results. Hospitals can request a re-evaluation of validation results for any quarter that fall below 80%.
b. The re-evaluation process for any quarter will be based on copies of medical records that were originally submitted, for that quarter, within the timelines stated under **Section 6.A** above.
c. Hospitals are **not** allowed to submit any new or additional documentation as part of the re-evaluation process.
d. Hospitals that failed to submit copies of the medical records requested by the EOHHS contractor within the timelines stated under **Section 6.A** above, are **not** eligible to submit a request for re-evaluation.

2) Timelines:

a. The Hospital has **10 business days** from the date of notification on their original overall validation report results to submit a written request for re-evaluation.
b. The re-evaluation process will be completed and mailed to the Hospital by the EOHHS contractor within **10 business days** from receipt of the Hospitals request.

3) Submission Format:

a. Hospitals must complete the ***"Request for Re-evaluation of Clinical Validation Results Form"*** and provide information on the data element mismatches including the rationale for the request to re-evaluate the chart abstraction results. An example of the form is provided at the end of this section.
b. The request must be sent to the EOHHS Contractor address and/or fax listed below and on the form as follows:

Masspro, Inc.
Attention: MassHealth Quality Exchange (MassQEX)
245 Winter Street
Waltham, MA 02451-8709
FAX to: (781) 290-5784

c. An electronic copy of the form can be obtained directly from the MassQEX Customer Support Help Desk at: **massqexhelp@masspro.org**

4) Final Results:

a. The Hospital will receive a written report on the final re-evaluation results indicating the following responses:
   1) Whether any of the validation results have been adjusted; and
   2) Whether the overall agreement score remains below the threshold requirements outlined in **Section 6.C.1(a)** above.
b. The final report will also provide details on data element mismatches that remain and educational comments to improve data reliability as appropriate.

5) **Example of Re-evaluation Request Form.** The following mock template illustrates an example of the types of information that will be required when submitting a request for re-evaluation.

Logo Bar **Rate Year 2xxx Form (Illustration Purposes Only):**

Request for Re-evaluation of Clinical Measures Data Validation Results

Hospital Name: _____ MassHealth Provider ID: _____

Hospital Contact Name: _____ Telephone: _____

Hospital Completion Date: _____ Date Received: _____

INSTRUCTIONS: Hospitals must complete this form to request a reevaluation when the validation results are <.80. Submit this form **no later than 10 business days** after the date of notification of the Hospitals original validation report results by postal mail or fax to:

MASSPRO, INC.
Attention: MassHealth Quality Exchange (MassQEX)
245 Winter Street Waltham, MA 02451-8709
FAX to: (781) 290-5784

Please enter all information requested below for each data element

MP Validation Control # (Listed on case detail report)	**Quality Measure ID**	**Data Element Name** (Listed on case detail report)	**Hospital Rationale** (Explain reason why hospital abstraction is correct. Information not originally provided will not be considered as part of re-evaluation)

Contact the MassQEX Help Desk at 781-419-2818 if you have questions about how to complete the form.

SECTION 7. HEALTH DISPARITIES MEASURE SPECIFICATIONS

Introduction

The Institute of Medicines (IOM) report, *Unequal Treatment*, distinguishes between difference in quality of healthcare and disparity in quality of healthcare. IOM defines disparities as racial or ethnic differences in the quality of healthcare that are not due to access-related factors or clinical needs, preferences and appropriateness of interventions, but are more a result from the way in which operation of the healthcare system functions along aspects of provider level communication & clinical decision-making (Smedley, Stith and Nelson, 2003; Institute of Medicine, 2001).

Medicaid hospital discharge and utilization trends are concentrated in major diagnostic groups for pregnancy, childbirth, newborn, pediatric, and adult chronic conditions that reflect areas where improvement is likely to have the most impact on health outcomes for this population. The measures selected to evaluate health disparities are based on criterion of importance and feasibility. Measures listed in **Section 2.A** of this manual, can serve as disparity sensitive measures since they represent medical conditions and areas of health status where racial and ethnic minority groups continually demonstrate poor outcomes of care (AHRQ, 2011; Healthy People 2010, Massachusetts DPH, 2007). Use of measures currently reported to MassHealth also minimizes burden on hospitals to collect additional data for quality reporting.

