Commonwealth of Massachusetts
Executive Office Health and Human Services

EOHHS Technical Specifications Manual for MassHealth Acute Hospital Quality Measures (Version 15.0)

Published: August 25, 2021

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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 specific measures reporting requirements, including the collection and reporting standards expected of inpatient quality measures submitted to 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 the Acute Hospital RFA contract rate year, as necessary to improve reliability and accuracy of measurement. Changes made during the rate year are provided using EOHHS Release Notes. The following resources are available to all participating hospitals and their data vendors:

1. **EOHHS Medicaid Acute Hospital Request for Application (RFA):** Contains detail on terms and conditions of quality performance requirements. To download a copy use the following Instructions:

   - Go to www.commbuys.com and press Enter. The COMMBUYS introductory screen appears.
   - *At top left of screen, type Document # in Search box: 22LCEHSACUTEHOSPITAL.*
   - *Choose "Bid Solicitations" and Click "Perform Quick Search" button.*
   - *In Results section (at bottom of page), click the link to RFA under "Bid #".*
   - *The "Bid Solicitation" screen for the Acute RFA appears.*
   - *In the "File Attachments" section, click the link to the document you want to access*.
   - From 'File Download' pop-up menu, click 'Open" to view the document
   - Save (or Save as) to download copy on your desktop.

   Additional updates to Acute RFA terms are posted throughout the rate year under special notices to hospitals on https://www.mass.gov/service-details/special-notices-for-acute-hospitals

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

3. **MassQEX Portal Homepage:** the EOHHS contractor (Telligen Inc.) manages a secure portal for the exchange of MassHealth quality measures data on the website https://www.mass.gov/service-details/massqex-portal. 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 Pay-for-Performance (P4P) Program
   100 Hancock Street 6th floor Quincy, MA. 02171
   Phone: (617) 847-6528
   Business Mailbox: Masshealthhospitalquality@mass.gov

B. Enhancements to Manual Version

This version of the EOHHS Manual contains substantive changes throughout all core sections of the document and related appendices. The changes that apply to each section of this manual version are summarized in the following table.

Table 1-1: Checklist of Changes in 15.0

Section	Core Manual	Update	Clarify	New
TOC	**Table of Contents**			
	▪ Add Appendix A-10	X		X
1	**Introduction**			
	• New COMMBUYS instruction, update Tables 1.2 to 1.5	X	X	X
2	**Data Collection Standards & Guidelines**			
	• Edit manual version instruction; Race data completeness	X	X	
	• Edit Table 2.2; Update Tables 2.4; Expand Table 2.5	X		X
3	**MassHealth Specific Measures Specifications**			
	• NEWB-1 initial patient population	X		
4	**Medicaid Sampling Specifications**	O		
5	**Data Transmittal Guidelines**			
	• Browser version requirements; revised JPEGS	X		X
	• Extraordinary circumstance Exception requirements	X	X	X
6	**Data Validation Methods**			
	• Reinstate chart quarter validation periods	X	X	
7	**MassHealth PSI-90 Measure Specifications**			
	• AHRQ software and technical manual version web links	X		
8	**National Healthcare-Associated Infection Measures**			
	• NHSN technical manual version web links	X		
9	**National Hospital Patient Experience Survey Measures**			
	• HCAHPS technical manual version web links	X		X
	Appendix Tools			
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	X		
A-5	XML Schema Data Deletion Request	O		
A-6	MassHealth Data Dictionary - see enhancement page	X		
A-7	MassHealth Measure Calculation Rules (NEWB1, MAT4, CCM)	O		
A-8	MassHealth PSI-90 Claims Extraction Rules	O		
A-9	MassQEX Reports User Guide (delayed posting)	X	X	
A-10	MassHealth Payment Report User Guide (delayed posting)	X		X

Changes on above checklist 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)
- The [O] indicates no change was made to what was published in prior version.

Information in this EOHHS manual version that substantially changed from prior version is shown in emphasis underlined font throughout the document. Please refer to each section in the manual for specific detail on changes marked on the checklist.

C. Changes to Quality Reporting

1) **Data Submission Timelines.** The following table updates the process measures calendar year (CY) quarter discharge period submission dates, and manual versions that apply to each reporting cycle.

Table 1-2: Acute RFA 2022 Data Submission Cycles

Acute RFA Submission Due Date	Quarter Reporting Cycle (Discharge Period)	EOHHS Manual Version
August 13, 2021	Q1-2021 (Jan 1, 2021 – Mar 31, 2021)	Version 14.0
November 12, 2021	Q2-2021 (April 1, 2021 - June 30, 2021)	Version 14.0
February 11, 2022	Q3-2021 (July 1, 2021 – Sept 30, 2021)	Version 15.0
May 13, 2022	Q4-2021 (Oct 1, 2021 – Dec 31, 2021)	Version 15.0
August 12, 2022	Q1-2022 (Jan 1, 2022 – Mar 31, 2022)	Version 15.0 and Release Notes (Version15.1) or TBD

As shown in Table 1.2, the Acute RFA contains the following reporting requirements:

- **Rate Year 2022**: reinstate all four quarters Calendar Year (CY) 2021 data period reporting required for RY22 performance scoring and payment calculations.
- **Rate Year 2023**: include the Q1-2022 prospective Calendar Year (CY) 2022 data period reporting that will apply to RY23 performance scoring and payment calculations.
- **EOHHS Manual Versions**: The version of instructions applicable to specific quarter reporting period vary and/or are to be determined (TBD).

2) **Data Specifications.** Changes to MassHealth specific data reporting are summarized below.

Table 1-3: Changes to Reporting Specifications

Data Specification	Description	EOHHS Manual Specification	Effective Data Period
NEWB-1	• Add evaluation of "Other" Diagnosis codes for Table 11.20.1 to initial patient population.	Section 3 description	As of Q3-2021
Payer Source Code	• Replace code 106 with code 207 (Medicaid Managed Care –Tufts Health Together Plan • Changes apply for All MassHealth records	Section 2 Appendix A-1,2,3,4 and 6	As of Q3-2021
Medical Record Request	• CY2021 requires 4 charts each for Q1, Q2, and Q3 reporting cycles.	Section 6.A	As of Q1-2021
CCM-1,2,3	• Update harmonized data specifications and tools (Release Notes v14.1). • Add payer code 207 and remove code 116	Release Notes (v15.1) Appendix A-3, A-4, A-6, A-7 (v15.1)	As of CY2022 Q1-2022 data

Table 1.3 summarizes the key changes that apply to MassHealth specific measures data reporting, EOHHS Manual sections and the effective quarter data file periods, and manual sections that describe the change.

D. Performance Evaluation Periods

The measurement periods to evaluate quality measure category performance are summarized in the following table.

