Commonwealth of Massachusetts
Executive Office Health and Human Services

RY2020
EOHHS Technical Specifications Manual for MassHealth Acute Hospital Quality Measures (Version 13.0)

Published August 19, 2019

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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 Medicaid Acute Hospital Request for Application (RFA) contract, for hospitals participating in the MassHealth Hospital Pay-for-Performance (P4P) Program.

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 MassHealth hospital quality measures reporting requirements, *including standards used to collect inpatient quality measures from various federal data repositories.* To minimize burden, every effort is made to align the MassHealth hospital quality reporting standards with guidelines for hospital measurement and reporting systems supported by the Center for Medicare and Medicaid Services (CMS) and other national stakeholder groups developing hospital inpatient quality measures.

EOHHS reserves the right to make changes to measure specifications and reporting instructions contained in this Manual, during each Acute Hospital RFA rate year period, as necessary to improve reliability and accuracy of measurement. The following resources are available for all participating Hospitals and their data vendors:

1. **MassHealth Quality Exchange (MassQEX) Website:** all program and technical resources for hospitals and data vendors involved with quality reporting requirements are posted on the Mass.Gov website at http://www.mass.gov/masshealth/massqex

2. **EOHHS Medicaid Acute Hospital Request for Application (RFA):** contains detail on the terms and conditions of P4P requirements (Section 7). Below are steps to download a copy:

    - Go to www.commbuys.com and press Enter. The COMMBUYS introductory screen appears.
    - On bottom click “Contract & Bid Search” link and you will see “COMMBUYS Advanced Search” screen appears.
    - In “Search” for box click the “Bids” link. A list of Search Fields appears.
    - In “Bid Description” type Document #: 20LCEHSACUTEHOSPITAL and Click “Find It” button.
    - In Results section (at bottom of page), click the link under Bid # and the ‘Solicitation screen’ for the RFR appears.
    - In the “File Attachments” section, click the link to the document you want to access.
    - From the ‘File Download’ pop-up menu, click the ‘Open to view document’
    - Save the document to your desktop.

3. **MassQEX Portal Homepage:** the EOHHS Contractor (Telligen Inc.) manages a secure portal for the exchange of acute quality measures data on the website https://massqex-portal.telligen.com/massqex/ Refer to Section 5.A of this EOHHS Manual for details.

4. **MassQEX Help Desk:** the EOHHS Contractor provides technical support via toll-free phone (844) 546-1343 and email massqexhelp@telligen.com. See Section 5.E of this Manual for details.

5. *MassHealth Program Contact***:**
    - Iris Garcia-Caban, PhD
    - EOHHS MassHealth Acute Hospital P4P Program
    - Phone: (617) 847-6528
    - Email Business Mailbox: Masshealthhospitalquality@state.ma.us.

B. Enhancements to Version 13.0

This version of the EOHHS Manual contains substantive changes throughout all core sections of the document and related appendices. The revisions that apply to each section of in version (13.0) are noted in Table 1.1 below.

Table 1.1: Checklist of Changes in Version 13.0

Section	Changes in Core Manual	Update	Clarify	New
TOC	**Table of Contents**	X	X	X
1	**Introduction** • Update Tables 1.1, 1.2, 1.3 and 1.4; add Table 1.5	X		X
2	**Data Collection Standards & Guidelines** • Update Table 2.1; add Table 2.4; clarify data completeness exemption	X	X	X
3	**MassHealth Process Measures Specifications** • Edit all metric descriptions; relocate 3.D.C to Appendix A-9	X	X	
4	**Medicaid Sampling Specifications** • Minor edits under 4.B; Retitle sub-header 4.C and 4.D	O	X	
5	**Data Transmittal Guidelines** • Update Jpeg images; edit XML references; add 5.D accounts monitor	X		X
6	**Data Validation Methods** • Update 6.A.4 requirements, Table 6.1 elements; add Table 6.2	X		X
7	**MassHealth PSI-90 Measure Specifications** • Edit description; new sub-header 7.C and clarify text; update AHRQ technical resource versions; relocate 7.D to Appendix A-9;	X	X	
8	**National Healthcare-Associated Infection Measures** • Edit description; new sub-header 8.C and clarify text, relocate 8.D to Appendix A-9	X	X	
9	**National Hospital Patient Experience Survey Measures** • Edit description; new sub-header 9.C and clarify text, relocate 9.D to Appendix A-9	X	X	
Section	**Changes in Appendix Tools**	**Update**	**Clarify**	**New**
A-1	Data Abstraction Tool for NEWB-1	X		
A-2	Data Abstraction Tool for MAT-4	X		
A-3	Data Abstraction Tool for CCM-1,2,3	X		
A-4	XML Schema MassHealth Specific Measures-Table A answer code value	X		
A-5	XML Schema Data Deletion Request	O		
A-6	MassHealth Data Dictionary – updates noted in first page	X	X	
A-7	MassHealth Measure Calculation Rules – NEWB1, MAT4, CCM2	X	X	
A-8	MassHealth PSI-90 Claims Extraction Rules - MS-DRG grouper	X		
A-9	MassQEX Reports User Guide – RY20 delayed posting			X
A-10	Reserved for Future use (Payment Report User Guide delayed posting)			X

Information that has substantially changed from prior version is shown in *emphasis style font* throughout the document.

The type of changes are marked using an X and O under the following header labels:

- Update (delete, correct, or modify text information in prior version)
- Clarify (modification of text was done to make it clearer)
- New (insert content not published in prior version; text does not use emphasis style font)

A circle O indicates no change was made to what was published in prior version. Please refer to each section of this manual for specific detail on changes listed above.

C. Changes to Quality Reporting

1) **Data Submission Timelines.** The table below updates the calendar year (CY) quarter discharge periods, submission dates, and manual versions that apply for each reporting cycle.

Table 1.2: Acute RFA 2020 Data Submission Cycles

Acute RFA Submission Due Date	Quarter Reporting Cycle (Discharge Data Periods)	EOHHS Manual Version
Aug 16, 2019	Q1-2019 (Jan 1, 2019 – Mar 31, 2019)	Version 12.0 and 12.1
Nov 15, 2019	Q2-2019 (April 1, 2019 - June 30, 2019)	Version 12.0 and 12.1
Feb 14, 2020	Q3-2019 (July 1, 2019 – Sept 31, 2019)	Version 13.0
May 15, 2020	Q4-2019 (Oct 1, 2019 – Dec 31, 2019)	Version 13.0
Aug 14, 2020	Q1-2020 (Jan 1, 2020 – Mar 31, 2020)	Version is TBD

As shown in Table 1.2, the RY20 calendar year (CY) 2019 reporting includes four quarters of data (Q1 to Q4). The Q1-2019 submission date is the rolling reporting period identified under the Acute RFA2019 contract. The rolling reporting period (Q1-2020) for the subsequent calendar year is also announced under the Acute RFA20 contract. The EOHHS Manual version of instructions that apply to each quarter reporting period vary. The entry "TBD" indicates version is to be determined.

2) **Data Reporting Specifications.** Updates to data specifications are summarized below.

Table 1.3: Changes to Reporting Specifications

Data Specification	Description	Effective Data Period	EOHHS Manual
Payer source	▪ Clarify Medicaid payer codes	As of Q1-2019	Section 2.B
NEWB-1	▪ Update "Term newborn" data element ▪ Change abstraction tool item15 ▪ Update calculation rule row 16	As of Q3-2019	Section 3 Appendix A-1 Appendix A-7
MAT-4	▪ Change "Previous live birth" data element name ▪ Change abstraction tool Item18 ▪ Update definitions, notes/guidelines for abstraction ▪ Update calculation rule row 19	As of Q3-2019	Section 3 Appendix A-2 Appendix A-6 Appendix A-7
CCM-1,2,3	▪ Update CCM-2 transition counter flowchart ▪ No change to CCM-1,2,3 abstraction tool ▪ Update CCM-1 data element abstraction guideline ▪ Update CCM-2 calculation rule row 28	As of Q1-2019 N/A As of Q3-2019 As of Q1-2019	Section 3 Appendix A-3 Appendix A-6 Appendix A-7
Discharge disposition	▪ Update all MassHealth records guidelines for abstraction	As of Q3-2019	Appendix A-6
Chart Records	▪ RY20 charts required for Q1, Q2, and Q3 ▪ Case listing posted in secure portal area	As of Q1-2019 As of Q3-2019	Section 6.A Appendix A-9

Table 1.3 summarizes the key changes that apply to MassHealth process measures data reporting, the effective discharge data file periods, and manual sections that describe the change. Please review each section of the EOHHS Manual referenced for more details.

D. Performance Evaluation Periods

The quality measurement data periods used to evaluate performance are listed below.

Table 1.4: RY2020 Performance Data Periods

Quality Measures Category	Previous Year Data Period	Comparison Year Data Period
Perinatal (MAT-4, NEWB-1)	07/01/2018 – 12/31/2018	01/01/2019 – 12/31/2019
Care Coordination (CCM-1,2,3)	07/01/2018 – 12/31/2018	01/01/2019 – 12/31/2019
Health Disparities Composite (HD-2)	Not Applicable	01/01/2019 – 12/31/2019
Patient Safety & Adverse Events (PSI-90)	Not Applicable	10/01/2016 – 9/30/2018
Healthcare-Associated Infections (HAI's)	Not Applicable	01/01/2017 – 12/31/2018
Patient Experience (HCAHPS)	01/01/2017 – 12/31/2017	01/01/2018 – 12/31/2018

As noted in Table 1.4, performance evaluation for the perinatal, care coordination and patient experience measure categories use the comparison and previous year data periods listed. Performance evaluation for the safety outcome category (PSI-90 & HAI) use 24 month data periods. Performance evaluation for the disparity measure category use the comparison year data period only.

E. Program Participant Forms

Each rate year all participating Hospitals are required to submit the MassHealth P4P Programs standard forms listed in table 1.5 below.

Table 1.5: Hospital Program Participant Forms

Form Name	Form Content	Mailing Address
MassHealth Hospital Quality Contact Form	• List two Key Representatives • List hospital and vendor MasQEX users • Requires Key Representative signature • See Acute RFA (Section 7.2) details and due dates	**EOHHS MassHealth** Acute Hospital P4P Program 100 Hancock St. (6th floor) Quincy, MA 02171
MassHealth Hospital Data Accuracy and Completeness Attestation Form	• Identify measures exemption reporting that apply • Requires Hospital CEO signature • See Acute RFA (Section 7.3) details and due dates	**EOHHS MassHealth** Acute Hospital P4P Program 100 Hancock St. (6th floor) Quincy, MA 02171
MassHealth Hospital Data Extension Request Form	• Describe extraordinary circumstances • Requires Hospital CEO signature • See EOHHS Manual (section 5.G) details and due dates	**EOHHS MassHealth** Acute Hospital P4P Program 100 Hancock St. (6th floor) Quincy, MA 02171
MassQEX Data Validation Reevaluation Request Form	• Describe reason for requesting re-evaluation • Requires Key Representative signature • Refer to EOHHS Manual (section 6.C) details and due dates	**Telligen, Inc.** Attention: MassHealth Quality Exchange 800 South Street (Suite 170) Waltham, MA 02453
MassQEX User Registration Form (On-line)	• Complete On-line forms to open portal user account • Requires Hospital CEO signature and Notary stamp • Refer to EOHHS Manual (section 5.D) details and due dates	**Telligen, Inc.** Attention: MassHealth Quality Exchange 800 South Street (Suite 170) Waltham, MA 02453

1) *Access to Program Forms:* The Hospital Quality Contact and Hospital DACA forms are posted on Mass.Gov at www.mass.gov/service-details/masshealth-acute-hospital-p4p-program-documents. The Data Extension Request and Validation Re-evaluation Request forms are available upon request from MassHealth. The MassQEX User Registration Form is on the portal homepage at https://massqex-portal.telligen.com/massqex.

2) *EOHHS MassHealth Program Communication:* Only the two Key Representatives in Hospital Contact Form are entered in the EOHHS mailbox Masshealthhospitalquality@state.ma.us for Acute RFA business communication purposes. All authorized registered users are entered in the MassQEX Listserv system for all technical quality reporting related communication purposes.

Section 2. Data Collection Standards & Guidelines

This section outlines the general data collection standards and guidelines that apply to the process and outcome measures based on the inpatient patient population mix and service line.

A. MassHealth Measure Specifications: the technical references for each measure is listed below.

Table 2.1: RY20 MassHealth Acute Quality Measures

Metric ID #	Measure Name	EOHHS Manual Specs
NEWB-1	Exclusive Breast milk feeding	Section 3.A
MAT-4	Cesarean Birth, NTSV	Section 3.B.
CCM-1	Reconciled medication list received by patient at discharge	Sections 3.C-1
CCM-2	Transition record with data received by patient at discharge	Sections 3.C-2
CCM-3	Timely transmittal of transition record at discharge	Section 3.C-3
HD-2	Health Disparity Composite	Section 3.D
PSI-90	Patient Safety and Adverse Events Composite	Section 7
HAI-1	Central Line-Associated Bloodstream Infection	Section 8 instructions
HAI-2	Catheter-Associated Urinary Tract Infection	Section 8 instructions
HAI-3	Methicillin-Resistant Staphylococcus Aureus bacteremia	Section 8 instructions
HAI-4	Clostridium Difficile Infection	Section 8 instructions
HAI-5	Surgical Site Infections: Colon and abdominal hysterectomy surgeries	Section 8 instructions
HCAHPS	Hospital Consumer Assessment of Health Provider Systems Survey	Section 9 instructions

General Data Elements. Hospital quality measures must contain all general clinical and administrative data elements that are commonly required to calculate measure assignments. Regardless of which measures are reported, certain data elements that are considered general to each patients care episode must be collected and submitted for every case that falls into the measures initial patient population. Technical instructions for data collection standards that apply to measures listed on Table 2.1 are contained in the following manuals:

1) **EOHHS Technical Specifications Manual for Acute Hospital Quality Measures**: This manual is the primary source of instruction for all MassHealth measures data collection and reporting guidelines that apply to each Acute RFA rate year. Hospitals are responsible for adhering to instructions in the appropriate versions of this manual that apply to reporting periods in Table 1.1:
   - *Version 12.0 – use this version as of Q1-2019 and Q2-2019 discharge data file reporting*
   - *Version 12.1 – use this Release Notes version as of Q1-2019 discharge data file reporting*
   - *Version 13.0 – use this version as of Q3-2019 discharge data file reporting*

2) **Specifications Manual for Joint Commission National Quality Measures** *(version 2019A),* plus related Release Notes and Appendix A: ICD-10 Code Tables for maternity and newborn measures posted on: https://manual.jointcommission.org/Manual/WebHome. This document is noted as the "TJC Manual" in this EOHHS Manual.

3) **Agency for Healthcare Research and Quality Technical Specification Manuals (v2019).** *Refer to Section 7 in this EOHHS Manual for version of AHRQ specifications that apply to collection of MassHealth PSI-90 claims-based measure.*

4) **NHSN Patient Safety Components Manual (2019)**. *Refer to Section 8 in this EOHHS Manual for version of data specifications that apply to collection of national HAI measures.*

5) **HCAHPS Quality Assurance Guidelines***: Refer to Section 9 in this EOHHS Manual for version of specifications that apply to collection of national HCAHPS survey measures*.

B. MassHealth Specific Data Elements

The Massachusetts state regulation (114.1CMR 17.00) requires hospitals collect and report yearly case mix discharge data to the Center for Health Information and Analysis (CHIA) Agency that includes Medicaid payer source and race/ethnicity data elements. To minimize burden EOHHS adapted the CHIA payer and race/ethnicity code reporting standards for MassHealth hospital quality reporting requirements.

1) **Medicaid Payer Source.** The following payer codes apply to quality reporting:

- *Included Payer Codes* - represent Medicaid insurance plans where MassHealth is the primary or only payment source as listed on Table 2.2.

- *Excluded Payer Codes* - represent Medicaid insurance plans where MassHealth is ***not*** the primary payer, is the secondary or tertiary payment source as listed on Table 2.2. This includes those with dual eligible status or seniors over 65 years (covered by Medicare and Medicaid) and third party liability coverage (HMO/Commercial plan and Medicaid).

Table 2.2 - Massachusetts CHIA Medicaid Payer Codes

Payer Source Description	CHIA Payer Code
INCLUDED	INCLUDED
Medicaid: Includes MassHealth Fee-for-service and MassHealth Limited	103
Medicaid: Primary Care Clinician (PCC) Plan	104
Medicaid Managed Care – Boston Medical Center HealthNet Plan	208
Medicaid Managed Care – Tufts Health Together Plan	116, 274
Medicaid Managed Care - Other (not listed elsewhere)	119
Medicaid Managed Care – Massachusetts Behavioral Health Partnership	118
Medicaid: Other ACO	311
Medicaid: Fallon 365 Care (ACO)	312
Medicaid: Be Healthy Partnership with Health New England (ACO)	313
Medicaid: Berkshire Fallon Health Collaborative (ACO)	314
Medicaid: BMC HealthNet Plan Community Alliance (ACO)	315
Medicaid: BMC HealthNet Plan Mercy Alliance (ACO)	316
Medicaid: BMC HealthNet Plan Signature Alliance (ACO)	317
Medicaid: BMC HealthNet Plan Southcoast Alliance (ACO)	318
Medicaid: Community Care Cooperative (ACO)	320
Medicaid: Partners Healthcare Choice (ACO)	322
Medicaid: Steward Health Choice (ACO)	323
Medicaid: My Care Family with Allways Health Partners (ACO)	321
Medicaid: Tufts Health Together with Atrius Health (ACO)	324
Medicaid: Tufts Health Together with BIDCO (ACO)	325
Medicaid: Tufts Health Together with Boston Children's (ACO)	326
Medicaid: Tufts Health Together with CHA (ACO)	327
Medicaid: Wellforce Care Plan (ACO)	328
EXCLUDED	EXCLUDED
Healthy Start (free care pool)	98
Out of State Medicaid (Other Government)	120
Other Government	144
Children's Medical Security Plan (CMSP)	178
MassHealth Senior Care Options	273
One Care – Tufts Health Unify	280
One Care – Commonwealth Care Alliance	281
Health Safety Net	995
Other: Commercial ACO Plan	310
All Health Connector and Commonwealth Care Plans	See CHIA specs

For more detail on CHIA payer codes refer to FY2019 Hospital Case Mix Data Specifications at http://www.chiamass.gov/hospital-data-specification-manuals. Published December 2018.

2) **Race/Ethnicity Data Elements**. The Massachusetts state regulation (114.1CMR 17.00) also requires hospitals to collect and report case mix discharge data to CHIA that includes race/ethnicity data element. For the purposes of health disparity measure category analysis, MassHealth will *require collection of the Race and Hispanic Indicator data elements only*.

a) **Revised Data Element Codes.** Effective RY19, the Race and Hispanic Indicator codes and allowable values required for MassHealth clinical process measures data reporting are summarized below.

Table 2.3: Massachusetts CHIA Race Group Codes

Race Category Code	Allowable Value
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
Hispanic Indicator Code	**Allowable Value**
YES	Patient is Hispanic/Latino/Spanish
NO	Patient is not Hispanic/Latino/Spanish

b) **Data File Reporting Standard**. Effective RY19, at least one Race and the Hispanic Indicator must be reported per patient as part of the measure data files as follows:

i. Race Categories- allows up to 3 fields for reporting (Race1; Race2; Other Race as free text).
ii. Hispanic Indicator- allows one field for reporting (Yes or No).

The CHIA race/ethnicity data elements are required to calculate the health disparity measure category assignment described in this EOHHS manual. Failure to adhere to race/ethnicity codes may affect the accuracy of calculating the health disparities measure category. Refer to the data dictionary in this EOHHS manual for specific data element definitions.

Detail on the CHIA race/ethnicity codes are contained in the Hospital Case Mix Data Specifications (2019) at http://www.chiamass.gov/hospital-data-specification-manuals.

c) **Data Accuracy Standard.** EOHHS conducts ongoing validation of race/ethnicity data elements to verify hospital coding accuracy in the quality measures reported data files. As noted in Section 6.B of this EOHHS manual, *Race and Hispanic indicator data* is validated as part of the medical chart review process.

Hospitals must ensure that medical records selected for validation include the proper documentation be submitted per patient file. See Section 6 of this EOHHS Manual for more details on data validation methods.

C. Data Collection & Reporting Tools

This EOHHS manual provides the following standardized tools to assist hospitals in collecting and reporting MassHealth patient-level information for the process measures listed in Table 2.1.

1) **Data Abstraction Tools***.* This manual includes several paper data abstraction tools to facilitate standardized collection and reporting of MassHealth specific measures not published in national manuals. These data abstraction tools should be used in conjunction with Section 3 measure specifications and data dictionary provided in this EOHHS manual.

2) **XML Schema Layout***.* This manual includes several XML schema file layouts in excel worksheets to assist hospitals in standardized formatting of electronic files for all MassHealth quality measures data reporting. These XML file layouts should be used in conjunction with Section 3 measure specifications and data dictionary of this EOHHS manual. MassHealth measures data files must be collected using the Extensible Markup Language (XML) file format consistent with data transmission standards and guidelines provided in this EOHHS Manual. 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 requirements in this manual will result in data files not being accepted by the portal.