A. Measurement Considerations. Several factors must be considered when selecting and assessing hospital-level disparities associated with pay-for-performance. Such factors include definitions for constructing the reference and comparison population groups, type of disparity measure and statistics used and precision of the measure to estimate differences across the groups or identify problems of equity, and monitoring progress. These are briefly discussed below.

1) *Defining Racial/Ethnic Comparison Groups*. Health disparities can be measured by comparing the health of a reference group (i.e.: a group with the highest level for a given indicator or the total population) with the health of other groups (comparison group) to determine inequality among groups (Braveman, 2006; Carter-Pokras and Baquet, 2002). Ongoing analysis of MassHealth hospital reported measures data periods provides sufficient detail to compare rates across more than two racial groups, and allows the use of the Hispanic data from the DHCFP Unknown Race category, therefore improving the sample sizes for comparison groups and maximizing the overall data inclusion.

2) *Statistical Indicators for Disparity Measure*. Assessing disparity across more than two racial/ethnic groups requires a summary disparity measure to be calculated. In general, summary disparity measures for unordered groups, such as race and ethnicity, are similar in concept to traditional measures of variability used in statistics, such as the means deviation and the variance (Keppel et al, 2005). The commonly used statistics for measuring disparity are absolute and relative types of measures. Some commonly used statistical indicators include an 'index of disparity' and 'between-group variance' (Oakes and Kaufman, 2006; Harper and Lynch, 2005). These statistics are relatively easy to calculate, have straightforward interpretation, and both utilize information on all social groups and don't require ordering social groups. The 'between group-variance' measures the absolute differences among the racial/ethnic groups. It is weighted by each comparison group size and is less sensitive to groups with small sample sizes, which is an important consideration. Considering that significant numbers of the hospitals reporting clinical measures in MassHealth data, have one or more racial groups with very small sample sizes, the 'between-group variance' is a more appropriate statistic for measuring disparity because it weights racial and ethnic group sizes within each hospital.

3) *Reliability of the Health Disparity Measure*. The health disparity index is calculated based on the differences in each individual racial/ethnic group's measure rate and the total population measure rate within the hospital. Reliability of the disparity measure is based on the precision of the measure rate and sample size is the most important factor affecting the precision of the measure rate. Due to small sample sizes at the individual clinical measure level at many hospitals, as reported in MassHealth data, a composite measure rate with all measures combined will be utilized. A hospital level composite rate will maximize the sample size in the calculation, and thus improve the reliability.

The use of hierarchical models has been recommended in assessing hospital quality performance as a way to mitigate the effects of small sample size (O'Brien et al, 2008; Davidson et al, 2007). Such methods however introduce other limitations.

B. Attributes of the Health Disparity Composite Measure.

The following specifications and attributes apply to the health disparity composite measure.

Type of Measure. The health disparity index is a type of composite measure that represents an accumulation of cases drawn from the hospitals reported data. A composite measure rate is calculated by aggregating all clinical indicator measures the hospital is eligible to report on. They are all process of care measures and all are given equal weight in the composite. The composite represents the ratios of the total number of times the desired care was provided divided by the total opportunities for such care.

Composite Measure Numerator and Denominator Statement. The composite measure rate is calculated by dividing the composite numerator by the composite denominator stratified by race/ethnicity groups. The composite numerator is created by summing the numerators of all clinical measures and the composite denominator is created by summing the denominators of all clinical measures obtained from the hospital data reported by race/ethnicity groups. The following definitions apply to calculating the composite rates for reference and comparison groups:

- ***Reference Group Composite Measure Rate***: The reference group composite measure rate is defined as the measure rate calculated from the population of all racial/ethnic groups the hospital reported on. The composite numerator is derived by summing the numerators of all race/ethnic groups reported and the composite denominator is derived by summing the denominators of all racial groups reported. The reference group composite measure rate represents the composite measure rate of the total population, from all racial/ethnic groups the hospital reported on, with the exception of the UKNOW Race, non-Hispanic population group**.**
- ***Comparison Group Composite Measure Rate***: The comparison group composite measure rate is defined as the composite measure rate calculated from each of the five racial/ethnic categories is used to define the comparison groups.
- ***Excluded Groups***: The DHCFP code excluded from the analysis in both the reference and comparison group measure rates is the UNKOW Race, non-Hispanic category.