Table 1-4: RY2022 Performance Evaluation Periods

Quality Measure Category	Previous Period	Comparison Period	Performance Assessment Method
Perinatal (MAT-4, NEWB-1)	CY2019* (Jan 1 – Dec 31, 2019)*	CY2021 (Jan 1 – Dec 31, 2021)	Attain & Improvement
Care Coordination (CCM-1,2,3)	CY2019* (Jan 1 – Dec 31, 2019)*	CY2021 (Jan 1 – Dec 31, 2021)	Attain & Improvement
Health Disparity (HD-2)	Not applicable	CY2021 (Jan 1 – Dec 31, 2021)	Decile Rank
Patient Safety & Adverse Events (PSI-90)	Not applicable	Oct 1, 2018 – Dec 31, 2019* (15 months)	Interquartile Rank
Healthcare-Associated Infections (HAI's)	Not applicable	Jan 1, 2019 – Dec 31, 2019* (12 months)	Interquartile Rank
Patient Experience (HCAHPS)	None*	CY2020* (July 1 – Dec 31, 2020)*	Not applicable *

1) Performance Assessment Models

a) Attainment and Improvement Method - The perinatal, care coordination and patient experience quality categories are evaluated using comparison and previous calendar year data to calculate attainment and improvement points as described in Section 7.4 of Acute RFA.

b) Decile Rank Method - The health disparity quality category performance is evaluated using only the hospital-reported comparison year data to compute between group variance results for decile group ranking as described in Section 7.4 of Acute RFA.

c) Interquartile Rank Method - The safety outcome quality category (PSI-90 & HAI's) is evaluated using 24 month data periods, whenever feasible, to compute overall z-scores for quartile ranking as described in Section 7.4 of Acute RFA.

2) Provisional Adjustments

a) MassHealth acknowledges that performance may have been impacted by COVID-19 pandemic during CY2020 (01/01/20 to 12/31/20) discharge periods which could potentially distort scores. In Table 1.4 the asterisk (*) reflect adjustment to remove CY2020 periods for performance scoring.

b) In RY2022 performance evaluation periods were adjusted as follows:
   - Perinatal and Care Coordination - Performance will be evaluated using the comparison year period with an "adjusted" previous year period (CY2019) instead of the immediate previous CY20 data period, to compute attainment and improvement points.
   - Safety Outcomes - Performance for PSI-90 and HAI's will be evaluated using a shortened data periods instead of usual 24 months and exclude nine months of (01/1/20 – 9/30/20).
   - Patient Experience - In RY22 the usual performance assessment method (attainment, improvement) will not apply due to limited publically available data for comparison year period. Provisional quality scoring as described in Section 7.4 of Acute RFA2022 will apply.

Contact MassHealth masshealthhospitalquality@mass.gov with questions performance data periods.

E. Program Participant Forms

The MassHealth Hospital P4P Program participant forms required each rate year are listed in the following table.

Table 1-5: MassHealth P4P Program Forms

Form Name	Content	Instruction to Complete	Mail Address Instruction
MassHealth Hospital Quality Contact Form (Hosp_Contact)	• Identify Acute RFA key representatives • List MassQEX User contacts • List SFTP User contact • Require key representative signature	Submit at start of new rate year. Resubmit if changes during year. See Acute RFA (Section 7.2 and 7.6) instruction.	**EOHHS MassHealth Office** (Address listed at bottom of form)
MassHealth Hospital Data Accuracy and Completeness Attestation Form (Hosp_DACA)	• Identify measures exception that apply • Require Hospital CEO signature	See Acute RFA (Section 7.3 and 7.6) instruction.	**EOHHS MassHealth Office** (Address listed at bottom of form)
MassHealth Extraordinary Circumstance Exception Request Form (MHECR)	• Provide circumstance detail plus • Supporting documentation • Require Hospital CEO signature	See EOHHS Manual (Section 5.F) instruction	**EOHHS MassHealth Office** (Address listed at bottom of form)
MassQEX Data Validation Reevaluation Request Form (MHDREV)	• Describe reason and details for request • Require Quality designate signature	See EOHHS manual (Section 6.C) instruction	**Email to Help Desk** massqexhelp@telligen.com
MassQEX Hospital Staff User Registration Form (On-line)	• List designated Hospital staff • Require Hospital CEO signature • Require Notary stamp	See EOHHS manual (Section 5.D) instruction	**Telligen MassQEX Contractor** (Address listed at top of form)
MassQEX Third-Party Vendor User Registration Form (On-line)	• List designated Vendor staff • Require Hospital CEO signature • Require Notary stamp	See EOHHS manual (Section 5.D) instruction	**Telligen MassQEX Contractor** (Address listed at top of form)
MassQEX SFTP User Registration Form (On-line)	• List designated Hospital staff • Require Hospital CEO signature • Require Notary stamp	See EOHHS manual (Section 6.B) instruction	**Telligen MassQEX Contractor** (Address listed at top of form)

Downloading MassHealth Program Forms:

a. The PDF fillable MassHealth Hospital Quality Contact, DACA, MHECR and MHDREV forms are posted on Mass.Gov at: https://www.mass.gov/service-details/masshealth-acute-hospital-p4p-program-documents

b. MassQEX User Forms: The MHDREV fillable form is posted on Mass.Gov website. The on-line MassQEX User Registration Forms are located on the portal homepage at: https://massqex-portal.telligen.com/massqex/

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 applicable measures for RY2022 are listed on Table 2.1.

Table 2-1: MassHealth Acute Quality Measures

Metric ID #	Measure Name	EOHHS Manual Instruction
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	Section 3.C-1
CCM-2	Transition record with data received by patient at discharge	Section 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 instructions
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 (seven survey dimensions)	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 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 14.0 – use this version as of Q3-2021 discharge data file reporting*
   - *Version 14.0 – use this version as of Q4-2021 discharge data file reporting*
   - *Versions 15.0 and 15.1 – use these versions as of Q1-2022 discharge data file reporting*

2) **Specifications Manual for Joint Commission National Quality Measures** *(v2021B1),* plus related Release Notes and Appendix A: ICD-10-CM Code Tables for maternity and newborn measures posted on: https://manual.jointcommission.org/Manual/WebHome,
   The MAT-4 and NEWB-2 measure specification attributes published under Section 3 of this EOHHS manual were adapted in consultation with The Joint Commission. Hospitals and their data vendors should update their software and associated documentation based on The Joint Commission's published manual production timelines.

3) **Other Technical Manuals** *Refer to Section 7 to 9 in this EOHHS manual for technical measure specification attributes and versions that apply to PSI-90, HAI and HCAHPS measures*.

B. MassHealth Specific Data Elements

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

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

- Included Payer Codes: *r*epresent Medicaid insurance plans where MassHealth is the primary or only payment source as listed in Table 2.2.

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

Table 2-2: Massachusetts CHIA Medicaid Payer Source Codes*

Source Code	Health Plan Description
INCLUDED	**INCLUDED**
103	Medicaid: Includes MassHealth Fee-for-service and MassHealth Limited
104	Medicaid: Primary Care Clinician (PCC) Plan
208	Medicaid Managed Care- Boston Medical Center HealthNet Plan
274, ***207***	Medicaid Managed Care-Tufts Health Together Plan
119	Medicaid Managed Care-Other (not listed elsewhere)
118	Medicaid Managed Care Massachusetts Behavioral Health Partnership
311	Medicaid: Other ACO
312	Medicaid: Fallon 365 Care (ACO)
313	Medicaid: Be Healthy Partnership with Health New England (ACO)
314	Medicaid: Berkshire Fallon Health Collaborative (ACO)
315	Medicaid: BMC HealthNet Plan Community Alliance (ACO)
316	Medicaid: BMC HealthNet Plan Mercy Alliance (ACO)
317	Medicaid: BMC HealthNet Plan Signature Alliance (ACO)
318	Medicaid: BMC HealthNet Plan Southcoast Alliance (ACO)
320	Medicaid: Community Care Cooperative (ACO)
322	Medicaid: Partners Healthcare Choice (ACO)
323	Medicaid: Steward Health Choice (ACO)
321	Medicaid: My Care Family with Allways Health Partners (ACO)
324	Medicaid: Tufts Health Together with Atrius Health (ACO)
325	Medicaid: Tufts Health Together with BIDCO (ACO)
326	Medicaid: Tufts Health Together with Boston Children's (ACO)
327	Medicaid: Tufts Health Together with CHA (ACO)
328	Medicaid: Wellforce Care Plan (ACO)
EXCLUDED	**EXCLUDED**
98	Healthy Start (free care pool)
120	Out of State Medicaid
144	Other Government
178	Children's Medical Security Plan (CMSP)
273	MassHealth Senior Care Options
280	One Care – Tufts Health Unify
281	One Care – Commonwealth Care Alliance
995	Health Safety Net
310	Other: Commercial ACO Plan
See CHIA specs	All Health Connector and Commonwealth Care Plans