3) **Data Dictionary***.* This manual includes a data dictionary 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 data elements pertaining to the MassHealth specific measures, in Table 2.1, not published in CMS national hospital quality reporting manuals. The data dictionary should be used in conjunction with Section 3 in this EOHHS manual.

4) **Measure Calculation Rules***.* This manual also includes calculation rules for MassHealth specific measures in Table 2.1 of this EOHHS manual. Measure calculation methods for the health disparities composite measure are further described in Section 3 of this manual.

5) **Appendix Tool Versions***. Below are the appendix tool versions that apply to CY19 data collection and reporting cycles listed in Table 1.1 of this Manual.*

Table 2.4 Data Collection Tool Versions

Data Tool Name	Q1-2019 Discharges	Q2-2019 Discharges	Q3-2019 Discharges	Q4-2019 Discharges
Appendix A-1: Data Abstraction Tool (NEWB-1)	v.12.0 & 12.1	v.12.0 & 12.1	v.13.0	v.13.0
Appendix A-2: Data Abstraction Tool (MAT-4)	v.12.0 & 12.1	v.12.0 & 12.1	v.13.0	v.13.0
Appendix A-3: Data Abstraction Tool (CCM-1,2,3)	v.12.0 & 12.1	v.12.0 & 12.1	v.13.0	v.13.0
Appendix A-4: XML Schema MassHealth Specific Files	v.12.0 & 12.1	v.12.0 & 12.1	v.13.0	v.13.0
Appendix A-5: XML Schema Data Deletion Request File	v.12.0 & 12.1	v.12.0 & 12.1	v.13.0	v.13.0
Appendix A-6: MassHealth Data Dictionary	v.12.0 & 12.1	v.12.0 & 12.1	v.13.0	v.13.0
Appendix A-7: Measure Calculation Rules	v.12.0 & 12.1 *(CCM2 see v13.0)*	v.12.0 & 12.1 *(CCM2 see v13.0)*	v.13.0	v.13.0

As noted in Table 7.4, the Appendix A-7 (v12.1) CCM-2 calculation rule was updated in Appendix A-7 (v13.0) which labels all CCM-1,2,3 rules to apply as of Q1-2019. Contact the MassQEX Help Desk at if you have questions on versions of the appendix tools that apply to quarter reporting requirements.

D. Data Accuracy and Completeness Requirements

Data completeness is defined as the submission of measures data that comply with technical data collection and format requirements published in this EOHHS Manual. All Hospitals must meet data accuracy and completeness requirements for all process and outcome measures to be eligible for calculating measure category assignments and incentive payments.

1) **Process Measures**. The following data completeness criteria apply to each reporting period:

   a. Chart Abstracted Data - collect information from patient medical records and other administrative data that apply to all eligible population for measures listed in Table 2.1

   b. Electronic Data Files - upload electronic data files that meet inclusion criteria for each measure population, conform to XML format and includes required MassHealth patient identifier data.

   c. On-line ICD Data Entry Form - enter aggregate ICD population data that supplements the uploaded electronic data files being reported;

   d. Medical Records Data - submit medical chart records for data validation purposes on the specific quarter reporting periods as requested by EOHHS contractor.

   e. Timeliness of Data **-** all data components listed above must be received by the submission due dates listed Section 1.C of this EOHHS manual. Failure to timely submit all data components in formats required by EOHHS will render the hospital not eligible for payments.

2) **Data Reliability Definition.** The data used to calculate a hospital's performance on each measure and measure must 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 patient's 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 Data **–** refers to data elements that have no values present for records submitted.

   d. 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 cannot 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.

3) **Measures Exemption Requirement**. *MassHealth includes a provision for hospitals to request measures exemption using the "MassHealth Hospital Data Accuracy and Completeness Attestation (DACA) Form". Failure to request measures exemption for the specific measures listed in the DACA form will result in not meeting data completeness requirements. See sections 7 to 9 in this manual for completeness criteria that apply to outcome measures.*

Section 3. MassHealth Specific Measures Specifications

3A. Exclusive Breast Milk Feeding (NEWB-1)

Description: Exclusive breast milk feeding during the newborn's entire hospitalization.

The measure is reported as an overall rate which includes all newborns that were exclusively fed breast milk during the entire hospitalization.

Rationale: Exclusive breast milk feeding for the first 6 months of neonatal life has long been the expressed goal of World Health Organization (WHO), Department of Health and Human Services (DHHS), American Academy of Pediatrics (AAP) and American College of Obstetricians and Gynecologists (ACOG). ACOG has recently reiterated its position (ACOG, 2007). A recent Cochrane review substantiates the benefits (Kramer et al., 2002). Much evidence has now focused on the prenatal and intrapartum period as critical for the success of exclusive (or any) BF (Centers for Disease Control and Prevention [CDC], 2007; Petrova et al., 2007; Shealy et al., 2005; Taveras et al., 2004). Exclusive breast milk feeding rate during birth hospital stay has been calculated by the California Department of Public Health for the last several years using newborn genetic disease testing data. Healthy People 2010 and the CDC have also been active in promoting this goal.

Type of measure: Process

Improvement noted as: Increase in the rate.

Numerator statement: Newborns that were fed breast milk only since birth

Included population: Not applicable

Data Elements:

- Exclusive Breast Milk Feeding

Denominator statement: Single term newborns discharged alive from the hospital

Included population:

- Liveborn newborns with ICD-10-CM Principal Diagnosis Code for single liveborn newborn as defined in Appendix A, Table 11.20.1 of the Specifications Manual for Joint Commission National Core measures applicable version)

Excluded populations:

- Admitted to the Neonatal Intensive Care Unit (NICU) at this hospital during the hospitalization
- ICD-10-CM Other Diagnosis Codes for galactosemia as defined in Appendix A, Table 11.21
- ICD-10-PCS Principal Procedure Code or ICD-10-PCS Other Procedure Codes for parenteral nutrition as defined in Appendix A, Table 11.22
- Experienced death
- Length of Stay >120 days
- Patients transferred to another hospital
- Patients who are not term or with < 37 weeks gestation completed

Data Elements:

- Admission Date
- Admission to NICU
- Birthdate
- Discharge Date
- Discharge Disposition

- ICD-10-CM Other Diagnosis Codes
- ICD-10-CM Principal Diagnosis Code
- ICD-10-PCS Other Procedure Codes
- ICD-10-PCS Principal Procedure Code
- Term Newborn

Risk adjustment: No.

Data collection approach: Retrospective data sources for required data elements include administrative data and medical records. Refer to NEWB-1 data abstraction collection tool in Appendix A-1 and data dictionary Appendix A-6 of this manual for detailed instructions.

Data accuracy: Variation may exist in the assignment of ICD-10 codes; therefore, coding practices may require evaluation to ensure consistency.

Measure analysis suggestion: In order to identify areas for improvement in breast milk feeding rates, hospitals may wish to review documentation for reasons for not exclusively providing breast milk. Education efforts may be targeted based on the specific reasons identified.

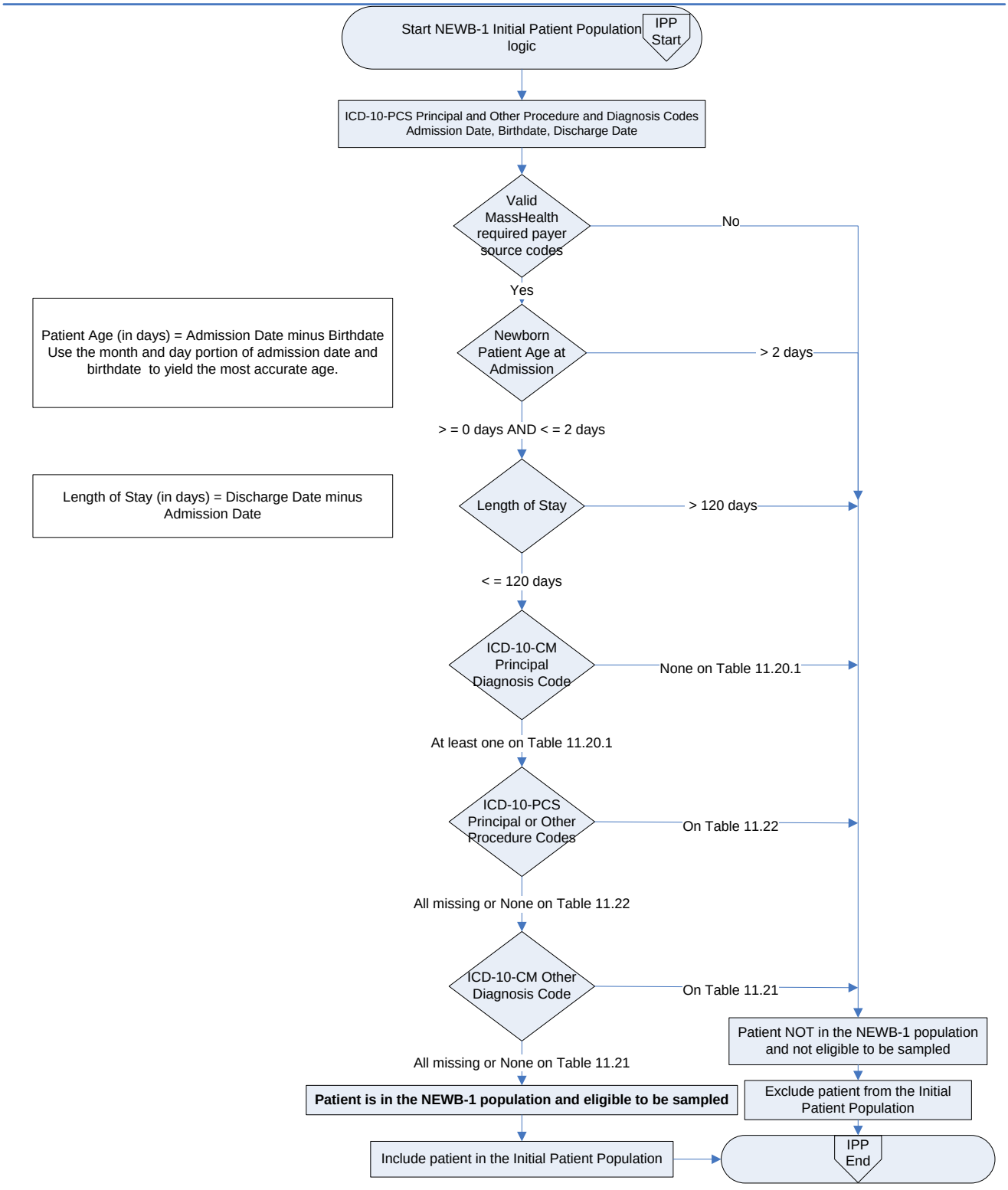
Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the calculation rules in Appendix A-7 of this manual that apply to this measure.

Reference Literature: The *full list and up to date literature references for the NEWB-1 measure are available in the Specifications Manual for Joint Commission National Quality Measures (v2019A).*

ACKNOWLEDGEMENT: The MassHealth NEWB-1 measure attributes described above were adapted from the Specifications Manual for Joint Commission National Quality Measures (version *2019A*) in consultation with The Joint Commission. The 'Specifications Manual for Joint Commission National Quality Measures' is periodically updated by The Joint Commission. Users of the 'Specifications Manual for Joint Commission National Quality Measures' must update their software and associated documentation based on The Joint Commission's published manual production timelines.

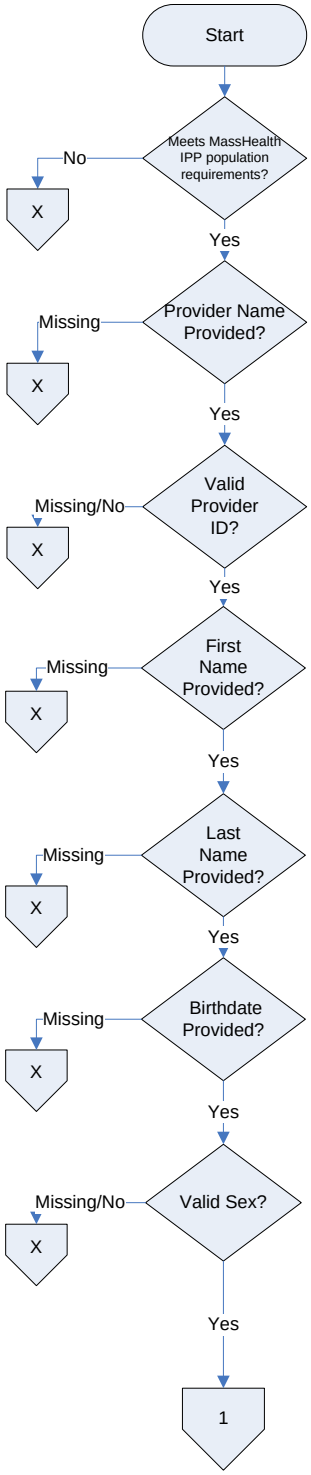
Initial Patient Population Algorithm
Exclusive Breast Milk Feeding (NEWB-1)



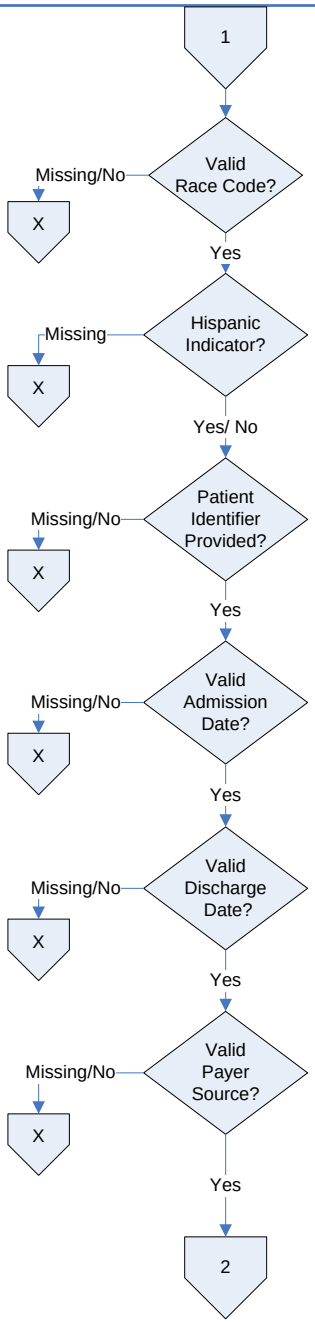
Exclusive Breast Milk Feeding (NEWB-1)

***Numerator:** Newborns that were fed breast milk only since birth

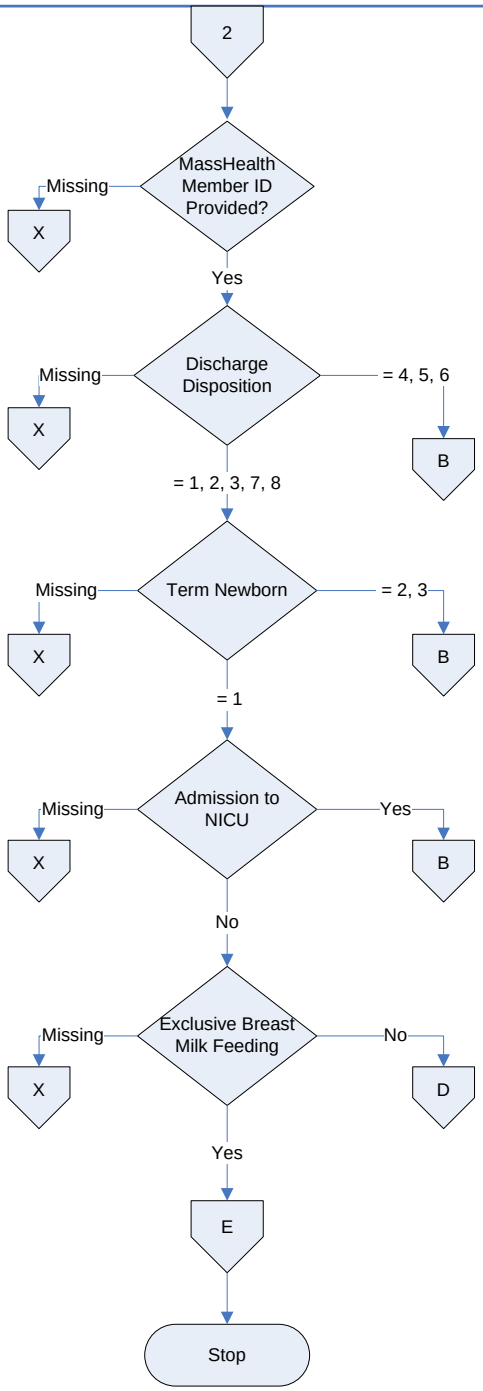
***Denominator:** Single term newborns discharged alive from the hospital



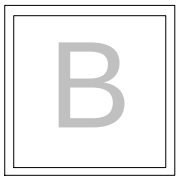
Exclusive Breast Milk Feeding (NEWB-1)



Exclusive Breast Milk Feeding (NEWB-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

Review Ended
In Numerator Population
Included in Numerator and Denominator

Please contact the MassQEX Help Desk at massqexhelp@telligen.com if you require assistance to interpret the content of the measure flowcharts in this section of the manual.

3B. Cesarean Birth, Nulliparous vertex singleton term (MAT-4)

Description: Nulliparous women with a term, singleton baby in a vertex position delivered by cesarean birth.

Rationale: The removal of any pressure to not perform a cesarean birth has led to a skyrocketing of hospital, state and national cesarean section (CB) rates. Some hospitals now have CB rates over 50%. Hospitals with CB rates at 15-20% have infant outcomes that are just as good and better maternal outcomes (Gould et al., 2004). There are no data that higher rates improve any outcomes, yet the CB rates continue to rise. This measure seeks to focus attention on the most variable portion of the CB epidemic, the term labor CB in nulliparous women. This population segment accounts for the large majority of the variable portion of the CB rate, and is the area most affected by subjectivity.

As compared to other CB measures, what is different about NTSV CB rate (Low-risk Primary CB in first births) is that there are clear cut quality improvement activities that can be done to address the differences. Main et al. (2006) found that over 60% of the variation among hospitals can be attributed to first birth labor induction rates and first birth early labor admission rates. The results showed if labor was forced when the cervix was not ready the outcomes were poorer. Alfirevic et al. (2004) also showed that labor and delivery guidelines can make a difference in labor outcomes. Many authors have shown that physician factors, rather than patient characteristics or obstetric diagnoses are the major driver for the difference in rates within a hospital (Berkowitz, et al., 1989; Goyert et al., 1989; Luthy et al., 2003).

The dramatic variation in NTSV rates seen in all populations studied is striking according to Menacker (2006). Hospitals within a state (Coonrod et al., 2008; California Office of Statewide Hospital Planning and Development [OSHPD], 2007) and physicians within a hospital (Main, 1999) have rates with a 3-5 fold variation.

Type of measure: Outcome

Improvement noted as: Decrease in the rate.

Numerator statement: Patients with cesarean births

Included population: ICD-10-PCS Principal Procedure Code or ICD-10-PCS Other Procedure Codes for cesarean birth as defined in Appendix A, Table 11.06 of the Specifications Manual for Joint Commission National Core measures applicable version.

Excluded population: None

Data Elements:

- ICD-10-PCS Other Procedure Codes
- ICD-10-PCS Principal Procedure Code

Denominator statement: Nulliparous patients delivered of a live term singleton newborn in vertex presentation.

Included population:

- ICD-10-PCS Principal Procedure Code or ICD-10-PCS Other Procedure Codes for delivery (as defined in Appendix A: ICD-10-PCS Code Tables 11.01.1 of the Specifications Manual for Joint Commission National Core measures applicable version)
- Nulliparous patients with ICD-10-CM Principal Diagnosis Code or ICD-10-CM Other Diagnosis Codes for outcome of delivery as defined in Appendix A, Table 11.08 (of the Specifications Manual for Joint Commission National Core measures applicable version) and with a delivery of a newborn with 37 weeks or more of gestation completed

Excluded populations:

- ICD-10-CM Principal Diagnosis Code or ICD-10-CM Other Diagnosis Codes for multiple gestations and other presentations as defined in Appendix A, Table 11.09 (of the Specifications Manual for Joint Commission National Core measures applicable version)
- Less than 8 years of age
- Greater than or equal to 65 years of age
- Length of stay > 120 days
- Gestational age < 37 weeks or UTD

Data Elements:

- Admission Date
- Birthdate
- Discharge Date
- Gestational Age
- ICD-10-CM Other Diagnosis Codes
- ICD-10-CM Principal Diagnosis Code
- *Previous Live Births*

Risk adjustment: No

Data collection approach: Retrospective data sources for required data elements include administrative data and medical records. Refer to MAT-4 data abstraction collection tool in Appendix A-2 and data dictionary Appendix A-6 of this manual for detailed instructions.

Data accuracy: Variation may exist in the assignment of ICD-10 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-10 codes or patient populations. Data could then be analyzed further determine specific patterns or trends to help reduce cesarean sections.