Data Collection Approach: Retrospective data sources of the required data elements for the clinical measure rates include administrative and medical records. No additional clinical or administrative data element collection is required for the clinical health disparities measure calculation.

Data Accuracy. The evaluation of health disparities for all clinical measures data being reported requires hospitals to accurately document and report race/ethnicity data elements in a consistent manner. Accurate and reliable data are necessary prior to calculating measure rates and performance scores. Hospitals must use the DHCFP standards to collect and report all three data elements of race, Hispanic indicator, and ethnicity in the clinical measure data files.

Sampling. No additional sampling is required for this measure. However, hospitals may choose to over-sample clinical measures data for racial/ethnic minority groups in order to improve the precision of their disparities measure rates. Refer to **Section 4** of this manual for information on sampling methods.

Risk Adjustment: None apply.

Data Reported as: Results will provide information on the hospitals reference and comparison group measure rates, the between-group variance, and the health disparity index.

Measure Analysis Suggestion. The disparity index should always be interpreted in conjunction with the racial/ethnic comparison group measure rates. *Refer to Section 7.D for details on how to interpret your results*

Improvement noted as. The disparity index value is reported on an interval scale ranging from zero (0) to one (1) *that should not be interpreted as a measure rate*. A disparity index of one (1) may indicate that no disparity exists whereas an index of zero (0) indicates a wide disparity exists in care processes across the hospital racial/ethnic groups.

C. HD-2 Measure Calculation Methods

1. Definition of Terms

a) **Racial/Ethnic Group Categories.** The racial/ethnic categories from which the population is drawn is based on the DHCFP standard codes and allowable values outlined in Section 2.B of this EOHHS manual.

Table 7.1 Hospital Recoded Racial/Ethnic Categories

Racial/Ethnic Categories	DHCFP Codes
Hispanic (includes any race, unknown race)	Y
White, non-Hispanic	R5
Black/African American, non-Hispanic	R3
Asian, non-Hispanic	R2
Other Race (Native Hawaiian/Pacific Islander, American Indian/Alaska Native, Other race).	R1+R4+R9

b) **Defining the Hospital Measure Population Groups**

- Reference Group: The reference group is derived from count data of the total population of all racial/ethnic categories, except the UNKNOW Race, non-Hispanic.
- Comparison Group: The comparison groups are derived from count of the five (5) racial/ethnic categories.
- Excluded Group: The excluded group is defined as the UNKNOW Race, non-Hispanic code in both the reference and comparison group.

c) **Definition of Composite Measure Rate**. The hospital composite measure rate is defined as sum of the numerators divided by the sum of the denominators for all of the clinical metrics for that hospital.

d) **Definition of Reference Group Composite Measure Rate.** Within each hospital, sum the denominators from all clinical quality measures for all the five (5) racial/ethnic categories to obtain the reference group denominator (d_{ref}) and sum the numerators (n_{ref}) from all clinical quality measures for all 5 racial/ethnic categories to obtain the reference group numerator. Calculate the hospital reference group composite measure rate {reference rate (r_{ref})} by dividing the reference group numerator by the reference group denominator.

e) **Definition of Comparison Group Composite Measure Rate:** Within each hospital, for each racial/ethnic category, sum the denominators from all quality measures to obtain the group denominator (d_i) and sum the numerators from all quality measures to obtain the comparison group numerator. Calculate the racial/ethnic comparison group composite measure rate (r_i) by dividing comparison group numerator by the comparison group denominator.

f) **Definition of Between Group Variance (BGV).** The BGV measures the deviation of each comparison group's composite measure rate from the reference group composite measure rate and weights each comparison group by its population size. The BGV accounts for relative sizes of groups.

$$\text{BGV} = \sum_{i=1}^{n} \frac{d_i}{d_{ref}} \left(r_i - r_{ref}\right)^2$$

Where:
r_i is the composite measure rate in racial/ethnic comparison group *i*
r_{ref} is the reference group composite measure rate
d_i is the denominator in racial/ethnical comparison group *i*
d_{ref} is the denominator in the reference group
n is the number of racial/ethnic comparison groups within a hospital

g) **Health Disparity Index.** The disparity index value is calculated using the following formula:

Disparity Index = 1 – BGV

This disparity index formula is transformed so that the directionality for the range of disparity index falls within zero (0) to one (1) which is aligned with directionality of clinical quality measures rates (from lowest to highest).