*See FY21 CHIA Specifications Manual https://www.chiamass.gov/hospital-data-specification-manuals

2) **Race/Ethnicity Data Elements**. The Massachusetts state regulation at 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 as of RY19 reporting.

a) **Revised Data Element Codes.** The codes and allowable values required for MassHealth chart-based measures data reporting are summarized in the following table.

Table 2-3: Massachusetts CHIA Race/Hispanic 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**. 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- allow up to three fields (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 (2021) at: http://www.chiamass.gov/hospital-data-specification-manuals

c) **Data Accuracy Standard.** The OMB Directive established the standard for collection of information that race/ethnicity data be self-reported or reported by a representative who is authorized to speak for the patient (i.e., patient proxy-reported). As outlined in Section 6.B of this EOHHS Manual, Race and Hispanic indicator data codes are validated during the medical chart review process *to verify that codes are correctly reported in submitted measures data files*. Hospitals must ensure that medical records selected for validation include the proper documentation per patient file submitted. See Section 6.D of this EOHHS Manual for more details on data validation methods that apply to race/ethnicity data elements.

d) ***Data Completeness.*** *All collection and reporting of race and Hispanic indicator data should meet minimum standards for data completeness as described in Section 2.D of this EOHHS manual. Reducing missing or invalid values and "unknown/not specified" codes in race data is critical to improving reliability of disparity measure results and maximizing subgroup analysis. Unknown codes cannot be used for subgroup analysis and will affect accuracy of the hospitals health disparities measure category result.*

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**. The MassHealth specific 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. 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. 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 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**. The following table lists the data tool versions that apply to quarter reporting cycles listed in Table 1.1 of this EOHHS manual.

Table 2.4 Data Collection Tool Versions

Tool ID	Data Tool Name	Q3-2021 discharges	Q4-2021 discharges	Q1-2022 discharges	Q2-2022 discharges
A-1	NEWB-1 Data Abstraction Tool	v15.0	v15.0	v15.0	v15.0
A-2	MAT-4 Data Abstraction Tool	v15.0	v15.0	v15.0	v15.0
A-3	Data Abstraction Tool (CCM-1,2,3)	v15.0	v15.0	*v15.0 and v15.1*	*v15.0 and v15.1*
A-4	XML Schema MassHealth Specific Files	v15.0	v15.0	*v15.0 and v15.1*	*v15.0 and v15.1*
A-5	XML Schema Data Deletion Request File	v15.0	v15.0	v15.0	v15.0
A-6	MassHealth Data Dictionary	v15.0	v15.0	*v15.0 and v15.1*	*v15.0 and v15.1*
A-7	Measure Calculation Rules	v15.0	v15.0	*v15.0 and v15.1*	*v15.0 and v15.1*

Table 2.4 list appendix tool versions that apply as of *Q3-2021 discharge data reporting. Refer to the Release Notes (v15.1) for updated instruction that apply to the harmonized care coordination measures reporting data specifications and appendix tools as of Q1-2022.*
Contact the MassQEX Helpdesk if you have questions on appendix tool versions 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 previously listed must be received by the submission due dates listed in 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 hospitals 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 exemption for the specific measures listed in the DACA form will result in not meeting data completeness requirements. See also sections 7 to 9 in this manual for data accuracy and completeness criteria that apply to outcome measures.

E. Manual Version Tracker. EOHHS periodically updates technical specifications during the rate year to improve accuracy of measure reporting. A summary of updates that apply to MassHealth quality measures listed on Table 2.1. New change is noted in italic underline font.

Table 2-5: Rate Year EOHHS Manual Version Tracker

EOHHS Manual (Publish Date)	Manual Version	Calendar Year (CY) Quarter Period	Measure Description (Section 3,7,8,9)	Abstraction Tools	XML Schema Files	Data Dictionary	Measure Calc. Rules	Reports User Guide
RY2020 EOHHS Manual (Aug 16, 2019)	v.13.0	Continue CY19 specs • Q3-2019 • Q4-2019	NEWB1: Description/Flowchart MAT4: Description/Flowchart CCM: Description/Flowchart PSI-90: Description HAI's: Description HCAHPS: Description	A-1: NEWB1 A-2: MAT4 A-3: CCM	A-4: MH Specific Measures A-5: Data Deletion	A-6: Data Elements • NEWB • MAT • CCM • All MH records	A-7: MassHealth Metrics • NEWB, MAT, CCM A-8: PSI-90 Metric • PSI-90 rules	A-9: User Guide • Validation result • Year end results • QPS results
RY2021 EOHHS Manual (Sept 2, 2020)	**v.14.0**	Restart CY20 specs • Q3-2020 • Q4-2020 Introduce CY21 specs • As of Q1-2021	NEWB1: Description/Flowchart MAT4: Description/Flowchart CCM: Description/Flowchart PSI-90: Description HAI: Description HCAHPS: Description	A-1: NEWB1 A-2: MAT4 A-3: CCM	A-4: MH Specific Measures A-5: Data Deletion	A-6: Data Elements • NEWB • MAT • CCM • All MH records	A-7: MassHealth Metrics • NEWB, MAT, CCM A-8: PSI-90 rules	A-9: User Guide • Validation result • Year end results • QPS results
Release Notes (Nov 12, 2020)	**v14.1**	CCM harmonized specs as of Q3-2021 ***(See v15.1 update)***	CCM: Description/Flowchart	A-3: CCM	A-4: MH Specific Measures	A-6: Data Elements • CCM	A-7: MassHealth Metrics • CCM	Not applicable
RY2022 EOHHS Manual (Aug 25, 2021)	***v15.0***	***Continue CY21 specs*** • *Q3-2021* • *Q4-2021* *Introduce CY22 specs* • *As of Q1-2022*	*NEWB1: Description/Flowchart* *MAT4: Description/Flowchart* *CCM: Description/Flowchart* *PSI-90: Description* *HAI: Description* *HCAHPS: Description*	*A-1: NEWB1* *A-2: MAT4* *A-3: CCM*	*A-4: MH Specific Measures* *A-5: Data Deletion*	*A-6: Data Elements* • *NEWB* • *MAT* • *CCM* • *All MH records*	*A-7: MassHealth Metrics* • *NEWB, MAT, CCM* *A-8: PSI-90 rules*	*A-9: User Guide* • *Validation result* • *Year end results* • *QPS results*
Release Notes (Aug 25, 2021)	***v15.1***	*Updated CCM harmonized specs and tools* (as of Q1-2022)	*CCM: Flowchart and data validation element*	*A-3: CCM*	*A-4: MH Specific Measures*	*A-6: Data Elements* *CCM*	*A-7: MassHealth Metrics* • *CCM*	Not applicable