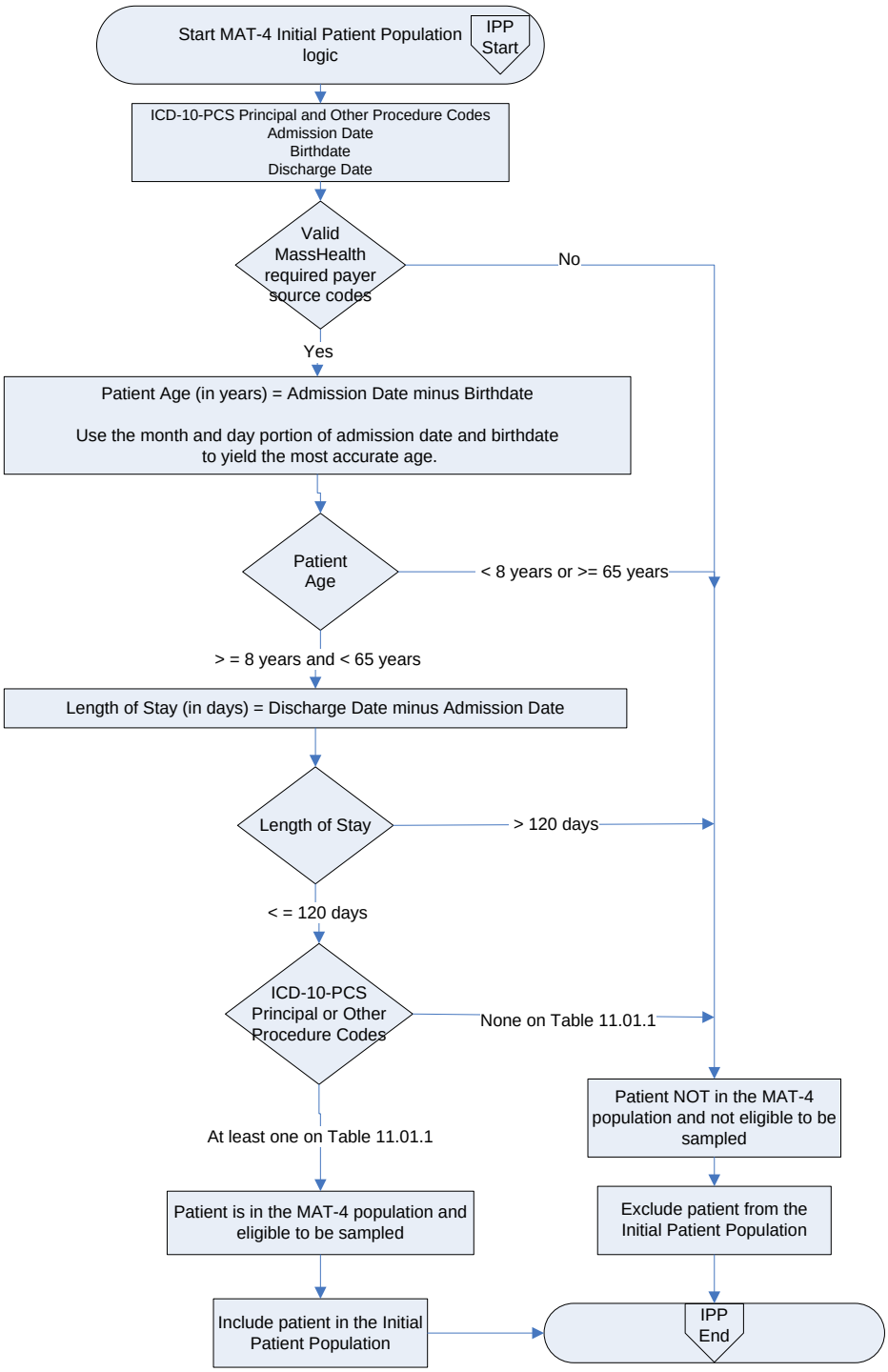
Sampling: Yes. For additional information on sample size requirements refer to Section 4 of this manual.

Data reported as: Aggregate rate generated from count data reported as a proportion. Refer to the calculation rules in Appendix A-7 of this manual that apply to this measure.

Reference Literature: The *full list and up to date literature references for the MAT-4 measure are available in the Specifications Manual for Joint Commission National Quality Measures (v2019A)*.

ACKNOWLEDGEMENT: The MassHealth MAT-4 measure attributes described above were adapted from the Specifications Manual for Joint Commission National Quality Measures (version *2019A*) in consultation with The Joint Commission. The 'Specifications Manual for Joint Commission National Quality Measures' is periodically updated by The Joint Commission. Users of the 'Specifications Manual for Joint Commission National Quality Measures' must update their software and associated documentation based on The Joint Commission's published manual production timeline.

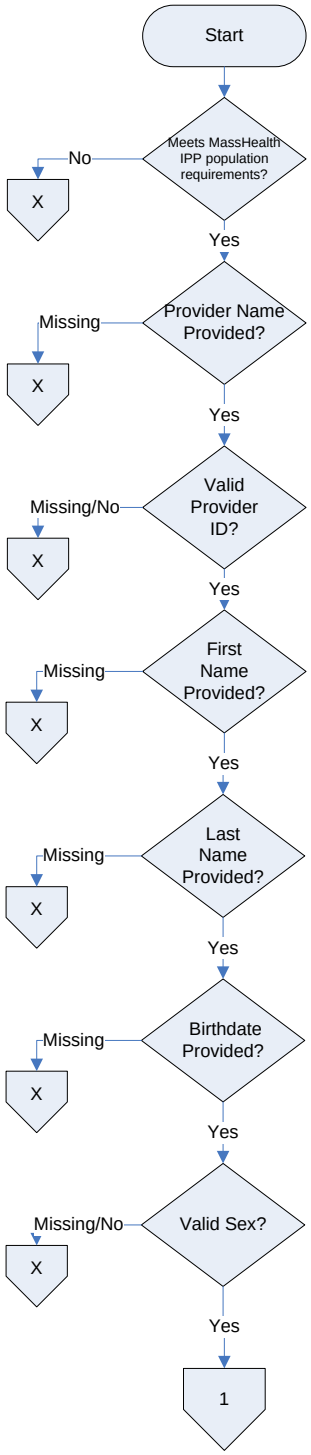
Initial Patient Population Algorithm
Cesarean Birth (MAT-4)



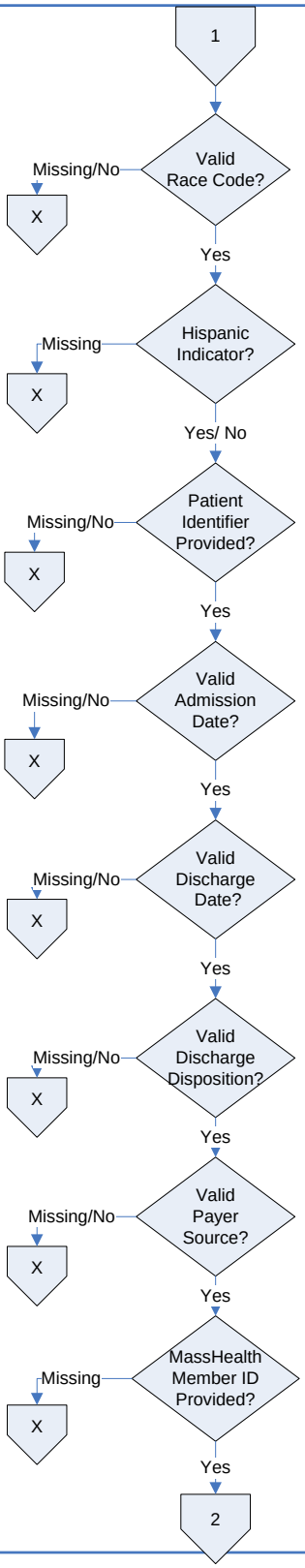
Cesarean Birth (MAT-4)

***Numerator:** Patients with cesarean births

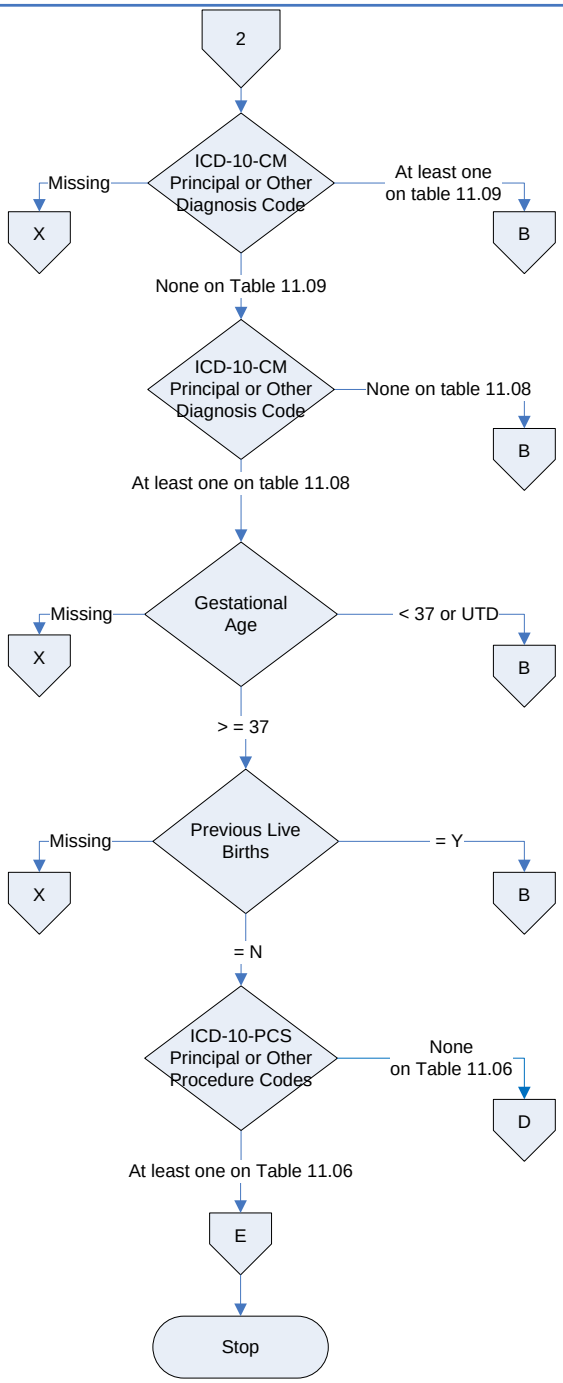
***Denominator:** Nulliparous patients delivered of a live term singleton newborn in vertex presentation



Cesarean Birth (MAT-4)



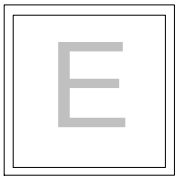
Cesarean Birth (MAT-4)



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

Please contact the MassQEX Help Desk at massqexhelp@telligen.com if you require assistance to interpret the content of the measure flowcharts in this section of the manual.

3C. Care Coordination Measure Set

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 measures listed in Table 2.1 of this manual. *Refer to the initial patient population algorithm for identification of the included population.*

3C-1: Reconciled Medication List Received by Discharge Patient (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

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-3 and data dictionary in Appendix A-6 of this manual for detailed instructions.

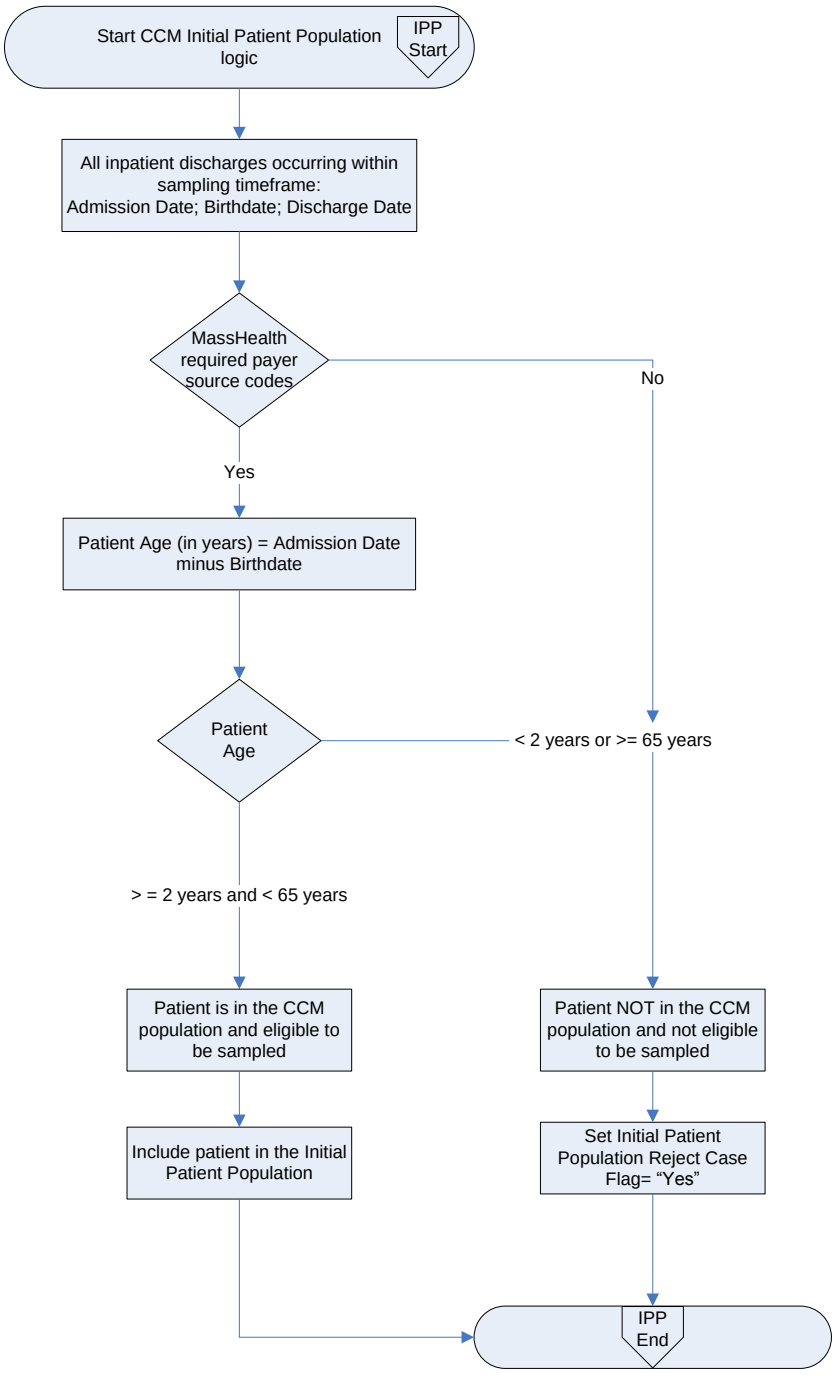
Data accuracy: Variation may exist in documentation provided at the time of transition and documentation of transmission time; therefore, medical record documentation processes may require evaluation.

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

Sampling: Yes. Refer to Section 4 in this Manual for details on sample size requirements.

Data reported as: Aggregate rate generated from count data. Refer to the Appendix A-7 for the calculation rules that apply to this measure.

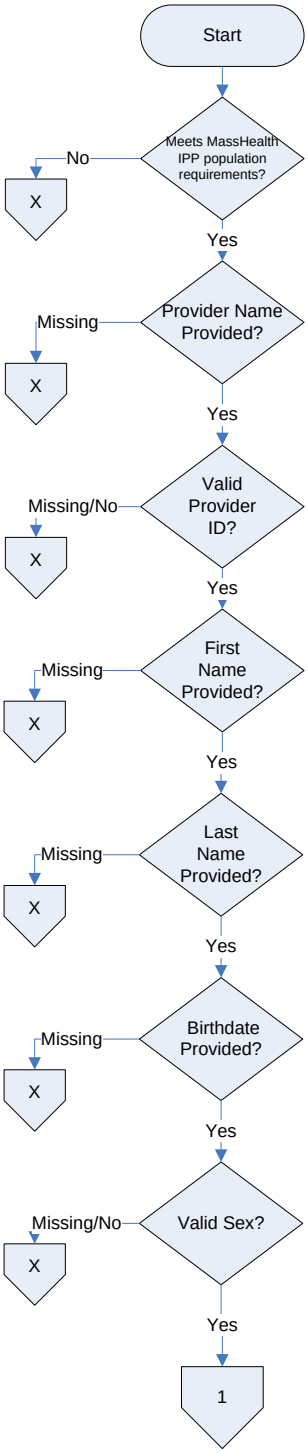
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



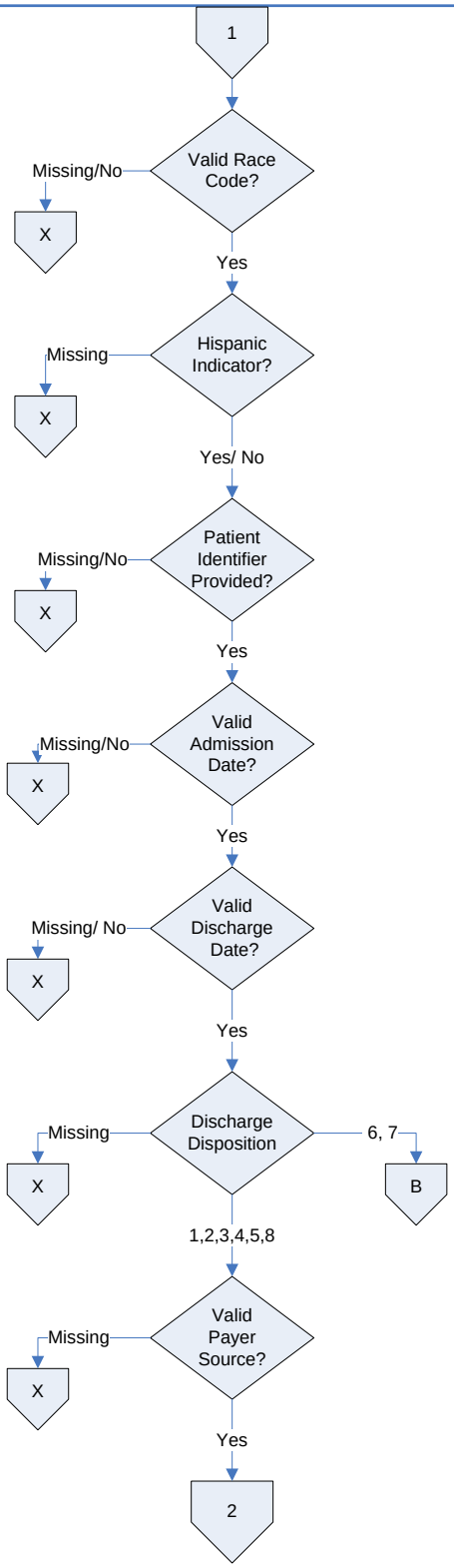
Care Coordination Measure (CCM-1)

***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.

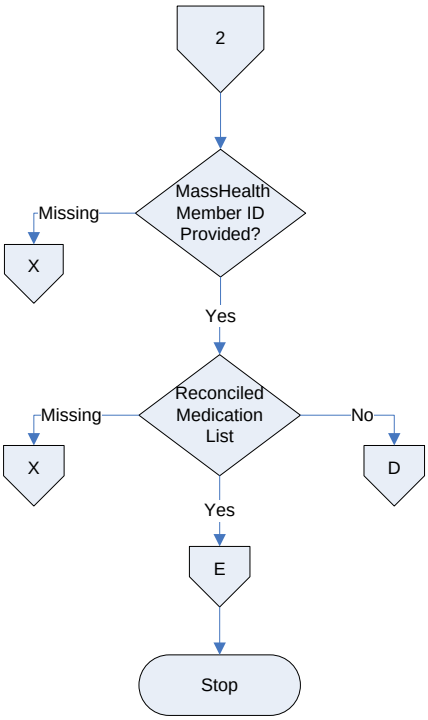
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



Care Coordination Measure (CCM-1)

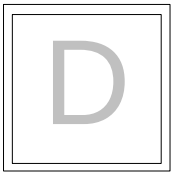


Care Coordination Measure (CCM-1)

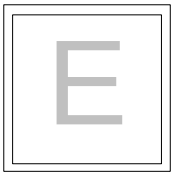


Review Ended
Not in Measure Population
Missing or Invalid Data
Case will be Rejected

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

Please contact the MassQEX Help Desk at massqexhelp@telligen.com if you require assistance to interpret the content of the measure flowcharts in this section of the manual.

3C-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 basic elements that should be included in transition records for effectively managing transitions of care at the time of discharge*. *Various studies led to an agreed upon minimum set of data elements that are necessary* to facilitate communication and exchange of information for 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, *eight* of the specified 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

Risk adjustment: No

Data collection approach: Retrospective data for required data elements include administrative and medical records. Refer to data abstraction tool in Appendix A-3 and data dictionary in Appendix A-6 of this manual for detailed instructions.