2. Calculation of Hospitals Disparity Index (Example)

Hospital A's data files displays the following summary information on all numerator and denominator data from all eligible clinical measures discharge data reported in a full calendar year.

Table 7.2. Summary of Recoded Race/Ethnic Categories for Hospital A

MHRACE Code	Hispanic Indicator	Recoded R/E Category	R/E Category Name	Numerator	Denominator
-----	Y	1	Hispanic	30	60
R3	N	2	Black/African American Non-Hispanic	3	5
R5	N	3	White Non-Hispanic	80	100
R2	N	4	Asian Non-Hispanic	2	5
R1+R4+R9	N	5	Other Race Non-Hispanic	15	30
TOTALS	-------	--------	----------	**130**	**200**

Step 1- Criteria for Calculating the Disparity Index Value

- The hospital clinical data files submitted for the calendar year must meet the criteria for calculating a disparity index value. This includes having more than one racial/ethnic group in the composite measure data after the UNKOW race code has been excluded.
- Once the racial/ethnic groups have been recoded the hospital's reference and comparison group measure rates are calculated using the following steps.

Step 2- Calculating the Reference Group Composite Measure Rate

- Sum the denominators from all 5 racial/ethnic groups to obtain the reference group denominator (d_{ref})
- Sum the numerators from all 5 racial/ethnic groups to obtain the reference group numerator (n_{ref})
- Calculate the reference group composite measure rate (r_{ref}) by dividing the reference group numerator by the reference denominator using the following formula;

$$r_{ref} = \frac{n_{ref}}{d_{ref}}$$

Example:

Reference Group denominator = 60+5+100+5+30=200
Reference Group numerator = 30+3+80+2+15=130
Reference Group rate=130/200=65%

Step 3 - Calculating the Comparison Group Composite Measure Rates

- For each racial/ethnic comparison group, sum the denominators from all clinical measures the hospital is eligible to report on to obtain the comparison group denominator (d_i)
- For each racial/ ethnic comparison group, sum the numerators from all clinical measures to obtain the comparison group numerator (n_i).
- Calculate the racial/ethnic comparison group composite measure rate (r_i) by dividing the comparison group numerator by the comparison group denominator.

$$r_i = \frac{n_i}{d_i}$$

Example: The following information from Table 7.2 is used to calculate the hospital's comparison group rates:

Hispanic rate = 30/60 = 50%
Black/African American, Non-Hispanic rate = 3/5 = 60%
White, Non-Hispanic rate = 80/100 = 80%
Asian, Non-Hispanic rate = 2/5 = 40%
Other Race, Non-Hispanic rate = 15/30 = 50%

Step 4- Calculating the Between Group Variance (BGV)

The BGV measures the deviation of each racial/ethnic comparison group's composite measure rate from the reference group composite measure rate and weights each comparison group by its population size.

$$\textbf{BGV} = \sum_{i=1}^{n} \frac{d_i}{d_{ref}} \left(r_i - r_{ref}\right)^2$$

Where:
r_i is the composite measure rate in racial/ethnic comparison group ***i***
r_{ref} is the reference group composite measure rate
d_i is the denominator in racial/ethnic comparison group ***i***
d_{ref} is the denominator in the reference group
n is the number of racial/ethnic comparison groups within a hospital