Column Headers

- **EOHHS Manual** - Refers to rate year (RY) reporting relevant to Acute RFA contract period. Publish date is when posted on Mass.gov website
- **Manual Version - I**ndicates substantive update to specification instructions that apply to RY data cycles.
- **CY Quarter Period** – Refers to quarter discharge period that new changes in technical specifications apply.
- **Measure Description** – Refers to chart process measure descriptions/flowcharts and other outcome measure specifications that apply.
- **Abstraction Tools** – Refers to data abstraction tools that apply effective when CY quarter reporting changes begin.
- **XML Schema File** – Refers to XML file layout listed that applies effective when CY quarter reporting changes begin.
- **Data Dictionary** - Refers to data element descriptions that apply effective when CY quarter reporting changes begin.
- **Measure Calc. Rule** – Refers to MassHealth specific process and claims measure calculation rules that apply to the data period.
- **User Guide -** Refers to explanation of year-end report and performance score results posted in the MassQEX portal.
- **None –** Indicates that content of technical specifications have not changed.

Section 3. MassHealth Specific Measures Specifications

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

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

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 *or Other* 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.

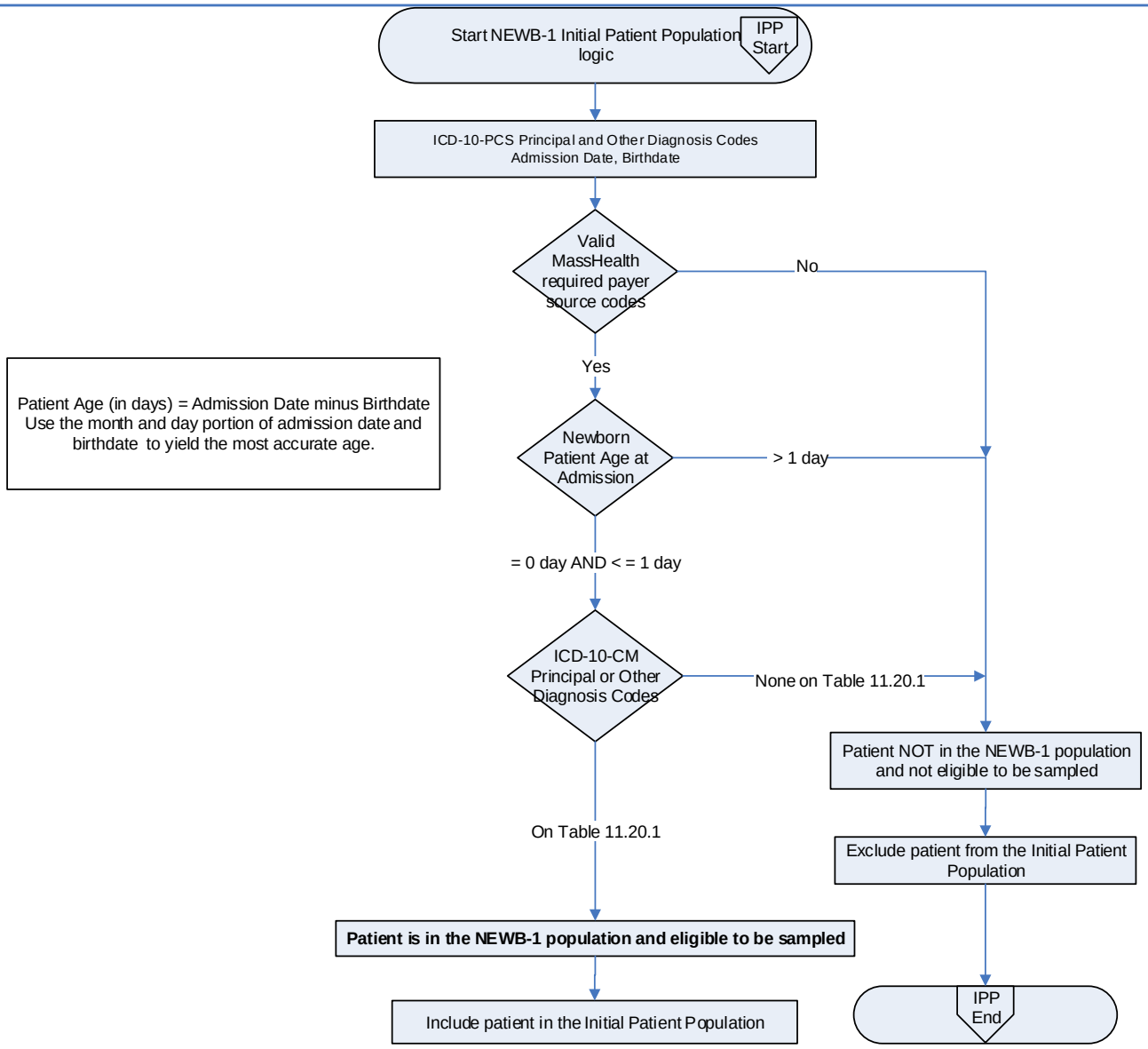
Data Collection: Sources include administrative data and medical records. Refer to NEWB-1 data abstraction tool and data dictionary of this EOHHS manual for detailed instruction.

Sampling: Yes. Refer to Section 4 of this manual for MassHealth sample size requirements.

Data reported as: Refer to the calculation rules in this EOHHS manual that apply to NEWB-1 measure.

Improvement noted as: Increase in the rate.

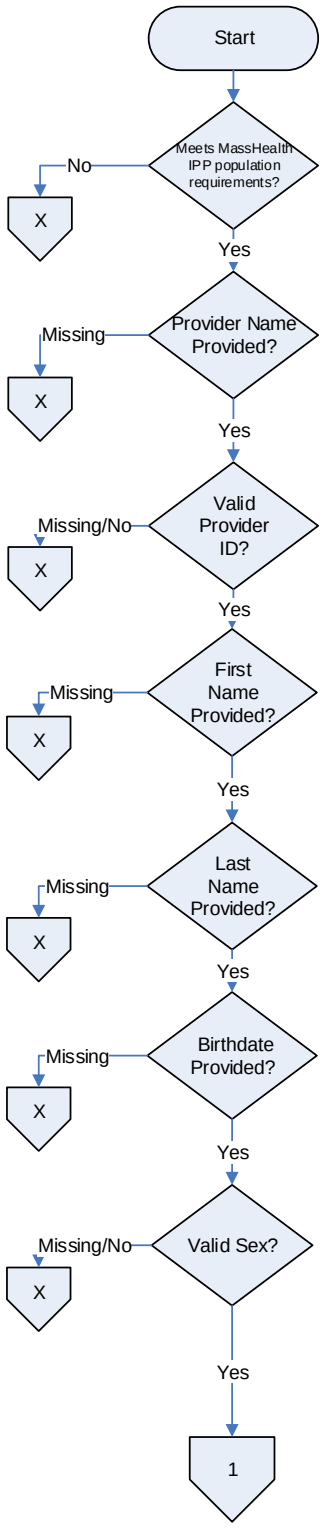
Initial Patient Population Algorithm
Exclusive Breast Milk Feeding (NEWB-1)