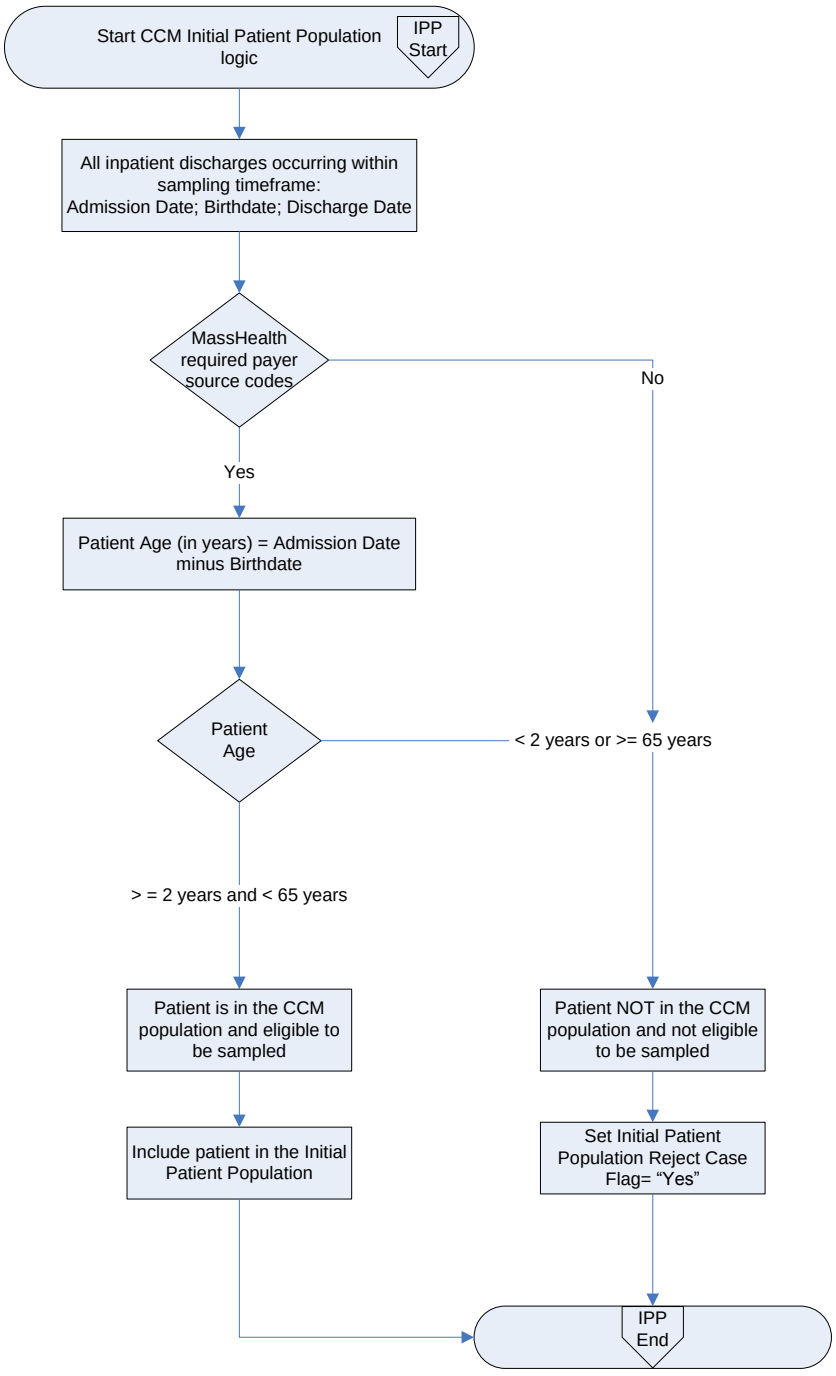
Data accuracy: Variation may exist in documentation provided at the time of transition and transmission time; therefore, medical record documentation processes may require evaluation.

Measure analysis suggestion: *Review specific patterns or trends for missing data elements*.

Sampling: Yes. Refer to Section 4 in this Manual for details on sample size requirements.

Data reported as: Aggregate rate generated from count data. Refer to the Appendix A-7 for the calculation rules that apply to this measure.

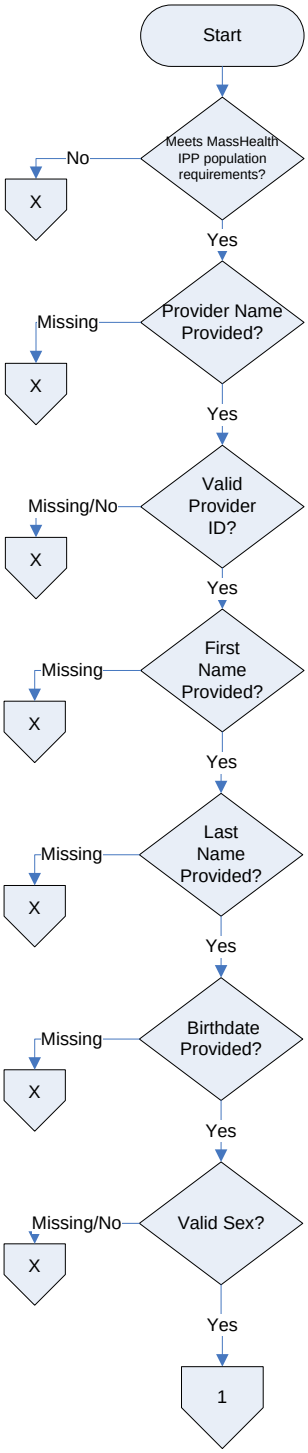
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



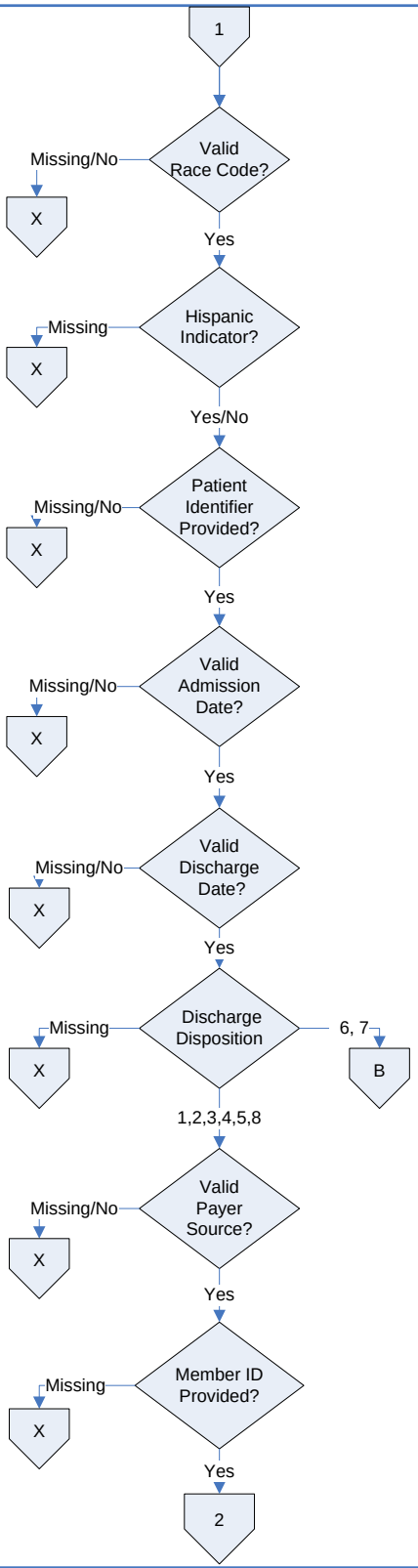
Care Coordination Measure (CCM-2)

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

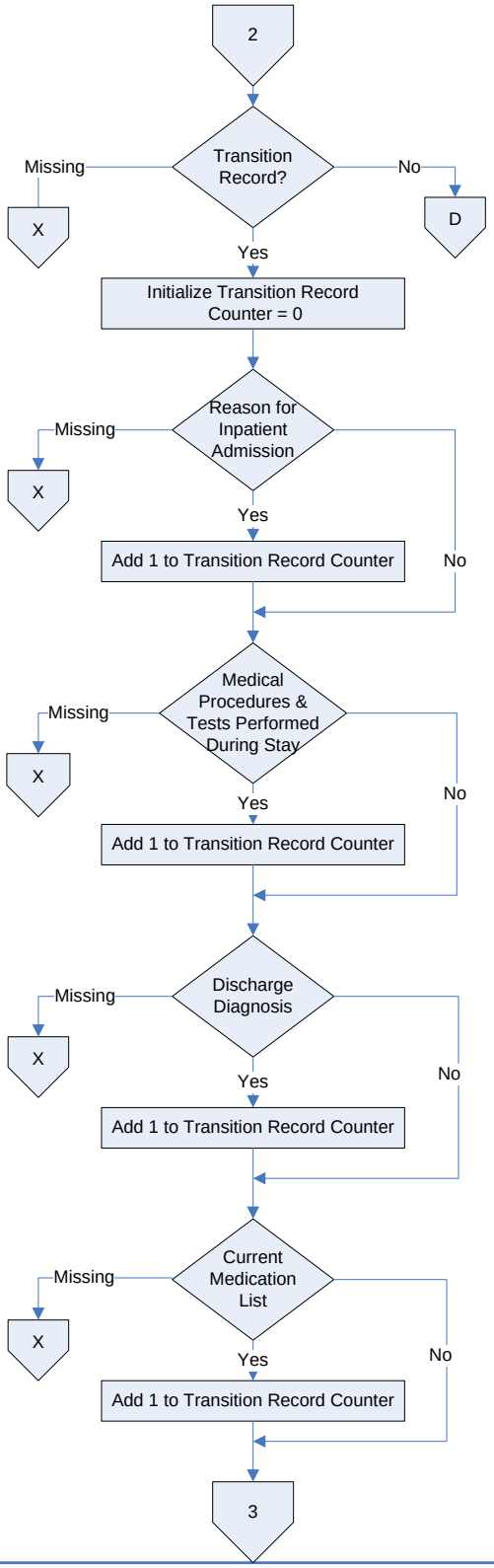
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



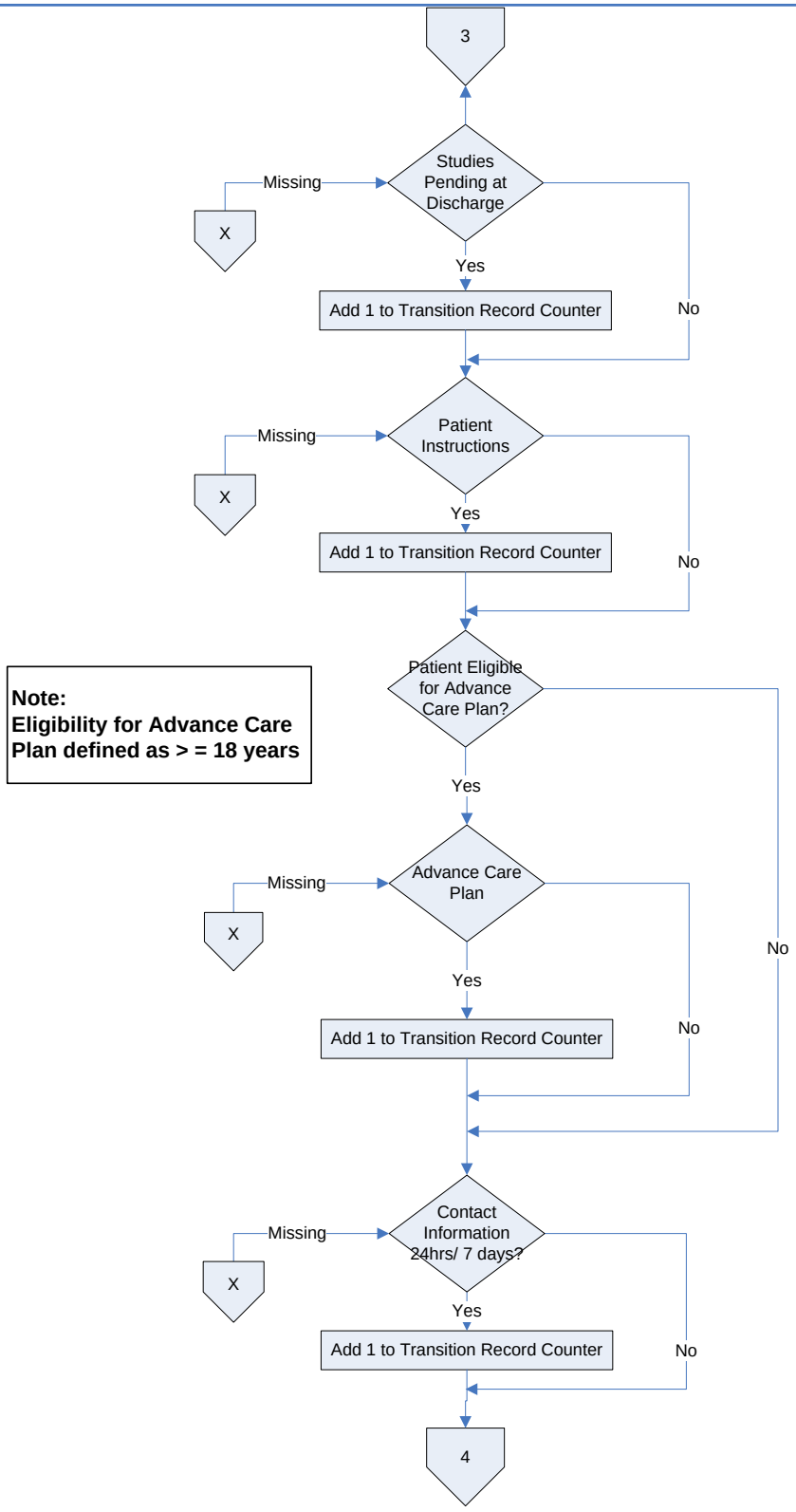
Care Coordination Measure (CCM-2)



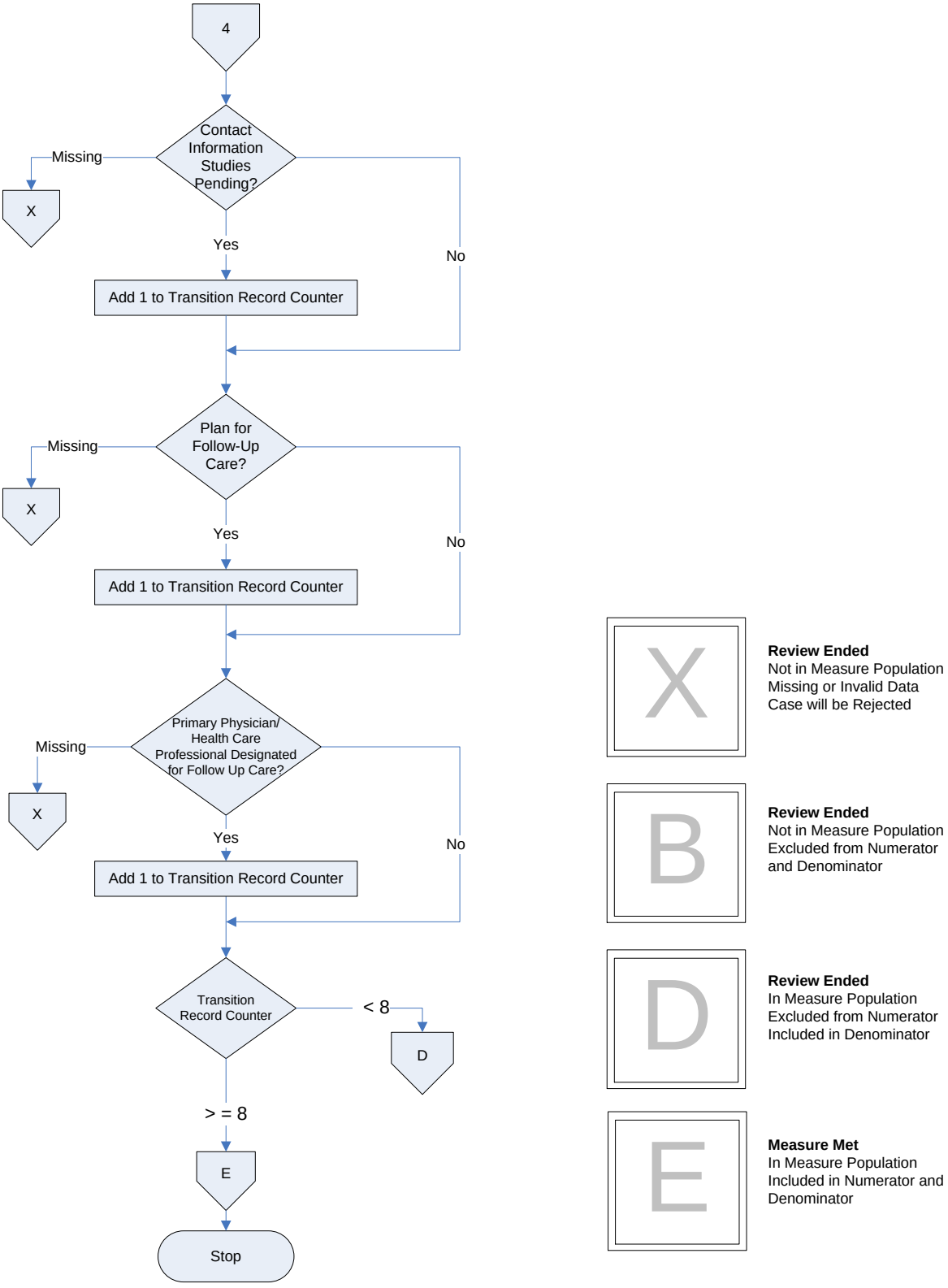
Care Coordination Measure (CCM-2)



Care Coordination Measure (CCM-2)



Care Coordination Measure (CCM-2)



Please contact the MassQEX Help Desk at massqexhelp@telligen.com if you require assistance to interpret the content of the measure flowcharts in this section of the manual.

3C-3: Timely Transition 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 patient's 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

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-3 and data dictionary in Appendix A-6 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.

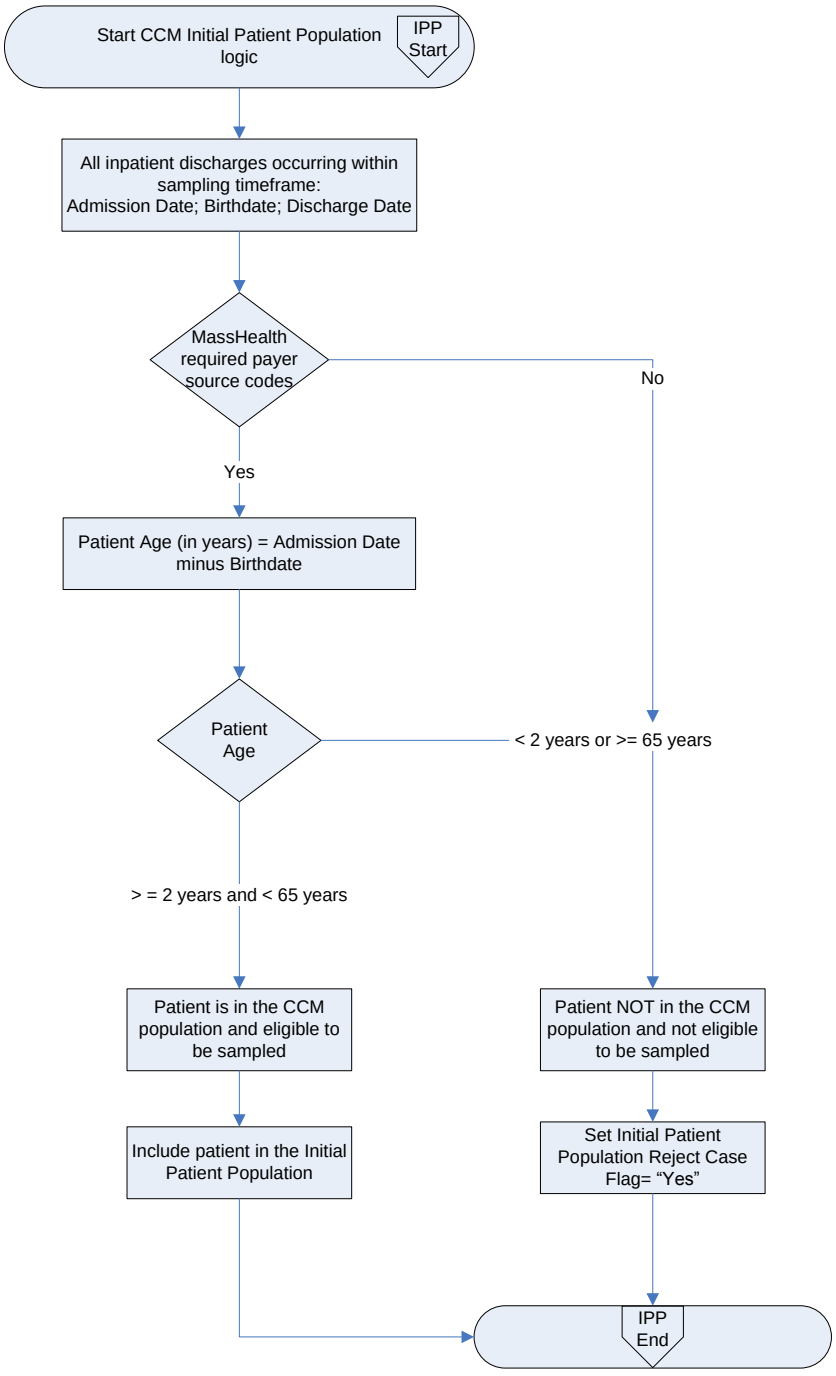
Sampling: Yes. Refer to Section 4 in this Manual for details on sample size requirements.