Example: The following information from Table 7.2 is used to calculate the BGV for the comparison groups:

a) Calculate BGV for each racial/ethnic comparison groups:

$$\textbf{BGV}_i = \frac{d_i}{d_{ref}}(r_i - r_{ref})$$

$$\textbf{BGV1}_{Hispanic} = \frac{60}{200}(0.5 - 0.65)^2 = \textbf{0.006750}$$

$$\textbf{BGV2}_{Black/African\ American,\ Non\text{-}Hispanic} = \frac{5}{200}(0.6 - 0.65)^2 = \textbf{0.000063}$$

$$\textbf{BGV3}_{White,\ Non\text{-}Hispanic} = \frac{100}{200}(0.8 - 0.65)^2 = \textbf{0.011250}$$

$$\textbf{BGV4}_{Asian,\ Non\text{-}Hispanic} = \frac{5}{200}(0.4 - 0.65)^2 = \textbf{0.001563}$$

$$\textbf{BGV5}_{Other\ race,\ Non\text{-}Hispanic} = \frac{30}{200}(0.5 - 0.65)^2 = \textbf{0.003375}$$

b) Calculate the Hospital BGV: The following information from Table 7.2 is used to calculate the final BGV

$$\textbf{Final BGV} = \sum_{i=1}^{n} \frac{d_i}{d_{ref}} \left(r_i - r_{ref}\right)^2$$

= BGV1 + BGV2 + BGV3 + BGV4 + BGV5
= 0.006750+ 0.000063 + 0.011250+ 0.001563+ 0.003375
= 0.023001

Step 5 - Calculate Health Disparity Index. The health disparity index value is calculated using the following formula:

Disparity Index = 1 minus BGV = 1 - 0.023001 = .976999

The calculation steps shown above are summarized into the hospitals year end report. An example of a HD-2 measure report and how to interpret results are provided below.

.

D. Interpreting the HD-2 Measure Report

The Hospital will receive a year end report that displays information in a table and graph shown below.

Table 7.3. Sample of Hospital 'A' Report Results

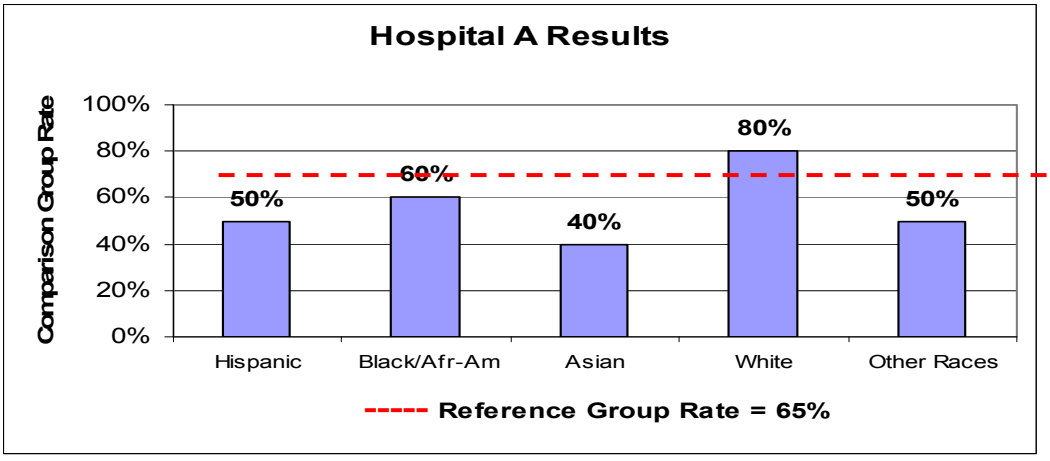
Racial/Ethnic Comparison Groups	Numerator	Denominator	Rates	Comparison Group BGV
Hispanic	30	60	50%	0.006750
Black/African-American Non-Hispanic	3	5	60%	0.000063
Asian Non-Hispanic	2	5	40%	0.001563
White Non-Hispanic	80	100	80%	0.011250
Other Race Non-Hispanic	15	30	50%	0.003375
Hospital Reference Group	130	200	65%	
			Final BGV	0.023001
			Disparity Index	0.976999

1) **What the Table Contains.** The HD-2 report is calculated when the full calendar year of reported clinical measures data includes more than one racial group. The report contains the following information:

   a) ***Comparison and Reference Composite group Measure Rates*** - represent the ratios of the total number of times the desired care was provided by the hospital to R/E groups divided by the total opportunities for providing such care.
   b) ***Comparison group BGV*** **-** reflects the degree of disparity contributed by each racial/ethnic group.
   c) ***Final BGV*** -- reflects the variation of each comparison group's composite measure rate from the reference group composite measure rate accounting for relative sizes of all R/E groups reported on.
   d) ***Disparity Index*** **--** provides information on the degree of disparity contributed by each racial/ethnic group within the hospital across all the clinical measures data they reported on. *The Average index is no longer displayed.*

2) **What the Graph Contains.** The report also includes a graph, created from the report table, which displays the hospitals racial/ethnic comparison group composite measure rates in relation to the hospitals reference composite group rate.