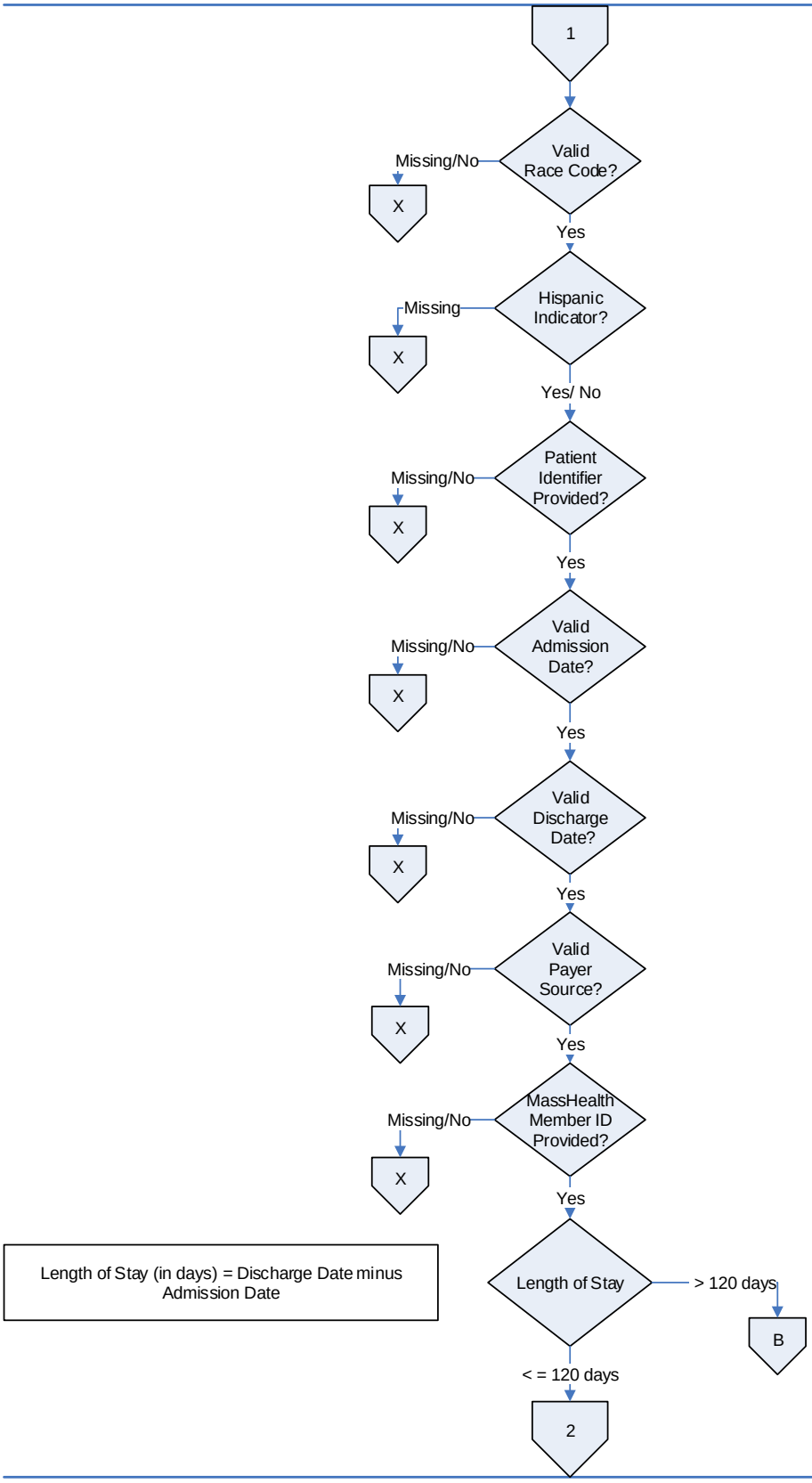
Exclusive Breast Milk Feeding (NEWB-1)

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

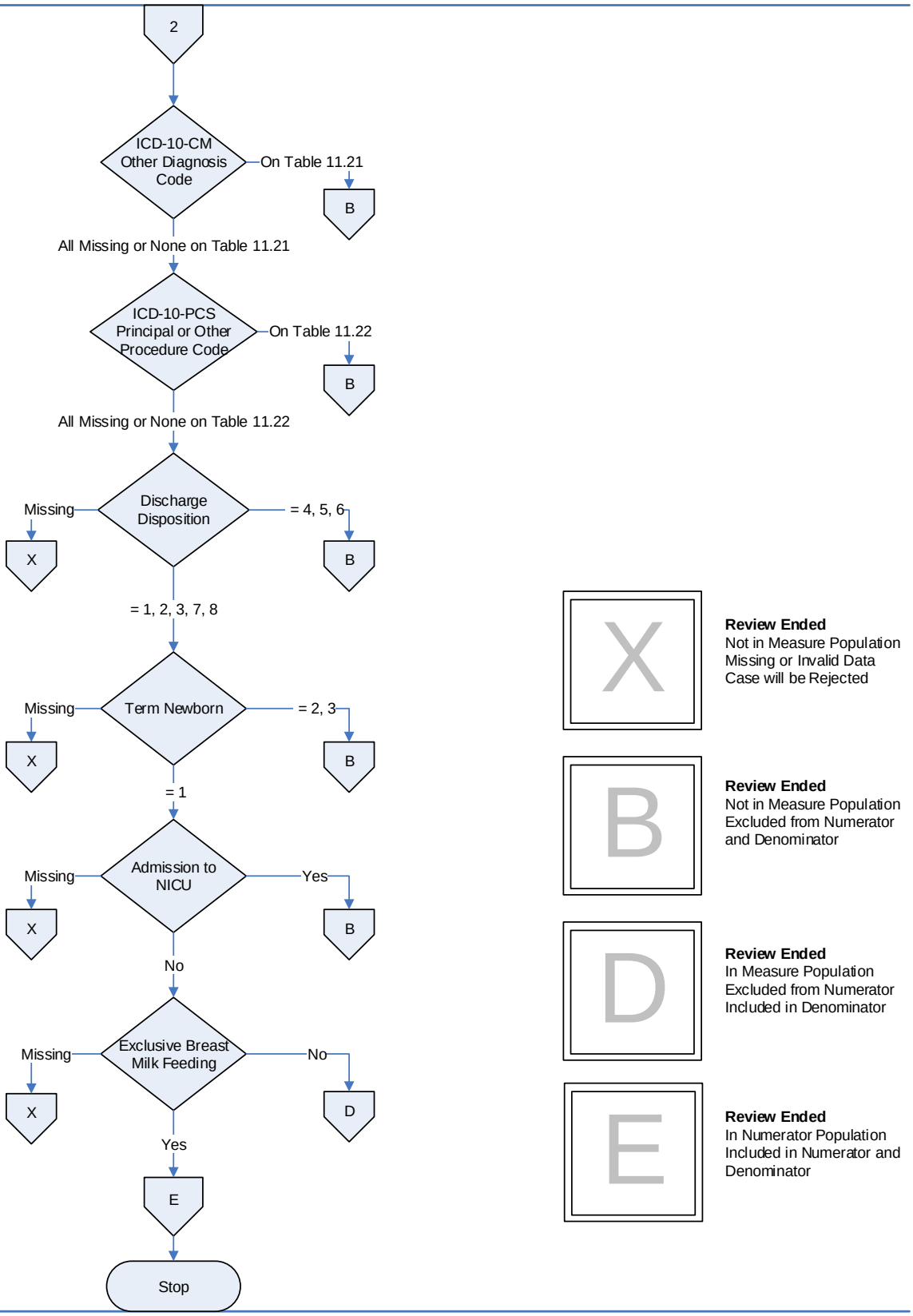
***Denominator:** Single term newborns discharged alive from the hospital