Data reported as: Aggregate rate generated from count data. Refer to the calculation rules in Appendix A-7 of this manual that apply to this measure.

Selected References (CCM measures)

- American Medical Association - Convened Physician Consortium for Performance Improvement, American Board of Internal Medicine Foundation, American College of Physicians and Society of Hospital Medicine Care Transitions Performance Measurement Set: Inpatient Discharges & Emergency Dept. Discharges, Coding reviewed and Updated April 2016.
- 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.
- McDonald, KM., Schultz, E., Albin, L., Pineda, N, Lonhart, J., Sundram, V., Smith-Spangler, C., Brustrom, J., Malcolm, E., Rohn, L., and Davies, S. Care Coordination Atlas Version 4. AHRQ Publication No. 14-0037-EF. Rockville, MD, Agency for Healthcare Research and Quality, June 2014.
- National Quality Forum. Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination, 2010, A Consensus Report http://www.qualityforum.org/Home.aspx. Accessed August 12, 2011.

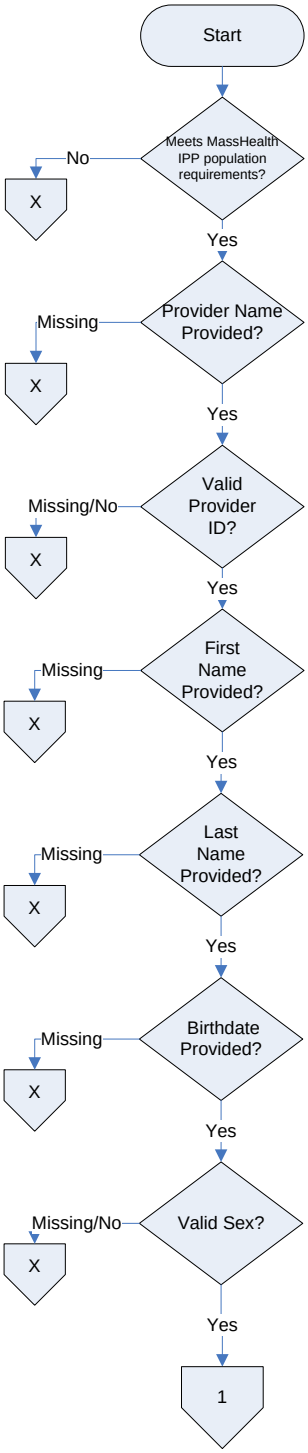
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



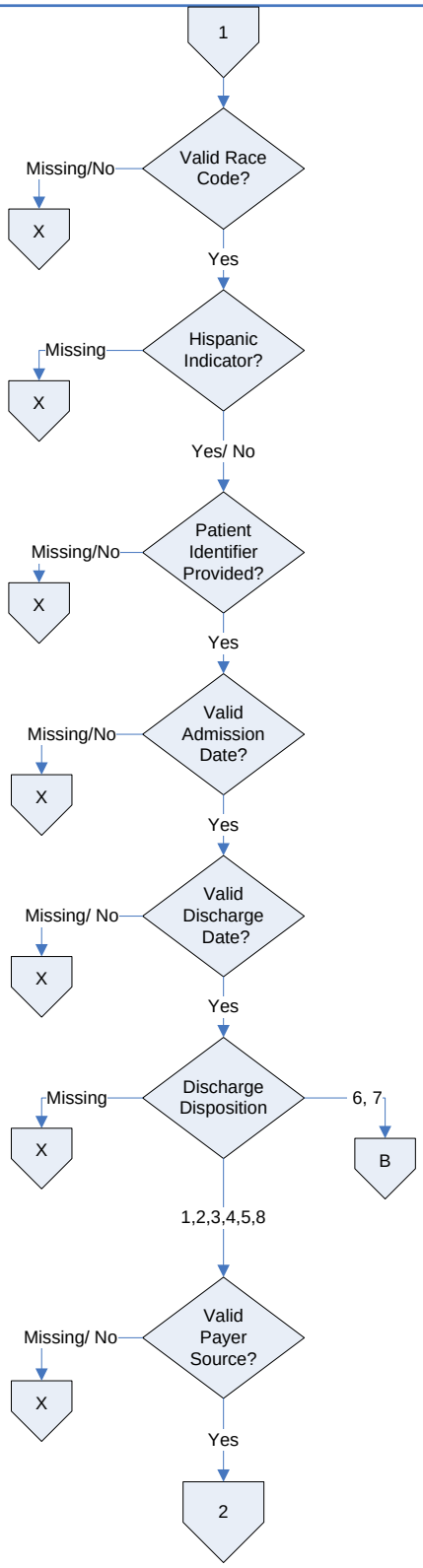
Care Coordination Measure (CCM-3)

***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

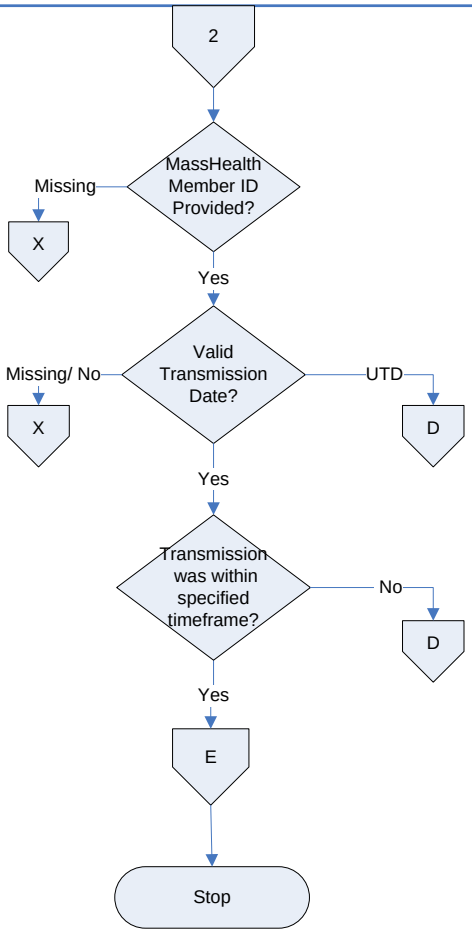
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



Care Coordination Measure (CCM-3)



Care Coordination Measure (CCM-3)



Note:
If the Transition Record was transmitted within 2 days of the discharge date, 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

Please contact the MassQEX Help Desk at massqexhelp@telligen.com if you require assistance to interpret the content of the measure flowcharts in this section of the manual.

3D. Health Disparity Composite and Calculation Methods

A. Measure Attributes

Rationale: Composite measures typically summarize individual metrics that are somewhat or can be created from indicators that are not highly correlated (NHDR, 2017, Nolan and Berwick, 2006). A composite measure can provide a better understanding of healthcare quality because it represents various aspects of care and focuses improvement efforts across a spectrum of processes rather than just its parts. The pooling of data from various measure sets reported to MassHealth represent consensus-based desired care practices that every patient should receive. Hence these measures serve as a basis for evaluating disparities since they reflect service dimensions where racial groups have shown poor outcomes of care and opportunity to improve equitable care (CDC, 2013; NHDR 2017). Similarly, the opportunity model (all-or-nothing) of measurement assumes each patient is eligible to receive one or more of the recommended care processes across a spectrum of care. The disparity composite measure is a modification of this approach that takes the individual instances of care across the reported measures, sorts them by racial group and then combines them into a single score. The unit of analysis is the racial group (not the individual patient). From an equity perspective, receiving the desired measure care processes making up the composite should not differ across groups (NHDR 2017, IOM 2010, Harper et al, 2008, 2010, 2016; Weinstein et al 2017). A health disparity is a measurable variation in the characteristic of one or more populations relative to a reference point that can be expressed as a favorable (desirable) or undesirable event. Not receiving recommended care is what contributes to a health disparity.

Type of Measure: Composite of reported process measures data.

Composite Measure Components - represents the total number of instances each racial group did not receive the desired care process (numerator) divided by the total number of opportunities available for receiving the desired care process (denominator) defined as follows:

- Racial Comparison Group Composite Rate - is the sum of the numerators (instances desired care was not given) for each racial group divided by the sum of denominators (opportunities to receive the desired care).

- Reference Group Composite Rate - is the sum of the numerators from all combined racial groups (instances desired care was not given) divided by the sum of denominators (opportunities to receive the desired care).

- Between Group Variance (BGV**) -** the variance statistic measures the degree of variation in care of each racial comparison group's composite rate from the hospital reference group rate.

Data Collection Approach: Retrospective data sources include administrative and medical records. Hospitals may over-sample their racial group data to improve precision of composite rates.

Data Accuracy: Consistent collection of Race or Hispanic Indicator data elements and minimizing UNKOWN race codes are necessary to improve reliability of racial group composite rates.

Risk Adjustment: Does not apply to care process measures.

Data Reported as: See Section 3.D of this manual on how missed opportunity results are reported.

Improvement Noted as: *A lower BGV.* Note that a BGV of zero (0) does not indicate the desired care was given to all patients every time, only that there was no variance in care provided to each racial group from the hospital reference group.

Measure Interpretation: Composite results should be done is in comparison to other data (e.g.: individual measure result rates) to identify areas for targeted quality improvement

B. Measure Calculation Method

1. Description of Terms and Formulas

a) *Racial Group Categories***.** The racial group allowable codes and values listed in Section 2.B of this manual are modified for composite measure calculation purposes and summarized below.

Table 3.1: Racial Group Recoding

CHIA Allowable Values	CHIA Codes
Hispanic	Y
Asian (non-Hispanic)	R2
Black/African American (non-Hispanic)	R3
White (non-Hispanic)	R5
Other (non-Hispanic)	R1+R4+R9

- As noted in Table 3.1, the "Other" category combines race codes (R1+R4+R9) and allowable values (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, Other race) that represent smaller volume in the hospital's calendar year reported data. This is done to improve sample size across groups.

- The non-Hispanic qualifier indicates each group reflects the primary self-designated race.

- The "UNKNOW (non-Hispanic)" code is not valid for disparity analysis and therefore excluded from all the composite measure calculations described below.

b) Definition of Hospital Measure Population Groups

- Comparison Group: The comparison groups are the count data for each of the five (5) racial/ethnic categories derived from the hospital's calendar year reported data, excluding UNKNOW code.

- Reference Group: The reference group is count data on total population of all racial/ethnic categories derived from the hospital's calendar year reported data, excluding UNKNOW code. This definition of the reference group was selected based on research literature which recommends pairing the total population average when using between group variance statistics. The total population average is more stable than a standard reference point and has the advantage of having the same value across all domains that encompass the same population. Other considerations included ability to calculate the disparity measure even when the hospital's data may not contain the maximum amount of racial groups.

c) *Definition of Reference Group Composite Rate***.**

Within each hospital, total of all five (5) racial/ethnic (R/E) categories, the hospital reference group composite rate (r_{ref}) is calculated using the following formula:

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

Where:
r_{ref} = Reference group composite rate is calculated by dividing the reference group numerator (n_{ref}) by the reference group denominator (d_{ref})
n_{ref} = Sum the numerators from all 5 racial/ethnic groups to get the reference group numerator
d_{ref} = Sum the denominators from all 5 racial/ethnic groups to get the reference group denominator

d) *Definition of Comparison Group Composite Rate***:** Within each hospital, for each of the racial/ethnic categories, the comparison group *composite rate* (r_i) is calculated using the following formula:

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

Where:
r_i = Comparison group composite rate is calculated by dividing the comparison group numerator (n_i) by the comparison group denominator (d_i)
n_i = For each R/E group, sum the numerators from all measures to get the comparison group numerator.
d_i = For each R/E group, sum the denominators from all measures to get the comparison group denominator

e) *Between-Group Variance (BGV).* The BGV for each racial/ethnic comparison group's composite rate from the reference group composite rate is calculated using the following formula:

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

Where:
r_i = is the composite rate in racial/ethnic comparison group i
r_{ref} = is the reference group composite 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
i =1 to n is the range of number of groups where n is total number racial/ethnic comparison groups within the hospital.

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

f) *Disparity Composite Value***.** The composite value is defined as the final BGV statistic that is calculated by summing all the racial/ethnic comparison group BGV values. As of RY15 results, the final BGV statistic will no longer be converted (to 1-BGV) to align with the individual clinical quality measure rate directionality**.**

The BGV statistic uses an interval scale that ranges from zero to one (0 – 1) displayed in 6 decimal points. A value close to zero (0) may indicate no variation exists whereas a value close to one (1) may indicate that a wide variation exists. Refer to Section 3.D for more detail on how to interpret BGV results.

2. Example of Composite Measure Calculation**.** A step-by-step example of the hospital composite measure calculation is illustrated below. Hospital A's scenario displays the following summary information extracted from the reported calendar year data files.

Step 1 – Criteria to Identify the Racial Groups

- The hospital's data files must have more than one racial/ethnic group, after UNKNOW code is excluded.

- The hospital's data file is sorted by all numerators & denominators to obtain the information shown below.

Table 3.2: Recoding of Hospital Racial Groups (Example)

MHRACE Code	Hispanic Indicator	Recoded R/E Category	R/E Category Name	Numerator (Care not given)	Denominator
-----	Y	1	Hispanic	30	60
R3	N	2	Black/African American (Non-Hispanic)	2	5
R5	N	3	White (Non-Hispanic)	20	100
R2	N	4	Asian (Non-Hispanic)	3	5
R1+R4+R9	N	5	Other (Non-Hispanic)	15	30
-------	**-------**	**-------**	**TOTALS**	**70**	**200**

- Once the racial/ethnic groups have been recoded the hospital reference and comparison group rates are calculated using the following steps below.

Step 2: Calculate the Reference Group Composite 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 rate (r_{ref}) by dividing the reference group numerator by the reference denominator (d_{ref}) using the formula shown in Section 4.c above.
- Data from Table 3.2 is used to illustrate the following calculation:

Example:

Reference group denominators = 60+5+100+5+30=200

Reference group numerator = 30+2+20+3+15=70

Reference group composite rate = 70/200 = 35%

Step 3: Calculate the Racial Comparison Group Composite Rates.

- For each race/ethnic group, sum the denominators from all measures to get comparison group denominator (d_i)
- For each race/ethnic group, sum the numerators from all measures to get comparison group numerator (n_i).
- Calculate the race/ethnic comparison group composite rate (r_i) by dividing the comparison group numerator by the comparison group denominator (d_i) using the formula shown in Section 3.D above.
- Data from Table 3.2 is used to illustrate the following calculation:

Example:

(r_i) Hispanic group rate = 30/60 = 50%

(r_i) Black/African American, Non-Hispanic rate = 2/5 = 40%

(r_i) White, Non-Hispanic rate = 20/100 = 20%

(r_i) Asian, Non-Hispanic rate = 3/5 = 60%

(r_i) Other Races, Non-Hispanic rate = 15/30 = 50%

Step 4: Calculate the Comparison Group BGV Statistics

- Compute the BGV statistic for each racial group using formula shown above
- Data from Table 3.2 is used to illustrate the following calculation:

Example:

$$BGV_i = \frac{d_i}{d_{ref}}(r_i - r_{ref})2$$

$$BGV1_{Hispanic} = \frac{60}{200}(0.5-0.35)^2 = 0.006750$$

$$BGV2_{Black/African\ American,\ Non\text{-}Hispanic} = \frac{5}{200}(0.4-0.35)^2 = 0.000063$$

$$BGV3_{White,\ Non\text{-}Hispanic} = \frac{100}{200}(0.2-0.35)^2 = 0.011250$$

$$BGV4_{Asian,\ Non\text{-}Hispanic} = \frac{5}{200}(0.6-0.35)^2 = 0.001563$$

$$BGV5_{Othe\ ,\ Non\text{-}Hispanic} = \frac{30}{200}(0.5-0.35)^2 = 0.003375$$

Step 5: Calculate Disparity Measure Final BGV Statistic

- Compute the hospital's final BGV statistic by summing all the racial/ethnic composite group BGV.
- Data from Table 3.2 is used to illustrate the following calculation:

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

Example

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

The final BGV summarizes the absolute differences between each racial/ethnic comparison group rate from the reference group composite rate and weights each comparison group by its population size. The disparity measure statistics shown above are summarized in the hospital's year-end report.

Contact the MassQEX Help Desk massqexhelp@telligen.com for questions on disparity measure calculations.

Select References (HD-2 Measure)

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Section 4. Medicaid 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 MassHealth Patient Population

The CMS Specifications Manual for NHIQM defines the "Initial Patient Population" (also termed ICD population) as all patients who share a common set of clinical and administrative characteristics (admission date, ICD-10-CM principle diagnosis or ICD-10-PCS procedure code, length of stay less than or equal to 120 days, payer source, age, etc.) for a given condition from which the sample must be drawn and represent. All ICD-10 codes relevant to the initial patient population must be identified prior to applying data integrity filters, measure exclusions and the sampling method. The term 'MassHealth Initial Patient Population' will be used in this section to refer to all patients who share the common set of clinical and administrative data elements (payer, race elements, other identifier codes, etc.) that are eligible to be sampled for the measure discharge data periods.

B. Sampling Methods Overview

Sampling is the process of selecting cases from a broader patient population without collecting data for the entire population. A well designed sample is based on a selection of cases that provide 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) **Sampling Approache**s. Hospitals can use either the simple random sampling or systematic random sampling methods to ensure their data is representative of the measure initial patient population. Random sampling 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:
      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.

Hospitals must ensure that the sampling approach selected is consistently applied for each quarter. While over-sampling is not required, submitting additional cases will improve the precision of measure rates.

2) **Order of Data Flow.** Sampling is a useful method to identify cases for abstraction from medical records that apply to the initial patient population. The order of data flow for selecting cases involves the following steps:
   a. Identify the Initial Patient Population of the measure set as described in Section 4.A above.
   b. Follow either simple random or systematic random sampling approach described above.
   c. Pull the sample of medical records for each measure set based on sample size requirements.
   d. Abstract specific data elements needed for each measure.

Hospitals may sample their population or report their entire population. However, sampling should not be used unless the hospital has a large number of cases for a given measure. Hospitals whose 'MassHealth ICD Patient Population' size is less than the minimum number of cases cannot sample should adhere to the sample size requirement tables provided below.

C. Medicaid Sampling Requirement

The sampling methods selected to establish sample size requirements for all 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) **MassHealth Sampling Instruction**. 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 that meets the criteria for **'**MassHealth Initial Patient Population**'** for each measure as defined in this manual. The minimum required sample size is based on the estimated volume of MassHealth discharges required for each measure.

2) **Dates of Service**. Hospitals must identify the MassHealth Initial Patient Population measures data using available databases that contain all discharges for the quarter reporting periods specified in the Acute RFA and Section 1.C of this manual using the sample size requirements tables provided below.

3) **Aggregate Medicaid Payer Sampling**. The MassHealth Initial Patient Population is identified as an aggregate of all the Medicaid payer source codes. Please refer to Table 2.2 of this EOHHS manual for a list of new Medicaid payer code inclusions that apply to quality measures data sampling and reporting.

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

   - Step 1- Identify Initial Patient Population based on measure specifications and dates of service.
   - Step 2- Identify and include cases with all the Medicaid payer inclusion codes listed above.
   - Step 3- Identify MassHealth sample size requirements for each measure using Tables below.
   - Step 4- Select and apply the random sampling approach to identify charts.
   - Step 5- Begin medical chart abstraction of specified measure on cases selected.

The steps outlined above begin with the initial patient population and then extracts the all Medicaid payer cases. These steps can be followed to identify cases for all the measures being submitted.

D. Medicaid Sampling Options

Hospitals that choose to sample have the option of sampling either quarterly (option A) or monthly (option B) for each measure. Hospitals must select and utilize only one option consistently (either quarterly or monthly), during a calendar year submission period.

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 method must use the minimum sample sizes specified in the revised Table 4.1 below.

Table 4.1: QUARTERLY Sample Size Requirement

Number of MassHealth Discharges Per QUARTER (Initial Patient Population Size "N")	**Aggregate of All Medicaid Payer** Minimum Required Sample Size "n"
1 - 59	No sampling; 100% of ICD Population is required
60 – 119	60
120 – 199	92
> = 200	103

As noted in the Table 4.1 above, the quarterly sampling option Initial patient population size (N) and the minimum required sample size (n) column numbers have been adjusted for the aggregation of all Medicaid payer population inclusions defined in Section 2.B of this EOHHS manual.

The quarterly sampling option displays a revised MassHealth initial patient population (N) category numbers and required minimum sample sizes (n) that apply to each clinical process measure listed in Section 2.A of this manual.