Figure 1. Graph of Hospital Disparity Results from Table 7.3



- Figure 1 shows the comparison group measure rates for each R/E group in relation to the hospitals reference group measure rate for Hospital A. The greater the distance from the hospital reference group (65%) and the larger the group size, the larger the contribution to the disparity index by that group.

- Figure 1 also shows that Hispanics and Whites contribute more than other R/E groups to the disparity index due to their large denominator size. Asians contribute less to the disparity index even though their composite measure rate is lowest because their group size (denominator = 5) is small.

3) **How to Interpret the Results**. The following *important* considerations should be taken into account when interpreting the health disparity index result:

   a) The degree of disparity contributed by each racial/ethnic group is based on both the composite measure rate difference between the comparison group and the reference group, and the population size of the comparison group.

   b) The disparity index *only* quantifies the degree of disparity, regardless of the direction of disparity. For example, a racial comparison group with a higher composite measure rate than the reference group may contribute more disparity then other racial comparison groups.

   > **Example**: This is illustrated in Table 7.3 where White groups shows a higher composite measure rate (80%) than the reference group (65%) and has the largest BGV. The comparison group BGV is higher for Whites than for Hispanics due to its larger group size even though both comparison group composite measure rates are the same distance from the Hospital reference group rate. Therefore, interpretation of the disparity index result should always be done in conjunction with the comparison group-specific measure rates to the hospital reference group composite measure rate and comparison group size.

   c) Care should be taken when interpreting HD2 results since achieving a higher disparity index does *not* necessarily correlate with improvement on a given clinical measure. As shown in the Table 7.3, a hospital with overall lower comparison group composite measure rates may still produce a high disparity index (ex: 0.976999), as long as the degree of disparity across racial/ethnic groups is small.

4) **Monitoring Quality Across Racial/Ethnic Groups.** As noted under Section 7.A of this manual, statistical indicators for health disparity measures pose both advantages and challenges to monitoring quality care across racial/ethnic groups.

   a) The HD-2 report is created from all eligible clinical measures data the hospital submitted during a full calendar year that is intended to supplement the hospitals clinical measure rate report. Therefore, the HD2 results must be reviewed in conjunction with the hospitals year-end clinical measure rate report to identify potential areas for improvement.

   b) The disparity index suggests differences may exist across clinical process measure rates for the specified racial/ethnic groups but it does not identify detail on which clinical measures contributed to disparity. However, the hospitals year-end clinical measure rate report can provide a clue on which measure category (e.g.: lowest measure rates) may be contributing to variation in care processes across racial groups.

   c) Hospitals can target quality improvement efforts by identifying gaps across specific racial/ethnic comparison group rates and their clinical measure results. Improving the care delivery processes for groups with large population sizes and low measure rates will reduce the degree of disparity.

   > **Example**: As shown in Table 7.3 the Hispanic and Other Race group with lower measure rates (50%) than the reference group rate (65%) and relatively larger population sizes (denominators of 60 and 30 respectively) contribute more to disparity than the Black and Asian groups which have smaller sizes. These results indicate that an opportunity exists for targeting interventions to improve hospital clinical care delivery care processes with Hispanics and Other Race groups as a way to close the gap in disparity for these patient subgroups.

   d) A hospital with overall poor quality of care may still obtain a high disparity index as long as the degree of disparity across its racial/ethnic groups is small. Likewise, a hospital with no improvement or even a decrease in their clinical measure rates may still improve its disparity index as long as the degree of disparity across racial/ethnic groups is reduced.

Please contact the MassQEX Help Desk at (781) 419-2818 or via email at massqexhelp@masspro.org if you have any questions on how to interpret your clinical health disparities (HD-2) measure report results.

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