Exclusive Breast Milk Feeding (NEWB-1)



Exclusive Breast Milk Feeding (NEWB-1)



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 (MAT-4)

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

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

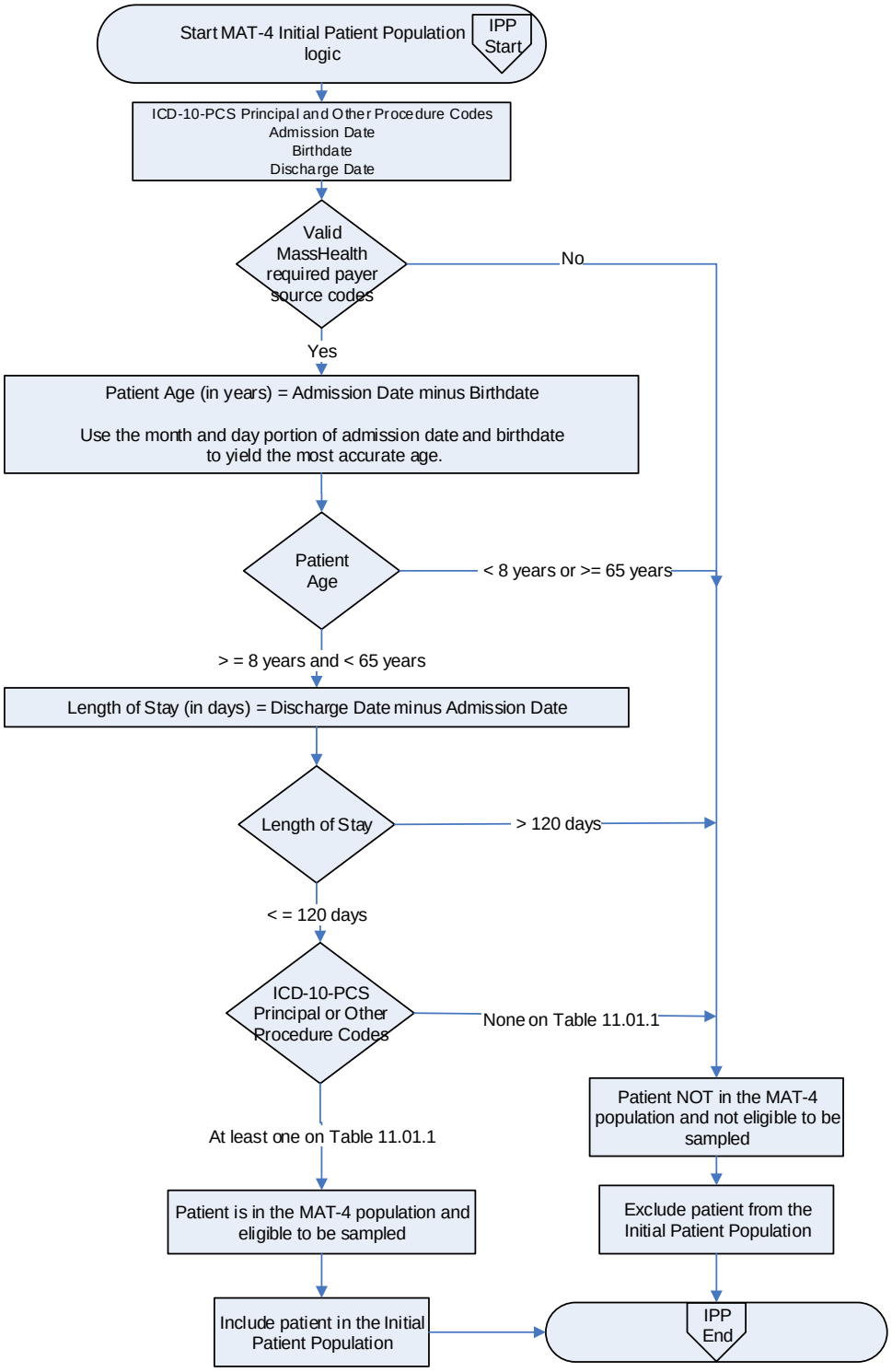
Data Collection: Sources include administrative data and medical records. Refer to MAT-4 data abstraction tool and data dictionary of this EOHHS manual for detailed instruction.

Sampling: Yes. Refer to Section 4 of this EOHHS manual for MassHealth sample size requirements

Data reported as: Refer to the MAT-4 calculation rules in this manual that apply to this measure.

Improvement noted as: Decrease in the rate.

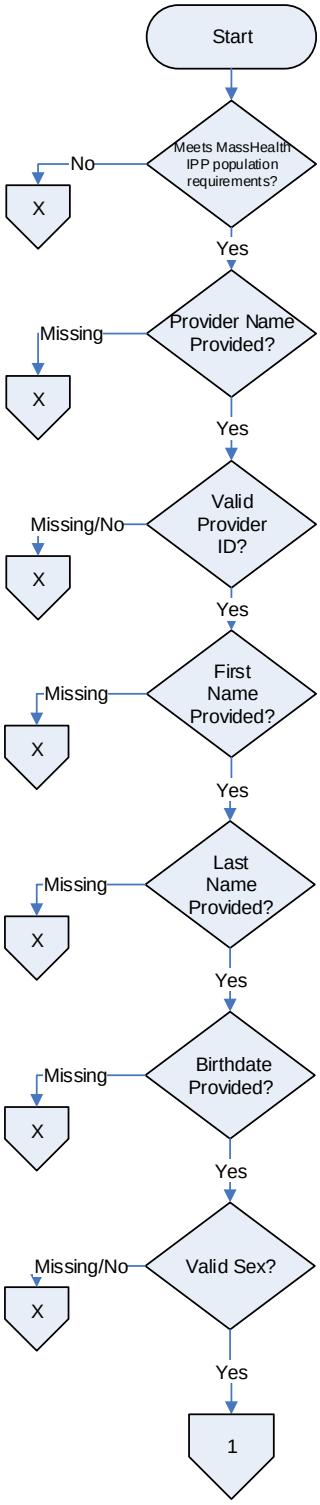
Initial Patient Population Algorithm
Cesarean Birth (MAT-4)