Hospitals must ensure that the quarterly sample sizes selected for each measure are representative of the aggregate of all Medicaid payer population inclusions listed in Section 2.B of this EOHHS manual. Below is an example of how the quarterly sampling option would be used for calendar year reporting.

Example #1: Options A - MassHealth Quarterly Sampling of each Measure

- During the first quarter, the hospital's MassHealth initial patient population is N=30 cases. Using the revised Table 4.1 above, no sampling is allowed and 100% of the Medicaid population is required.

- During the second quarter, the hospital's MassHealth initial patient population is N=67 cases. Using the above Table 4.1, the minimum required sample would be 60 cases for the Medicaid population.

- During the third quarter, the hospital's MassHealth initial patient population is N=75 cases. Using the above Table 4.1, the required sample would be a minimum of 60 cases for the Medicaid population.

- During the fourth quarter, the hospital's MassHealth initial patient population is N=207 cases. Using the above Table 4.1, the required sample would be a minimum of 103 cases for the Medicaid population

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

Table 4.2: MONTHLY Sample Size Requirements for Each Measure

Number of MassHealth Discharges Per MONTH (Initial Patient Population Size "N")	**Aggregate of All Medicaid Payer** Minimum Required Sample Size "n"
1 - 19	No sampling; 100% of ICD Population is required
20 – 39	20
40 – 66	30
> = 67	35

As noted in the Table 4.2 above, the monthly sampling option Initial patient population size (N) and the minimum required sample size (n) column numbers have been adjusted for the aggregation of all Medicaid payer population inclusions defined in Section 2.B of this EOHHS manual.

The monthly sampling option displays a revised MassHealth initial patient population (N) category numbers and required minimum sample sizes (n) that apply to each measure listed in Section 2.A of this manual.

Hospitals must ensure that the monthly sample sizes selected for each measure are representative of the aggregate of all Medicaid payer population inclusions listed in Section 2.B of this EOHHS manual. Below is an example of how the monthly sampling option would be used for calendar year reporting.

Example #2: Option B - MassHealth Monthly Sampling of Each Measure

- During January the hospital's MassHealth initial patient population is N=19 cases. Using the revised Table 4.2 above, no sampling is allowed and 100% of the Medicaid population is required for the month.

- During February the hospital's MassHealth initial patient population is N=65 cases. Using the above Table 4.2, the required Medicaid sample would be a minimum of 30 cases for this month.

- During March the hospital's MassHealth initial patient population is N=100 cases. Using the above Table 4.2, the required Medicaid sample size would be 35 cases for this month

E. ICD Patient Population Data Definitions

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

1) **Definition of ICD Population Data** - include the following information as follows:

a) *ICD-10 Population Size* - refers to count of patient population with all relevant ICD-10-CM diagnosis or ICD-10-PCS codes included in the measure defined in Section 4.C above.

b) *Aggregate Medicaid Payer Population Size* - refers to count of patient population with all relevant ICD-10 codes included in the measure that meet all Medicaid payer inclusions in Section 4.C.4 above.

c) *Sample Size* - refers to whether or not the hospital has sampled data for the time period being reported. If no sampling was done then enter the total population count.

2) **On-line ICD Population Data Entry Form**

a) The ICD population and sample size count information must be entered 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*.

b) Hospitals that do not have any inpatient population and sample size data for a given measure, during a quarter (or month), must enter zero (0) onto the form to meet data reporting requirement.

c) Failure to comply with ICD population data entry will result in not meeting data completeness requirements as defined in Section 2.E of this manual

Refer to Section 5.A of this EOHHS Manual for other ICD population data entry instruction and requirements.

Section 5. MassQEX Data Transmittal Guidelines

This section outlines the technical guidelines for transmittal of process measures data files listed in Table 2.1 of this manual. Hospitals and vendors must comply with instructions provided in this section.

EOHHS has designated the MassHealth Quality Exchange (MassQEX) as the secure web portal for submitting all required electronic data files and information outlined in this section. This portal is the only approved method to securely exchange data files between hospitals and the EOHHS contractor (Telligen).

The MassQEX Portal address is https://massqex-portal.telligen.com/massqex/. The MassQEX portal is divided into three sections: portal system requirements for submission, reports repository and user accounts that are described below. All aspects of the MassQEX web portal, including set up and configuration of system requirements are managed by the EOHHS Contractor.

A. 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) **System Requirements***:* The portal system requirements are as follows*:*
   - Minimum of 1 GHz processor or better with a minimum of 125MB free disk space
   - Windows 7 or higher
   - 1 GB of RAM or higher
   - High speed internet connect of 384 Kbps or higher
   - MassQEX Portal supports the following Browsers:
     - Internet Explorer v 11 or higher
     - Chrome v 52 or higher
     - Firefox v 46 or higher
   - Browser security level of medium or lower
   - Browser Transport Layer Security (TLS) version 1.2
   - Must have adequate operating system rights to allow provider sites to properly install programs and modify/edit registry entries
   - Pop-ups allowed for URL https://massqex-portal.telligen.com/massqex/

2) **Test Data Files.** 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 this 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 servers.
   - The test environment remains open throughout the entire Acute Hospital RFA rate year to allow registered users to perform ongoing tests in preparation for subsequent submission cycles.

3) **Production Data Files.** 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.

4) **Portal Environment Maintenance**. The portal environment is periodically programmed in between submission cycles, to prepare for and support the changes in the transmittal of revised technical specifications for process measures listed in Section 2 (Table 2.1) of this EOHHS Manual.

As noted in Section 1.C of this manual various changes go into effect with each quarter reporting cycle period. Portal status updates are periodically posted on the MassQEX portal homepage to notify users of scheduled maintenance periods.

B. Data File Contents and ICD Entry Form

Hospitals must adhere to the instructions for preparing data file content and on-line ICD population data entry associated with quarter data file uploads. The data file upload and data entry procedures that apply are noted below.

1) **Technical File Upload.** 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. Each measure must be submitted in separate electronic data files using instructions provided below. The secure file transfer application allows measure files to be submitted separately or collectively as a zipped file.

2) **Data Transmittal Process.** Hospitals must submit all required data files via the secure web portal described in Section 5 of this Manual. 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: MassQEX Electronic Data File Contents

Quality Measures	XML MassHealth Specific Measures File	Online ICD Data Entry Form
MAT-4	YES	YES
NEWB-1	YES	YES
CCM-1, 2,3	YES	YES

3) **XML File Types.** The two types of XML file layouts that apply to MassHealth quality measures quarterly reporting are listed below.

   a. XML Schema MassHealth Specific Measures **-** this XML file is required for the maternity, care coordination and newborn care measures. The file must include all measures data the hospital is eligible to report on for the required discharge data period in Section 1.C. 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.

   b. XML Schema MassHealth Data Deletion Request - to remove data files you must use the XML Schema Deletion Request File provided in Appendix of this EOHHS manual.

   c. XML Schema Version - all measures data must be submitted using the appropriate versions of the following XML schema file layouts that apply to the quarter reporting periods listed in *Section 2.D (Table 2.4) of this EOHHS Manual.*

4) **Data File Deletion Procedures.** The portal allows hospitals and/or data vendors to delete data files that have been uploaded during an active data production cycle as follows:

   a. To remove data files you must use the XML Schema MassHealth Deletion Request File. A successfully processed delete request will remove any measure level submission that corresponds to the unique patient identifier information submitted with the delete request. This will delete all matching submissions for the period at that time not just the last submission.

   b. Note that a delete request will only remove the measure data and not the historical submission information. Future data uploads are not affected by previous delete requests.

   c. 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.

5) **ICD Population 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.

   a. **Updated ICD Data Entry Form** - The ICD entry form provides fields to enter the total counts related to each measure category assignment for the aggregate Medicaid payer data as defined in Section 4.C of this EOHHS manual. The ICD population data must include total counts related to each quarterly submission cycle due for the measures being reported in the electronic data file contents, as defined in Section 5 of this manual.

   b. **ICD Data Entry Form Compliance** - 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 data entry form. Failure to enter zeros will render the hospital having missing data resulting in non-compliance reporting status.

   c. **ICD Data Entry Form Options** - The MassQEX portal will provide the option to enter ICD data for quarterly or monthly samples as illustrated in Figures 1 and 2 below.

      Figure 1 below illustrates the MassQEX ICD Quarterly Population entry form on the left hand side of the portal screen that has been properly completed in order to be in compliance with reporting requirements. The screenshot shows that for each measure

listed (CCM, MAT-4, NEWB-1) quarterly data is entered under the ICD column and under the Sample column.

Figure 1: MassQEX Portal Quarterly ICD Data Entry Form

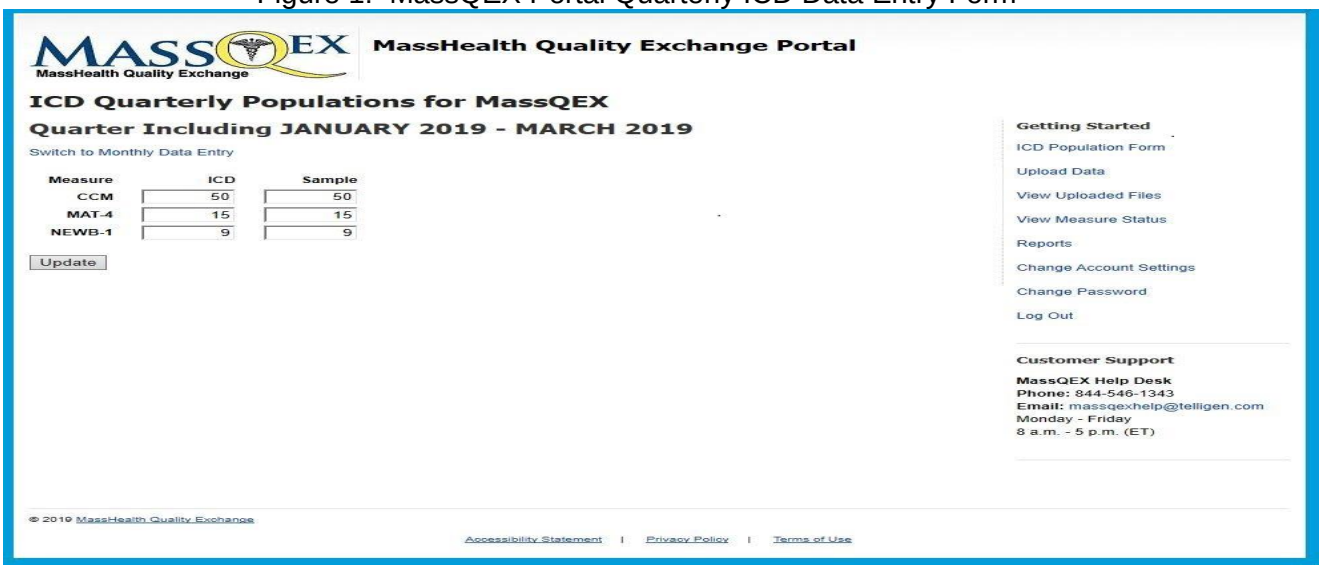
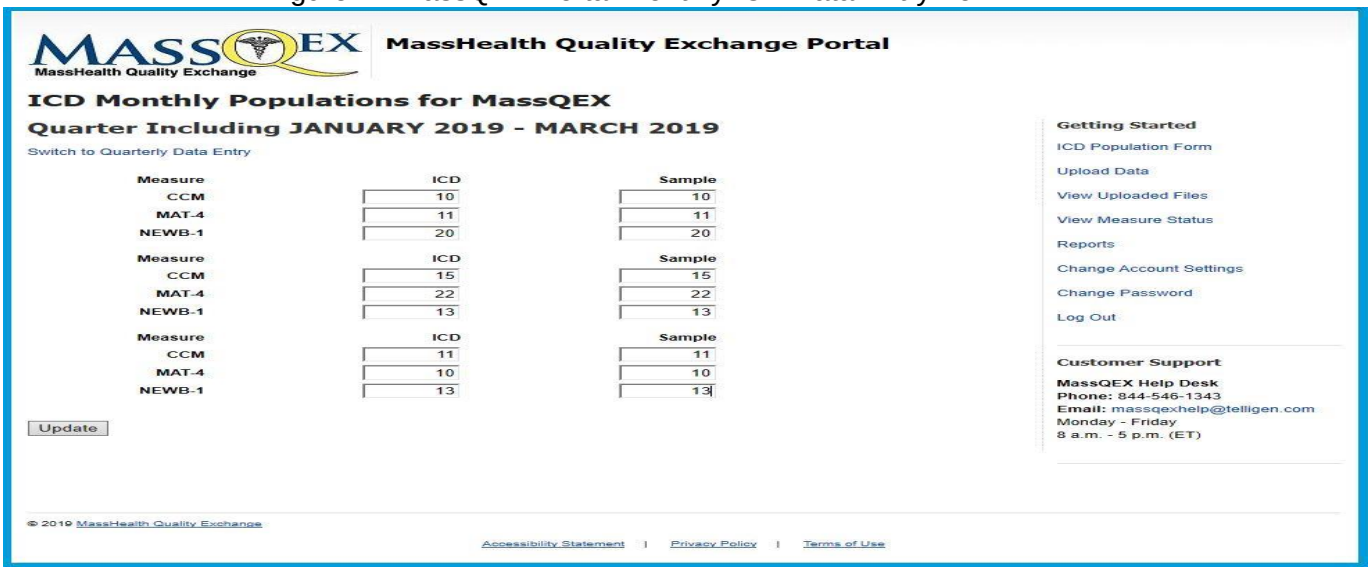


Figure 2 below illustrates the ICD Monthly Population on the left hand side of the portal screen that has been properly completed in order to be in compliance with reporting requirements. The screenshot shows each measure listed (CCM, MAT-4, NEWB-1) by each monthly period data entered under the ICD column and under the Sample column

Figure 2: MassQEX Portal Monthly ICD Data Entry Form



6) *Data Transmittal Schedule***.** All data file uploads plus on-line ICD data entry must be completed by the close of business day (5 pm eastern time) of published submission deadlines. The ICD data entry information should be submitted within fifteen (15) days prior to the close of data cycle and can be revised up until the final submission due dates noted in Section 1.C of this manual

IMPORTANT NOTE: Hospitals may not request an extension of submission deadlines or request to resubmit corrections to data files or ICD data entry after the portal has closed. See Section 5.F of this Manual for extraordinary circumstances that apply to data extension requests.

C. Portal Reports Repository

The web portal is equipped with a self-serve feature that provides users with summary information on data files uploaded to the MassQEX data warehouse. On-line self-serve reports are generated for processing of test and production level data that can be viewed and printed 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 for previously submitted data files and for both test and production submissions.

   a) 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.

   b) 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 the report.

Figure 3: Example of a MassQEX Portal Input Files Report

MassHealth Quality Exchange (MassQEX)
Input Files Report

Processed: 07/01/2019 05:06 PM (User, Test)
Provider: MassQEX
Uploader: MassQEX

FILE NAME	PROVIDER	MEASURE	DATE	PROCESSED	STATUS
MAT-4-005-Xbucket.xml	MassQEX	MAT-4 (10/01/2018-03/31/2019)	07/01/2019 05:06 PM	Yes	ERROR
ERRORS/WARNINGS: 1 [ERROR] Patient birthdate is missing or invalid Going to bucket MAT-4X					
MAT-4-019-Bbucket.xml	MassQEX	MAT-4 (10/01/2018-03/31/2019)	07/01/2019 05:06 PM	Yes	WARNINGS
WARNINGS 1 "ICD-10-CM Principal Diagnosis Code" (PRINDX) or ICD-10-CM Other Diagnosis Codes" (OTHRDX#) is in table 11.09 is invalid. Going to Bucket MAT-4B					
MAT-4-001-Ebucket.xml	MassQEX	MAT-4 (10/01/2018-03/31/2019)	07/01/2019 05:06 PM	Yes	OK

As shown in Figure 3, 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* – 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. The MassQEX portal functionality allows hospitals to run data summary profile reports on demand. The portal generates two types of self-serve reports as described below.

a. **Measure Counts Report.** This report *summarizes aggregate information on the individual files uploaded to display overall counts of cases that met the numerator and denominator specifications for each measure as well as cases excluded from the denominator*. Below is an example of the report generated from the portal and how to read this report.

Figure 4: MassQEX Portal Measure Counts Report (Example)

MassHealth Quality Exchange

MassHealth Quality Index (MassQEX)
Measure Counts

Medicaid Provider 12345ZYXWV MassQEX

CALENDAR YEAR AND QUARTER	MEASURE NAME	POPULATION	NUMERATOR	DENOMINATOR	EXCLUDED
CY 2019, Q1	CCM 1	55	53	54	1
	CCM 2	55	54	54	1
	CCM 3	55	51	54	1
	MAT 4	8	4	6	2
	NEWB 1	7	7	7	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.

rpt-measure_counts-1449743-1506331-20190704141550

Page 1 of 1 7/4/2019 2:15:51 PM

As shown in Figure 4, the '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

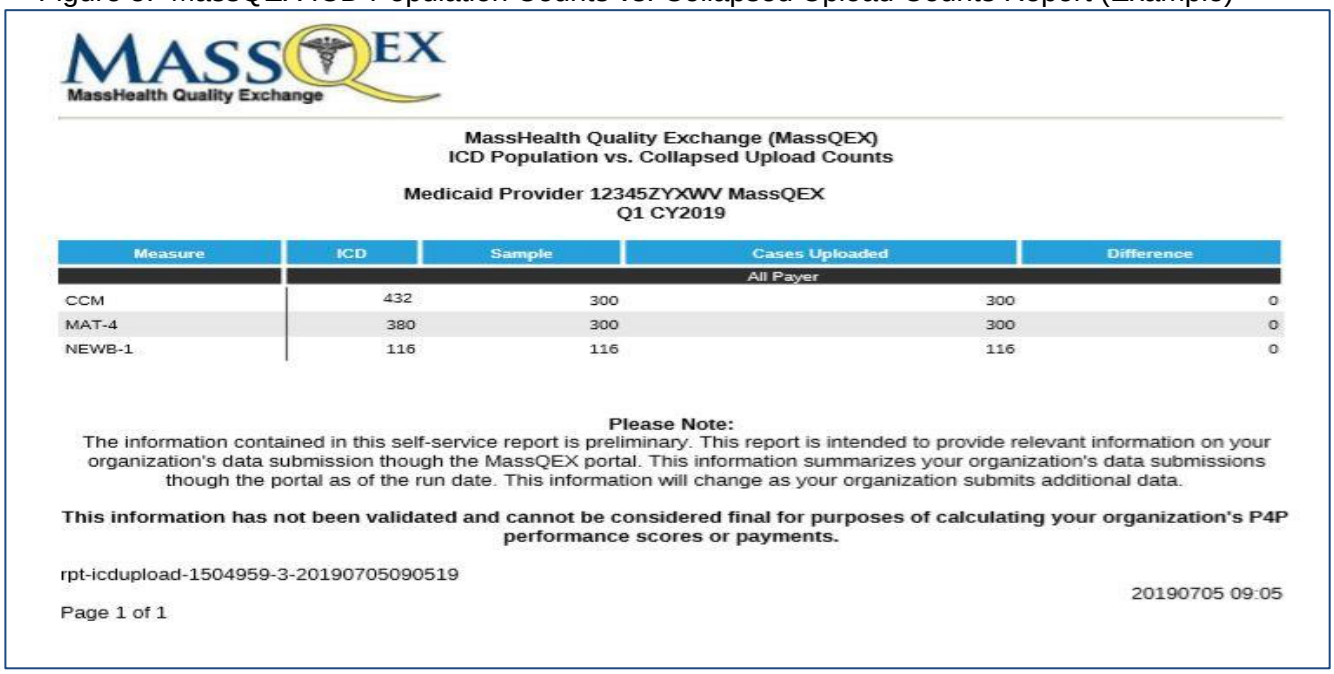
- Numerator - the counts that met the criteria for inclusion in the measure numerator
- Denominator - the counts that met the criteria for inclusion in the measure denominator
- Excluded – the number of cases that did not meet the criteria for denominator.

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 Medicaid payer population.

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 Population vs. Collapsed Upload Counts Report.** This report *aggregates* and summarizes information on the ICD population data entered by the hospital ,with the actual uploaded cases that have been processed at the time of the submission cycle. Below is an example of the report and how to read this report.

Figure 5: MassQEX ICD Population Counts vs. Collapsed Upload Counts Report (Example)



MassHealth Quality Exchange

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

Medicaid Provider 12345ZYXWV MassQEX
Q1 CY2019

Measure	ICD	Sample	Cases Uploaded	Difference
	All Payer			
CCM	432	300	300	0
MAT-4	380	300	300	0
NEWB-1	116	116	116	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.

rpt-icdupload-1504959-3-20190705090519

20190705 09:05

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As shown in Figure 5, the 'ICD Population vs. Collapsed Upload Counts Report' displays 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
- ICD – the hospital reported count case as defined in Section 4 and 5 of this manual.
- Sample – the hospital reported count of cases sampled as defined in Section 4 above.
- Cases Uploaded - actual cases received and processed 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 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 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 self-serve 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 portal self-serve reports feature described above were not available prior to calendar year RY2010 reporting data.