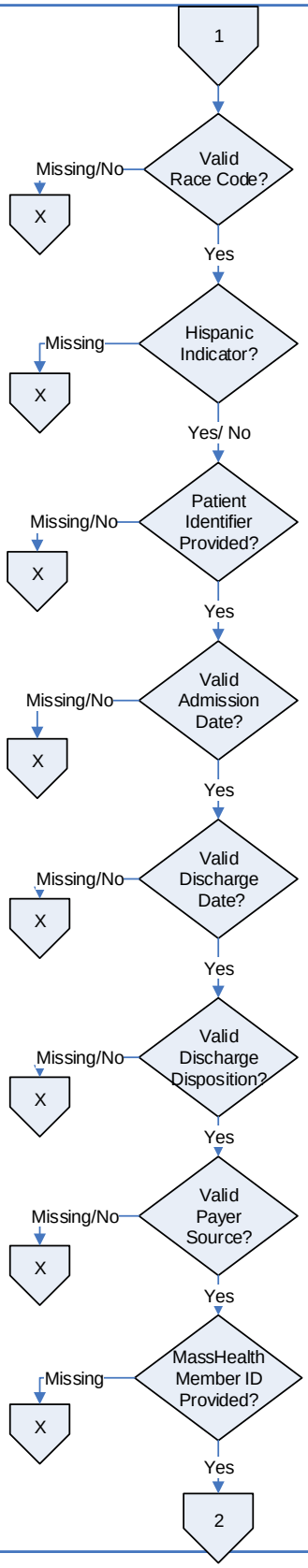
Cesarean Birth (MAT-4)

***Numerator:** Patients with cesarean births

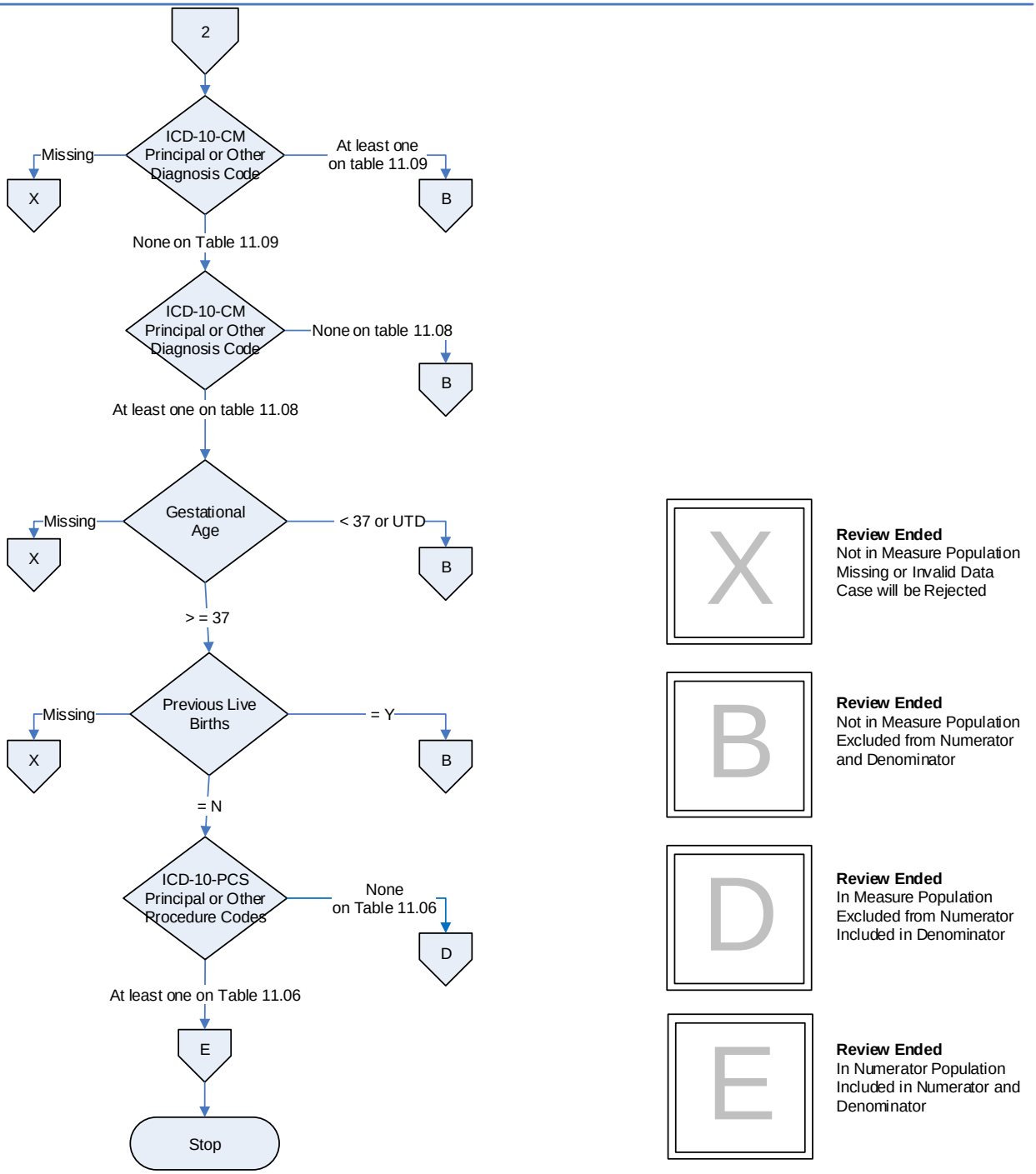
***Denominator:** Nulliparous patients delivered of a live term singleton newborn in vertex presentation



Cesarean Birth (MAT-4)



Cesarean Birth (MAT-4)



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).

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. See data abstraction tool (Appendix A-3) and data dictionary (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.

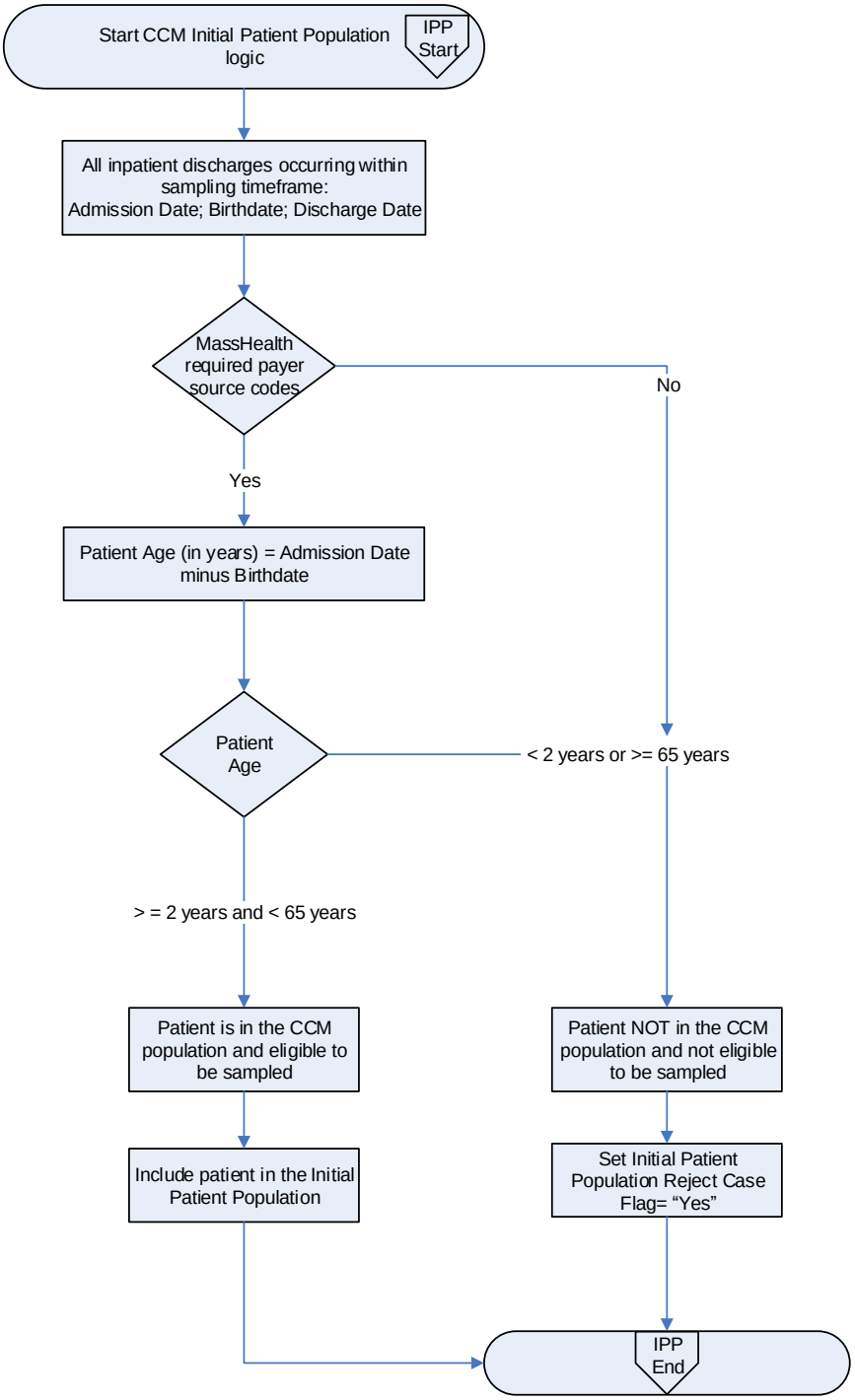
Measure analysis suggestion: Data could be analyzed further to determine specific patterns or trends.