D. User Accounts Registration

The EOHHS Contractor (Telligen) *will establish and manage all aspects of MassQEX portal user accounts system for hospitals participating in the MassHealth Hospital P4P Program in accordance with EOHHS Medicaid Acute Hospital RFA contract requirements*. *This includes validating each user registration form and monitoring MassQEX user activity*. Below are steps to register a new user.

1) **Opening an Account:** All hospitals must set up user accounts to access the secure web portal using the on-line registration form. Each hospital must identify the individual users that will be authorized to submit and conduct all data transactions on the hospital's behalf. The users can be individuals from hospital staff and/or hospital third-party vendors.

2) **Account Limits:** EOHHS sets a maximum limit of user accounts the hospital can identify as the registered user. *Beginning with Acute RFA20 contract, the hospital can identify a maximum of five (5) accounts for hospital staff users and a maximum of three (3) accounts for hospital third-party data vendors*.

All designated individuals must be identified on the MassHealth Hospital Quality Contact Form submitted to EOHHS each rate year. *Newly identified users must complete user registration requirements described below to gain access to the secure web portal.*

3) **Completing Registration Form***:* The new user must complete a registration form, then sign and date it in the presence of a Notary Public, who will issue the Notary's stamp and seal on page 1 of the form. The hospital chief executive officer (CEO) must sign the notarized form to authorize the individual designated to be the registered user for that hospital site.

Note to Vendors: A vendor user registers only once and receives one account that allows access to all hospitals represented by the vendor. A copy of each vendor user registration form (notarized page 1 and page 2) must be submitted to the hospital CEO for signature for each hospital represented.

4) **Mailing User Registration Forms.** Originals of the completed registration forms must be mailed to the EOHHS Contractor, to address listed below, for the account to be activated.

Telligen, Inc.
Attention: MassHealth Quality Exchange (MassQEX)
800 South Street (Suite 170)
Waltham, MA 02453

5) **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.

6) **Maintaining User Accounts**: Hospitals designate authorized Users to transmit data, which contains protected health information, in accordance with HIPAA standards. All hospitals are required to actively monitor and maintain their secure portal User accounts during each Acute RFA contract rate year, including when any changes to hospital staff or vendors occur. *The EOHHS Contractor monitors all user account activity as follows:*

a) *Inactive Accountss: defined as a User account that has not been logged into by the hospital or data vendor registered user over an extended period of time (90 days). The MassQEX portal sends weekly email the month prior to the 90 day expiration date stating that no user activity has been detected for 60 days and that the account must be logged into within 30 days or it will be closed. Upon the 90 day deadline, if no activity is detected account will be closed. The user must restart a new MassQEX registration using instructions provided above.*

b) *Disabled Accounts: Defined as a User account that is locked during attempted log-in with an incorrect password. An email is generated from the MassQEX Portal to the User alerting them the account has been disabled, The registered User must contact the MassQEX Helpdesk to reset the account.*

c) *Unusual Account Activity: defined as an account where the hospital CEO authorized users have gained access of their user ID and password to any individuals other than the one authorized by the hospital CEO in their registration form. This type of activity is immediately reported to EOHHS and the account is automatically disabled and suspended.*

E. Customer Support

EOHHS MassHealth provides technical support for all registered portal users. The EOHHS Contractor staff is available to work with both the hospital staff and third-party data vendor to assist in the implementation of technical measures data collection and transmittal procedures outlined in this manual.

1) **MassQEX Helpdesk** – the customer support contact information is listed below.

- **Phone**: The toll free number is (844) 546-1343. This line is answered by a live person that will request a description of inquiry and initiate a help desk ticket. The inquiry is triaged to a clinical or technical staff. A response is sent via email or a call is returned

- **Email:** Massqexhelp@telligen.com. All inquiries will initiate a help desk ticket.

- **Business Hours**: 8:00 a.m. – 5:00 p.m. (Eastern Time). Business hours are Monday to Friday. Inquiries are addressed within one business day.

2) **MassQEX List-Serve.** MassQEX operates 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 updates on portal system functionality enhancements, updates to measure specifications, status of portal production timelines, posting of updated content in secure bulletins and other program related activities. Individuals not authorized as portal users may also register for the list-serve by sending a request to the MassQEX Help Desk at massqexhelp@telligen.com

3) **Hospital Third-party Data Vendors.** The EOHHS Acute Hospital RFA contract includes a provision for hospitals that use 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 Medicaid 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. Section 5 of this EOHHS manual contains instruction that requires collaboration among the hospital and their data vendors to successfully meet data submission requirements and 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 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 self-serve reports generated by the portal.

F. Data Extension Procedures

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.

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

2) **Provision for Granting Data Extensions**. 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 definitions:

   a. *Extraordinary Circumstances*: 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 hospitals that may be affected by extraordinary events across a specific region or locale.

b. *Unusual Circumstances*: 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.).

c. *Non-Applicable Circumstances*. 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 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).

3) **Process to Request a Data Extension**. EOHHS requires hospitals adhere to procedures and instructions for requesting a data reporting extension when the hospital experiences unusual or extraordinary circumstances during the Acute RFA rate year contract cycle. Each hospital must adhere to the following instructions to request a data extension:

a) **MassHealth Data Extension Request Form (MHDER):** The hospital must submit a formal written request using the MHDER Form applicable to current rate year data requirement. The required information must include:
- The type of data request and quarter period impacted;
- Detail on the type of data request, reason for request, and describe details on specific event that lead to requesting an extension;
- Attach supporting documentation or information for EOHHS agency consideration; and;
- Include the hospital chief executive officer (CEO) signature
- IMPORTANT – the MHDER form must be requested by sending an email to EOHHS at Masshealthhospitalquality@state.ma.us.

b) **Submitting Your Request:** Hospitals must submit a packet of information that must include the typed MHDER form signed by the hospital CEO with all documentation, typed cover letter on hospital stationery identifying enclosed content; that is mailed to: EOHHS MassHealth Acute Hospital P4P Program, 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 faxing materials to MassHealth at (617) 847-3476 or to Masshealthhospitalquality@state.ma.us. Contact MassHealth at (617) 847-6528 if you need instruction on how to complete the request.

c) **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 provide the hospital CEO and designated quality contact with final written decision regarding the hospital's data extension request.

Section 6. MassQEX 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 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 portal, 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 methods for the clinical process measures in Table 2.1 of this EOHHS manual occurs on a random sampling of charts selected from the hospitals reported data files uploaded to the portal.

4) **Chart Sampling:**
   a. *Effective RY2020, a total of twelve (12) records per year will be required on a full calendar year of reported data files for validation purposes.*

   b. *A random sample of four (4) charts will be identified only for the first three quarters on of a calendar year data files. No charts are requested on the fourth quarter data files submitted to the portal*.

5) **Chart Request Schedule:**
   a. Hospitals will be notified by the EOHHS Contractor of cases selected for chart validation within fourteen (14) calendar days following each data file submission deadline.

   b. Hospitals must submit paper copies of all medical records requested within **twenty one (21**) **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.

   c. Copies of all paper medical records must include information on all three data elements of Race and Hispanic Indicator for validation purposes. Hospitals are responsible for communicating this data submission requirement to their medical records department staff.

   d. Copies of records not received from hospitals within **twenty one (21) calendar** days of the EOHHS Contractor request will be deemed as failing validation. The Acute 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 list of the scored and non-scored data elements is summarized in Table 6.1 below.

Table 6.1: Summary of Data Element Scoring Categories

Scored Data Elements	Non-Scored Data Elements
NEWB-1 Measure: Admission to the NICU, Discharge Disposition, Exclusive Breast Milk Feeding, Term Newborn, Race, Hispanic Indicator *MAT-4 Measure: Gestational Age, Previous Live Births, Race, Hispanic Indicator* *CCM Measures: Discharge Disposition, Reconciled Medication List, Transition Record, Advance Care Plan, Contact Information 24 hours/ 7 days, Contract Information for Studies Pending, Current Medication List, Discharge Diagnosis, Medical Procedures and Tests, Patient Instructions, Plan for Follow-up Care, Primary Physician/ Healthcare Professional for Follow-up Care, Reason for Admission, Studies Pending at Discharge, Transmission Date, Discharge Date, Race, Hispanic Indicator*	• Admission Date • Admission Time • Birth date • Discharge Date (*scored for CCM-3 only*) • Discharge Disposition (*scored for NEWB-1 and CCM only)* • Episode of Care • First Name • Hospital Patient ID # • ICD-CM Diagnosis Codes • ICD-PCS Procedure Codes • Last Name • Member ID Number • Payer Source • Provider ID • Provider Name • Sex

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

a) Administrative Data Elements:
   i. Race and Hispanic Indicator 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 and Hispanic Indicator are considered invalid for data validation purposes.

   iii. Copies of all paper medical records must include information on two data elements of Race and Hispanic Indicator 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 and Hispanic Indicator 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 Section 3 of this Manual. The list of clinical data elements that apply to validation scoring for MassHealth process measures are *listed on the Table 6.1 and further defined in the Data Dictionary* (Appendix A-6) in this EOHHS manual.

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

Mismatch Reason	Description
Abstractor answer not found	EOHHS contractor was unable to locate the hospital's answer
Abstractor missed information	Selected when the information is present in the medical record, in the approved locations, but was not abstracted
Acceptable match/mismatch	To be used for unique scenario(s) only
Data entry error	Selected when it is clear a data entry error was made
Not following abstraction guidelines	Selected when the data abstraction guidelines published in the appropriate version of the EOHHS Technical Specification Manual have not been followed
Parent element mismatch (child element)	Selected when the parent variables are missed, therefore; the child variables were disabled or not answered
Poor record copy	Selected when the medical record copy received is of poor density (too light or too dark), the copy is distorted, or part of the information is cut off of the page
Unclear element definition	Selected when clarifications are implemented and the EOHHS contractor is not sure if the information was shared with the hospital
Invalid record sent	Selected when the record sent by the hospital is invalid (incorrect)
Record not received	Selected when requested records are not received by the EOHHS contractor within the required timeframe

4) **Calculating Overall Validation Rate.** The overall rate is the proportion of scored items in agreement divided by the total scored items rated. The year-end overall agreement rate is the aggregate of the validation rates for the applicable quarters of data validated per Section 6.A of this EOHHS Manual. Confidence intervals are calculated to determine appropriate range for estimating if a reliability threshold has been met. Overall agreement rates are computed as follows:

a) Hospitals achieving an overall agreement rate ≥ 80% for chart data submitted, as defined in Section 6.A.4 above, will be considered to have "passed" validation. Hospitals with overall agreement rates that fall below 80% will be considered to have "failed" validation.

b) EOHHS will adjust the overall validation results when it has been determined that the hospital has not been complaint with data completeness requirements, per Section 2.D of this manual, applicable to calendar year reporting requirements.

c) When a hospital does not submit proper documentation for chart validation purposes during the calendar year, then the overall agreement rate will not be computed. This determination is based on insufficient information to conclude the data accuracy standard as being met for calendar year reporting.

5) **Validation Results Reports.** *In RY20,* Hospitals will receive validation reports that provide information on three quarters of results *(Q1,Q2 and Q3)* case detail results at the data element level, and comments to improve reliability of measures reporting as appropriate.

C. Requesting Re-Evaluation of 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 results. Hospitals can request a re-evaluation of validation results for any quarter of chart data submitted, as defined in Section 6.A.4 above, 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 for Re-evaluation:

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 hospital's request.

3) Submission Format:

a. Complete MassHealth Form (DREV). Hospitals must complete the **"**MassHealth Hospital Data Validation Re-evaluation Request Form" that list the specific data element mismatches and basis for re-evaluation.

b. To obtain a copy of this form contact the MassQEX at massqexhelp@telligen.com. Completed forms can be faxed to the EOHHS Contractor listed below:

Telligen, Inc.
Attention: MassHealth Quality Exchange (MassQEX)
800 South Street (Suite 170)
Waltham, MA 02453
FAX: (844) 546-1344

4) **Final Re-Evaluation Results**. The hospital will receive a written response indicating the following:

a. Whether any of the validation results have been adjusted;
b. Whether the overall agreement rate remains below the required threshold (≥ 80%),
c. Give detail on data element mismatches that remain and comments to improve data reliability as appropriate.

Please contact the MassQEX Help Desk at massqexhelp@telligen.com for questions on how to complete the form and submit your request.

Section 7. MassHealth PSI-90 Measure Specifications

This section outlines the EOHHS data collection and calculations methods that apply to the PSI-90 composite measure required by the MassHealth Acute Hospital P4P Program.

A. Measure Description

Rationale: The Patient Safety Indicators (PSIs) are a set of measures which screen for potential problems that patients experience as a result of exposure to healthcare system (AHRQ, 2002). The PSI's can be used to assess the incidence of potentially avoidable complications and iatrogenic events linked to in-hospital patient surgeries, medical procedures, and childbirth. PSI's serve as a starting point for further analysis to investigate errors caused by faulty systems that lead people to make a mistake or fail to prevent them as well as identify opportunities to reduce preventable errors through system and process changes (Corrigan and Donaldson 2000; McDonald, Romano and Geppert, 2002, Geppert, J., Rhoda, D., Morara, M. 2013).

Measure Name: Patient Safety and Adverse Events Composite includes the following indicators:

- PSI-03 Pressure Ulcer Rate
- PSI-06 Iatrogenic Pneumothorax Rate
- PSI-08 In-Hospital Fall with Hip Fracture Rate
- PSI-09 Postoperative Hemorrhage and Hematoma Rate
- PSI-10 Postoperative Acute Kidney Injury Rate
- PSI-11 Postoperative Respiratory Failure Rate
- PSI-12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate
- PSI 13 Postoperative Sepsis Rate
- PSI 14 Postoperative Wound Dehiscence Rate
- PSI 15 Unrecognized Abdominopelvic Accidental Puncture or Laceration Rate

Type of Measure: Outcome

Risk Adjustment: Yes

Results Reported As: A composite ratio represents a weighted average of all PSI's listed above.

Improvement Noted As: Lower ratio. However a lower ratio does not indicate the hospital is performing as expected.

Measure Interpretation: Interpretation of a composite should be done is in comparison to other data (e.g.: individual PSI observed rates) to identify areas for targeted quality improvement.

Select References

- Kohn L, Corrigan J, Donaldson M, Editors (2000), To Err Is Human: Building a Safer Health System. Institute of Medicine Committee on Quality of Health Care in America. Washington, DC, National Academy Press.
- McDonald K, Romano P, Geppert J, et al., Measures of Patient Safety Based on Hospital Administrative Data: Patient Safety Indicators. Technical Review 5, Stanford Evidence-based Practice Center under Contract No. 290-97-0013), AHRQ Publication No. 02-0038, Rockville, MD, August 2002
- Geppert, J., Rhoda, D., Morara, M., Quality Indicator Empirical Methods (Revised by Battelle, under Contract No. HHSA290201200001C), Agency for Healthcare Research and Quality. Rockville, MD., September 2013
- Catherine L. Snow, C., Holtzman, L., Waters, H., et al., Accuracy of Coding in the Hospital-Acquired Conditions: Present on Admission Program Final Report, June 30, 2012, RTI International, Research Triangle Park, North Carolina, RTI Project Number 0209853.230.001.085.

B. Claims Data Extraction Criteria

The hospital's PSI-90 measure will identify patient Medicaid claims using the criteria outlined below.

1. **Medicaid Claims File Definitions**

a) **Medicaid Hospital Stay File -** is the standardized extract file gathered from Medicaid Management Information System (MMIS) claims plus Encounter claims data that is transferred to the EOHHS Contractor for measures analysis. This file contains clinical and administrative data on all patient hospitalizations for dates of service for the measurement period noted below.

b) **Measure Analysis Working File -** is the hospital-level standardized file extract that reflects a snapshot of Medicaid final action paid claims (adjudicated) taken 6 months following the last day of discharges for applicable measurement period used to compute the PSI-90 measure.

c) **Measurement Data Period** - the PSI-90 measure uses 24 months of data, whenever feasible, to generate the most reliable results. *Refer to Section 1.D of this EOHHS Manual for the 24 month data period that apply to measures analysis.*

d) **Claims Run-Out Period -** is the six (6) month period after the end of measurement period to ensure paid claims relevant to analysis period are entered and processed by the claims data warehouse (e.g.: period ending September 30, 2017 has run-out period of April 2018).

e) **Claims Paid Status** - the measure working file includes paid claims defined as follows:

- MMIS Claims Data - hospital discharges covered by MassHealth Fee-for-Service, Primary Care ACO and PCC Plans where MassHealth is the primary or only payment source.
- Encounter Claims Data - hospital discharges covered by ACO and Managed Care insurance plans where MassHealth is the primary or only payment source.
- Excluded Claims **-** hospital discharges where Medicaid is a secondary or tertiary payment (third party liability, dual eligible, other insurance carrier) or denied claims paid status.

f) **Clinical and Administrative Data Fields**

- International Classification of Diseases Codes - includes the ICD Diagnosis and ICD Procedure codes applicable to PSI-90 measure as defined in the AHRQ measure specification manual.
- Diagnosis Related Group Codes - includes the Medicare Severity Diagnosis Related Group (MS-DRG) codes applicable to PSI-90 measure as defined in the AHRQ measure specification manual.
- Present on Admission (POA) – this code is used to determine whether the diagnosis was present at time of admission or occurred during the hospital stay. The principal diagnosis is always assumed to be present on admission regardless of the coding of the POA data element in the principal field. Secondary diagnosis codes are considered present on admission if it is coded with a Y, W, or 1. The secondary diagnosis code is considered not present on admission if it is coded with N, U or 0.
- Age - includes patients greater than 18 years of age that meet claim paid status criteria.
- Other Administrative Data Content*: See Appendix A-8 of this EOHHS manual for additional data variables required to identify eligible discharges for the measure data period.*

C. Claims Data Accuracy and Completeness

Each hospital's PSI-90 measure working file must meet data accuracy and completeness requirements in order to generate the most reliable results.

1) **Accurate Data.** The accuracy of hospital claims coding and billing practices can affect measure results. Accurate data is defined as patient-level claims information that is coded correctly to accurately reflect the clinical condition and treatment that occurred during the hospitalization. Variation may exist in hospital assignment of clinical and administrative billing codes required for measure calculation. Hospital documentation and coding practices can affect accuracy of results and require their evaluation to ensure consistency over time. Hospitals should review their claims on a regular basis.

2) **Missing and Invalid Data.** Missing data refers to claims data fields required by the AHRQ software that have no *data values (blank) present in claims extract* whereas, invalid data refers to values that are "incorrect" or fall "outside the range of allowable values" as defined by the AHRQ measure technical specifications.

3) Reducing missing and invalid data is critical to minimizing errors for a measure result because these data may not accurately reflect the observed rate for the patient population. Valid data is required prior to setting performance benchmark thresholds or computing hospital-level performance scores.

c) **Data File Exclusions.** The hospital's measure working analysis file will exclude hospitalization discharges that contain incomplete, partial, missing or invalid entries in the claims clinical or administrative data fields that are required by the AHRQ software. Missing or invalid codes in clinical or administrative claims data fields will either default to 'other' codes or yield an exclusion.

Hospital discharge records that do not contain the data elements required by the applicable version of the AHRQ Statistical Software will be excluded from measure analysis file. Refer to Appendix A-8 of this EOHHS Manual for exclusions that apply to the hospital measure analysis file.

D. Measure Calculation Method

The PSI-90 composite measure is computed using the applicable version of the AHRQ technical specifications manual and software tools as described below.

1) **Case Minimum Criteria.** The hospital claims-based measure data file must have at least three cases (n=3) for any one of the underlying patient safety indicators for the measurement period noted in Section 1.D, to generate reliable results for comparison purposes.

2) **Observed Rate***:* the observed rate for each PSI indicator is the total number of discharge records where patient experienced the adverse event outcome (numerator) divided by the total number of discharge records at risk for the (denominator) that is computed using the following formula:

Observed Rate = Total Event Outcomes/Total Eligible Population at Risk

The observed rate is the raw rate at which the outcome of interest occurred in the hospital. The observed rate is limited for comparison across hospitals because patient case mix will vary between hospitals. The observed rate can be used to identify cases for further follow up or quality improvement areas that may be of concern.

3) **Expected Rate:** the expected rate for each PSI indicator is total number of discharge records where event is expected (numerator) divided by the total number of eligible discharge records at risk (denominator) that is computed using the following formula:

Expected Rate = Total Expected Events/ Total Eligible Population at Risk

The expected rate is the rate the hospital would have if it's patients experienced the same level of risk exhibited in the reference population.

4) **Risk Adjusted Rate (RAR):** the risk-adjusted rate for each PSI indicator is computed using indirect standardization as the observed rate divided by the expected rate with the result multiplied by the reference population rate using the following formula:

Risk Adjusted Rate = (Observed Rate/Expected Rate) x Reference Population Rate

The risk-adjusted rate is the estimate of your hospital's performance on each PSI if the hospital had the average patient case mix calculated from the reference population data. Each PSI is scaled by the reference population rate so that it reflects the degree of variation from the overall average.

5) **Smoothed Rate:** is a weighted average of the hospital's risk-adjusted rate (RAR) and the reference population rate using the reliability weight. The smoothed rate for each PSI indicator is computed using the following formula:

Smoothed Rate = RAR x Reliability weight+ ((Reference Population Rate x (1 – reliability weight)

The smoothed rate is the hospital's expected performance with a larger population of patients. Rates are smoothed to reflect the fact that indicators for small hospitals are measured less accurately than for larger hospitals. The statistical concept of reliability is used to evaluate the impact of case size on a particular measure.

The reliability weight is derived from the signal-to-noise variance, where the noise variance is calculated for each hospital based on their data and the signal to noise variance is calculated from the reference population. The reliability weight is a value which can vary from 0 to 1. Because smaller hospitals can have less reliable rates than larger hospitals, the weight given to their risk-adjusted rate is smaller (e.g.: weight is closer to zero) and the weight given to the national rate is larger (e.g.: weight closer to 1).

6) **Composite Index Value:** the composite is constructed using a series of steps that include computing the risk-adjusted rate, scaling the risk-adjusted rate using the reference population, computing the reliability-adjusted rates, and applying the component indicator weights.

The composite index is computed using the following formula:

Composite Index Value = Indicator1 RAR x Weight1] + [Indicator2 RAR x Weight2] +…+….
+… [IndicatorN RAR x WeightN]

The final composite index formula reflects the weighted average of all PSI component indicators (IndicatorN) using the selected weights (WeightN), scaled risk-adjusted rates (RAR) and reliability-adjusted indicators.

7) **Component Indicator Weights:** the composite is the weighted average of the scaled and reliability-adjusted rates for each component indicator (indirect standardization of the smoothed rates). *The AHRQ software applies weights to each of the composite indicators based on both volume and harm associated with adverse events*.

8) **Reference Population:** each individual PSI measure rate and overall composite index value is computed using the *reference population as defined in the applicable version of AHRQ quality indicators software as the national "Hospital Cost and Utilization Project" (HCUP).*

9) **AHRQ Technical Specifications** The table below lists measure specification and technical resources that will be used by MassQEX to compute PSI-90 measure results.

Table 7.1: AHRQ Technical References

AHRQ Technical Resource	Version	Notes
AHRQ QI Patient Safety Indicators 90, Technical Specifications for Patient Safety and Adverse Events Composite	(v2019) ICD-10-CM/PCS, July 2019	Includes composite weights
AHRQ Patient Safety Indicators Appendices	(v2019) ICD-10-CM/PCS, July 2019	Appendix A to M list detail ICD-10-CM/PCS and MS-DRG codes
AHRQ Quality Indicators SAS Software	(v2019) ICD-10-CM/PCS, July 2019	Uses up to 30 ICD-10-CM Diagnosis codes and up to 30 ICD-10-CM Procedure codes The v2019 SAS QI and WinQI software is risk adjusted using 2016 HCUP State Inpatient Databases (SID) data
Patient Safety Indicator (PSI) Parameter Estimates	(v2019) ICD-10-CM, July 2019	Includes risk adjustment
Quality Indicator User Guide: Patient Safety Indicators (PSI) Composite Measures	Version 2019	PSI-90 composite development rationale

For more information on AHRQ technical specifications is available on their website at https://www.qualityindicators.ahrq.gov/Software/Default.aspx.

For additional information on the PSI-90 composite measure report content and how to interpret your results refer to the Appendix A-9: MassQEX Reports User Guide in this EOHHS manual.

Section 8. National Healthcare-Associated Infection Measures

This section outlines the EOHHS data collection and calculation guidelines that apply to nationally reported healthcare-associated infection measures required by the MassHealth Acute Hospital P4P Program.

A. Measure Description

Rationale: Healthcare-Associated Infections (HAIs) are among the leading causes of death in the United States that put the patient at risk, increase the days of hospitalization required for patients and adds to healthcare costs. According to the Centers for Disease Control, HAIs are among the most common complications of hospital care affecting 1 of 25 hospitalized patients that are largely preventable. These infections can often be prevented when healthcare facilities follow evidence-based guidelines for delivering safe care (WHO, 2016).

Measure Name: The five Healthcare-Associated Infection (HAI) measures are as follows:

- Central Line-Associated Blood Stream Infections (CLABSI)
- Catheter-Associated Urinary Tract Infection (CAUTI)
- Methicillin Resistant Staph Aureus bacteremia (MRSA)
- Clostridium Difficile Infection (CDI)
- Surgical Site Infections for colon and abdominal hysterectomy (SSI's)

Type of Measure: Outcome

Risk Adjustment: Yes**.**

Results Reported As: Standardized Infection Ratio (SIR). The SIR result adjusts for various facility and/or patient-level factors that contribute to healthcare-associated risk within the acute care facility.

Improvement Noted As: Lower SIR values correspond to higher quality.

Measure Interpretation: SIR results are interpreted based on 2015 national baseline population data. If the SIR is $\geq$ 1.0 then more HAIs were observed than predicted. If the SIR is < 1.0, then fewer HAIs were observed than predicted. If the SIR is equal to 1.0 then the same number of HAIs were observed as predicted.

National Data Source: The Centers for Disease Control and Prevention (CDC) collects healthcare-associated infection data via the National Healthcare Safety Network (NHSN) registry surveillance system. Acute hospitals report each HAI data from patient care locations as mapped by NHSN below:

Metric acronym	NHSN Ward Locations
CLABSI	All applicable Adult, Pediatric and neonatal intensive care units (ICUs); and Adult & Pediatric Medical, Surgical, and Medical/Surgical ward locations
CAUTI	Adult and pediatric Intensive care units (ICUs) only; and Medical, Surgical, and Medical/Surgical ward locations
MRSA	Based on Facility-wide level surveillance
CDI	Based on Facility-wide level surveillance
SSI	None designated

Refer to the NHSN Patient Safety Components Manual" (January 2019) for detail on mapped locations and infections reporting protocols at https://www.cdc.gov/nhsn/pdfs/pscmanual/pcsmanual_current.pdf.

B. MassHealth Data Collection Procedures

This section describes procedures that apply to MassHealth collection of national healthcare-associated infection data for hospitals contracted under the Medicaid Acute Hospital RFA.

1) **MassHealth NHSN Group.** EOHHS has arranged with the Centers for Disease Control and Prevention (CDC) to establish a user group under the National Healthcare Safety Network (NHSN) registry system as a mechanism to facilitate exchange of Massachusetts acute hospital HAI data reported to NHSN.

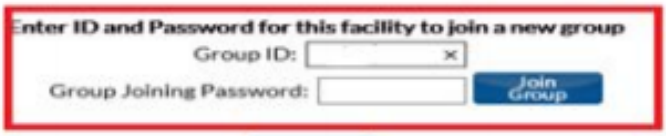
2) **MassHealth NHSN Group Administrator.** EOHHS has designated the MassQEX vendor (Telligen, Inc.) as the MassHealth NHSN "Group Administrator" to manage all aspects of data exchange and analysis of HAI measures on behalf for EOHHS MassHealth Hospital P4P Program. The EOHHS designated "MassHealth Group Administrator" is required to complete all CDC training and security clearance procedures prior to gaining access to NHSN system.

3) **MassHealth NHSN Group Enrollment.** For EOHHS to get access to Massachusetts hospital infections data reported to NHSN, each acute hospital facility must confer rights to EOHHS by joining the MassHealth NHSN Group using the steps described below.

- **Step 1:** The **"**MassHealth NHSN Group Administrator" will send an email to each Hospital Key Quality Contact that is identified from the most current EOHHS Acute Hospital P4P Program database. The email will contain enrollment information that includes a five digit group identification number and the specific MassHealth NHSN Group joining password.

- **Step 2:** The Hospital Key Quality Contact must coordinate the MassHealth NHSN Group enrollment process by providing their "**Hospital's NHSN Facility Administrator**" the joining information from the MassQEX invitation email. Only the current Hospital NHSN Facility Administrator has authority from NHSN to join the MassHealth NHSN Group.

- **Step 3:** The **"Hospital's NHSN Facility Administrator** " must select "Group" and then "Join" on the NHSN navigation bar shown below.



- **Step 4:** Immediately after joining the MassHealth NHSN Group, the Hospital's NHSN Facility Administrator will be directed to a screen listing the data EOHHS is requesting access to for each of the infections listed in Section 8.A above. **Note** that a hospital joining the MassHealth NHSN Group does not have access to any data from other facilities.

- **Step 5:** The Hospital's NHSN Facility Administrator then **REVIEWS** and **ACCEPTS** the Data Rights Template. When the data rights template is accepted, data sharing feature is activated and the facility is added to the MassHealth NHSN Group. This step completes the process of enrollment. For detail on NHSN protocol for joining a group and accepting the confer rights go to https://www.cdc.gov/nhsn/pdfs/groups-startup/JoinGroup-current.pdf.

3) **Hospital Enrollment Compliance:** The MassHealth Group Administrator monitors enrollment via the NHSN generated "*Rights Acceptance Report*" to ensure hospitals meet enrollment deadline. EOHHS is notified of Hospitals that have not complied with Group enrollment instructions.

C. Measure Data Accuracy and Completeness

The MassHealth procedures to ensure data accuracy and completeness of national registry reported healthcare associated infection (HAI) measures data are outlined below.

1) **Technical Reporting:** *Hospitals are expected to comply with NHSN technical collection guidelines and reporting protocols, including review and resolve any NHSN submission warnings to ensure accurate and complete data.*

2) **Accurate Data***: is defined as data collected or abstracted from record that meet the specific inclusion criteria in accordance with NHSN and CMS guidelines. MassQEX will review each hospital's "NHSN Participation Alerts" for status checks of each HAI measure period to ensure accurate and complete data is in accordance with NHSN protocols.*

   NOTE: Inaccurate data that are a result of the hospital's NHSN submission errors is not considered a reason for requesting a recalculation of SIR results after the defined dataset used for the MassQEX report has been extracted. EOHHS accepts the hospital's SIR result as accurate based on the dataset that was accessed and extracted by the MassQEX vendor at the freeze date as noted in Section 8.B.3 above. EOHHS will not consider data to be "inaccurate" because a hospital did not make necessary corrections to their HAI data prior to the MassQEX freeze date stamp. Refer to CMS guidance for NHSN reporting accuracy on https://www.cdc.gov/nhsn/cms/cms-reporting.html.

3) **Missing or Invalid Data***: Missing data refers to data fields required by NHSN that have no values (blank) for submitted data and invalid data refers to data values that are outside range of allowable values defined by NHSN.*

   MassQEX will review each hospital's NHSN Monthly Report Plan which provides the number of months each facility submitted and adherence to NHSN warnings associated with each HAI measure period calculated.

4) **Data Completeness Assessment**

   i. **NHSN completeness met:** *the hospital must meet the accurate data criteria described above and has sufficient data. NHSN requires hospitals have sufficient data, defined as at least 12 month data, for the predicted infection SIR (SIR > 1.0 or SIR <1.0) to be computed*.

   ii. **MassHealth completeness met:** *the hospital's adherence to NHSN data completeness criteria is reviewed separately but factored in when assessing data completeness for each HAI measure. MassHealth also verifies all HAI measure exemptions submitted on the "MassHealth Hospital DACA Form" against the NHSN database as follows:*

   - ***Valid Exemption** - If the Hospital MassHealth DACA entered measure exemptions for the HAI's listed & no data is available in NHSN database then HAI metrics are not computed.*
   - ***Invalid Exemption** - If hospital enters measure exemptions for the HAI's listed but HAI data is available in the NHSN database then measures will be computed.*

D. Measure Calculation Method

1) **Measurement Data Period:** EOHHS will evaluate each individual HAI measures using 24 months of data to generate the most reliable results. *Refer to Section 1.D of this EOHHS Manual for the 24 month data period that apply to RY20 HAI measures analysis.*

2) **NHSN Analysis Tools:** The MassHealth NHSN Group Administrator has access to "NHSN Analysis Reports Tool Set" as part of the CDC arrangement made with EOHHS to establish MassHeath NHSN Group. This NHSN Analysis Tool will be utilized to generate measure results by acute hospital facility for each of the HAI measures listed in Section 8.A above.

3) **MassQEX Data Extraction:** Defined datasets will be extracted for each hospital by copying and freezing the data at a specific point in time to facilitate generating hospital output reports. Once the NHSN Analysis Tool generates the data report the "date last generated" screen is updated.

4) **Standardized Infection Ratio (SIR)***:* is the result used by the NHSN to track healthcare-associated infections. The SIR is calculated for each infection measure using the formula shown below.

   Standard Infection Ratio (SIR) = Number of Observed HAI's/Number of Predicted HAI's

   - Number of Observed Infections: is the number of HAI's for a specific location/facility over a period of time (also listed as event count)

   - Number of Predicted Infections: is calculated by CDC using multivariate regression models generated from nationally aggregated data during a baseline time period.

   - Standardized Infection Ratio (SIR): represents the calculated number of Observed Infections divided by the Number of Predicted Infections.

   The SIR compares the actual number of HAIs reported to the number that would be predicted, given the standard population (i.e., NHSN 2015 baseline), and adjusting for risk factors found to be significantly associated with differences in infection incidence. The SIR is not generated in NHSN if the expected infection rate is less than 1.0.

   Refer to the "NHSN Standardized Infection Ratio: A Guide to SIR Guide (March 2019)" for more details at https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf.

   For additional information on the MassHealth HAI measure report content and how to interpret your results refer to the Appendix A-9: MassQEX Reports User Guide in this EOHHS manual.

   Please contact the MassQEX Helpdesk at massqexhelp@telligen.com if you have questions on HAI measure calculation and results.

Select References

- National Action Plan to Prevent Healthcare-Associated Infections: Road Map to Elimination (April 2013), Office of Disease Prevention and Health Promotion https://health.gov/hcq/prevent-hai-action-plan.asp.

- World Health Organization: Guidelines on core components of infection prevention and control programs at the national and acute health care facility level (2016) posted by the Center for Disease Control. Accessed August 2018 at https://www.cdc.gov/HAI/prevent/prevention.html.

- Haque, M., Sartelli, M., McKimm, J., & Abu Bakar, M. (2018). Health care-associated infections - an overview. *Infection and drug resistance*, *11*, 2321–2333. doi:10.2147/IDR.S177247

Section 9. National Hospital Patient Experience Survey Measure

This section outlines the EOHHS data collection and calculation guidelines that apply to the nationally reported hospital patient experience measures required by the MassHealth Acute Hospital P4P Program.

A. Measure Description

Rationale: Patient experience is an integral component of healthcare quality as it provides insight on various aspects of care delivery and assessing patient-centered care**.** The patient-centered experience has been linked to what patients place importance on when seeking care (timely appointments, provider communication, ease of access to information). The Hospital Consumer Assessment of Healthcare Provider and Systems (HCAHPS) adult survey was developed to evaluate aspects of patient-centered care and identifying improvement in aspects of care delivery. The use of patient experience measures with other quality measures remains an important part of evaluating the overall picture on performance (AHRQ, 2014; AHRQ 2017, AHRQ, 2018).

Measure Name: Each survey dimension combines conceptually related questions and are listed below.

Table 9.1: HCAHPS Survey Dimension Description

Survey Dimension	# of questions	General Item Description
Nurse Communication	3 items	• how well nurses explained things • nurses - courtesy & respect
Doctor Communication	3 items	• doctors explain in understandable language • doctors - courtesy & respect
Responsiveness of Hospital staff	2 items	• help getting to bathroom • help using bedpan
Communication about medicines	2 items	• explained reason for medicine • explained medicine side effect
Discharge information	2 items	• staff asked about help needed after Discharge • got written info on health/symptoms to expect
Care Transition (CTM-3)	3 items	• hospital staff took patient preference into account • understanding responsibility to manage my health • understood purpose for taking medications
Overall rating	1 item	• patients rating of the hospital

Type of Measure: Outcome

Risk Adjustment: Yes. HCAHPS data undergo patient mix adjustment and survey mode adjustment.

Results Reported as: The answer percentage of top box responses for each survey dimension.

Improvement Noted as: Increase in rate.

Measure Interpretation: Analysis of top box responses can be used to identify areas for improvement.

National Data Source: CMS requires hospitals adhere to the HCAHPS Quality Assurance Guidelines specifications, meet rules of participation, attest accuracy of data collection process, and submit quarterly data for calculations prior to posting results on Hospital Compare. For details go to https://www.hcahpsonline.org/en/quality-assurance/.

Select References

- Development of CAHPS Adult Survey (August 2014), Agency for Healthcare Research and Quality, Rockville, MD. Content last reviewed February 2019, https://www.ahrq.gov/cahps/surveys-guidance/hospital/about/dev_adult_hp_survey.html.
- Center for Medicare and Medicaid Services, CAHPS Hospital Survey Quality Assurance Guidelines (v14.0); October 2019 at https://www.hcahpsonline.org/en/quality-assurance/.

B. MassHealth Data Collection Procedures

The procedures described below apply to EOHHS collection and analysis of patient experience survey measures data required under the MassHealth Acute Hospital P4P Program.

1) **Measurement Period***: See Section 1.D. of this EOHHS Manual for the calendar year data periods that apply to RY20 HCAHPS measures collection*.

2) **MassQEX Data Extract:** The MassQEX Vendor is designated to manage all aspects of data extraction and analysis of HCAHPS measures listed in Section 8.A above, on behalf for EOHHS. The 12 month data snapshots reflect the final result data files downloaded from the CMS Hospital Compare website after the national reporting correction deadlines associated with the measurement period have passed.

3) **Hospital Compare Dataset.** The MassQEX vendor will access the Massachusetts hospital-level HCAHPS survey dimension measure data from the CMS Hospital Compare website data archives posted on: https://data.medicare.gov/data/archives/hospital-compare as follows:

- Step 1 – Download the dataset for CY18 All Hospital Revised Flat Files
- Step 2 - Download the Cancer Hospital dataset from CY18 All Hospital Revised Flat Files

C. Measure Data Accuracy and Completeness

The MassHealth procedures to ensure data accuracy and completeness of nationally reported HCAHPS survey dimension data are outlined below.

1) **Technical Reporting.** *Hospitals are expected to comply with CMS technical data collection HCAHPS quality assurance guidelines on data accuracy, including review and correct any CMS submission warnings to ensure complete and accurate data.* For more detail go to**:** https://www.hcahpsonline.org/en/quality-assurance/

2) **Data Reliability.** *MassHealth will adapt the minimum case standard used by CMS for evaluating reliable data results*:

   - *Hospital results with >100 surveys in a four-quarter period are considered reliable and will be used for assessing hospital performance.*

   - *Hospital results with < 100 surveys in a four quarter period are considered less reliable for assessing hospital performance*.

3) **Missing Data.** *Refers to no HCAHPS survey data being available for MassHealth to compute hospital measure results. Missing data may be due to measure exemption status granted for specific IPPS hospitals under the CMS Inpatient Quality Reporting Program (IQRP), or not meeting CMS reporting requirements.* Hospital Compare website displays a footnote when no survey results are available.

4) **Data Completeness Assessment*:***
   i. *CMS data completeness met - Hospitals that comply with CMS technical data collection and reporting deadline requirements will be used to establish baseline and comparison period results. Hospitals must have sufficient data, defined as at least > 100 surveys for calendar year to be posted on Hospital Compare website*

ii. *MassHealth data completeness met - the hospital's measure exemption status on the "MassHealth Hospital DACA Form" is verified against the Hospital Compare files as follows:*

a. ***Valid Exemption****: If the Hospital DACA form checked HCAHPS measure exemption and no data is available on Hospital Compare then HCAHPS survey dimension results are not computed.*

b. ***Invalid Exemption****: If hospital entered HACHPS exemption but HCAHPS data is available on Hospital Compare database the HCAHPS survey dimension results will be computed.*

D. Measure Calculation Methods

1) *Data File Preparation*. Hospital datasets extracted from Hospital Compare will undergo an additional data cleaning process in preparation for analysis. This includes adjustments within each file that does not correspond to the calendar year data periods, removal of hospitals marked with data results 'not available' or 'suppressed' as posted by CMS.

2) *Measure Rates*: MassQEX will obtain the top box responses for each of the survey dimensions listed in Table 9.2 below by accessing Hospital Compare Results.

Table 9.2: HCAHPS Survey Dimension Results

Metric ID #	Answer Percent of "Top Box Response"
HCOMP-1A-P	Patients reporting their nurses "Always" communicated well
HCOMP-2A-P	Patients reporting their doctors "Always" communicated well
HCOMP-3A-P	Patients reporting they "Always" received help as soon as they wanted
HCOMP-5A-P	Patients reporting staff "Always" explained medicines before giving it to them
HCOMP-6Y-P	Patients reporting "YES" were given info about what to do during recovery at home.
HCOMP-7SA	Patients reporting "Strongly agree" they understood their care when they left hospital.
HOSP-RTG	Patients who gave a hospital rating of 9 or 10 (highest).

For additional information on the MassHealth HCAHPS report content and how to interpret your results refer to the Appendix A-9: MassQEX Reports User Guide in this EOHHS manual.

Please contact the MassQEX at massqexhelp@telligen.com for questions on MassHealth HCAHPS measure calculation and reports.