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.

Improvement noted as: An increase in the rate.

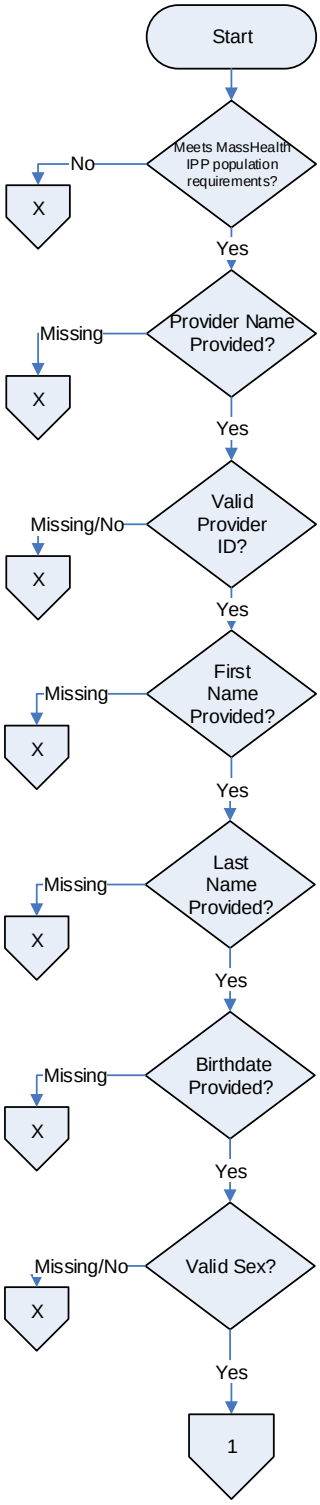
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



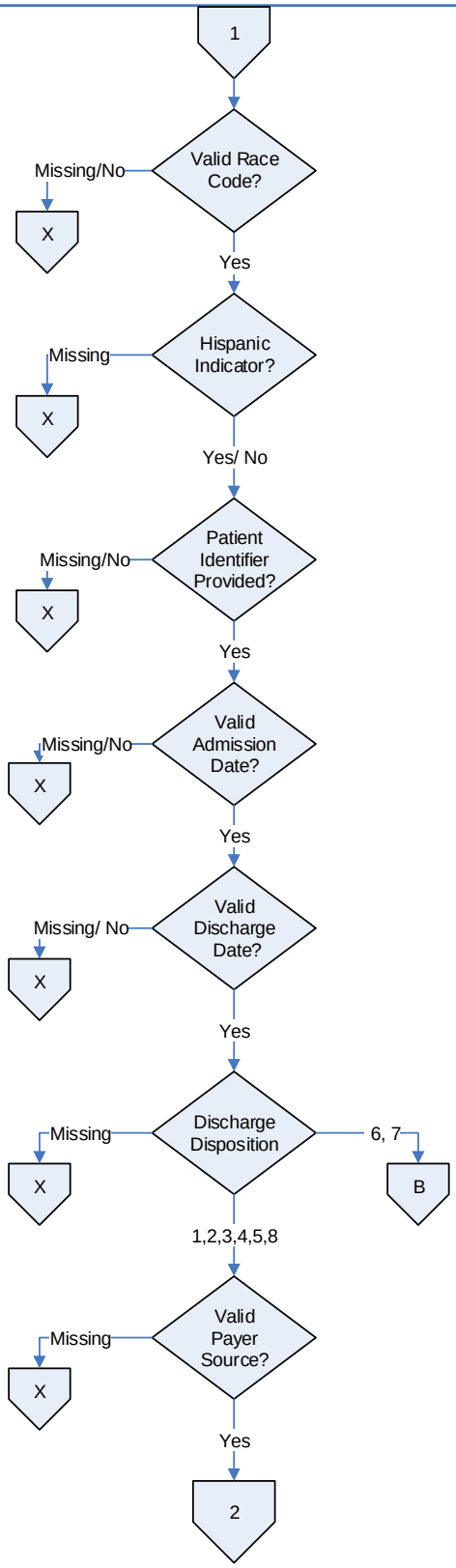
Care Coordination Measure (CCM-1)

***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.

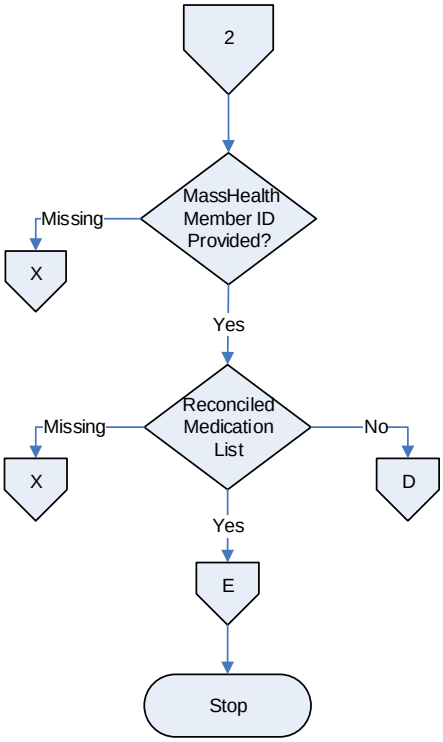
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



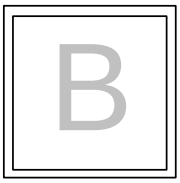
Care Coordination Measure (CCM-1)



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

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 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 all of the specified elements.

Numerator statement: Patients or their caregiver(s) who received a transition record (and with whom a review of all included information was documented) at the time of discharge including, at a minimum, *all* of the 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: See data abstraction tool (Appendix A-3) and data dictionary (Appendix A-6) of this manual for detailed instruction.

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

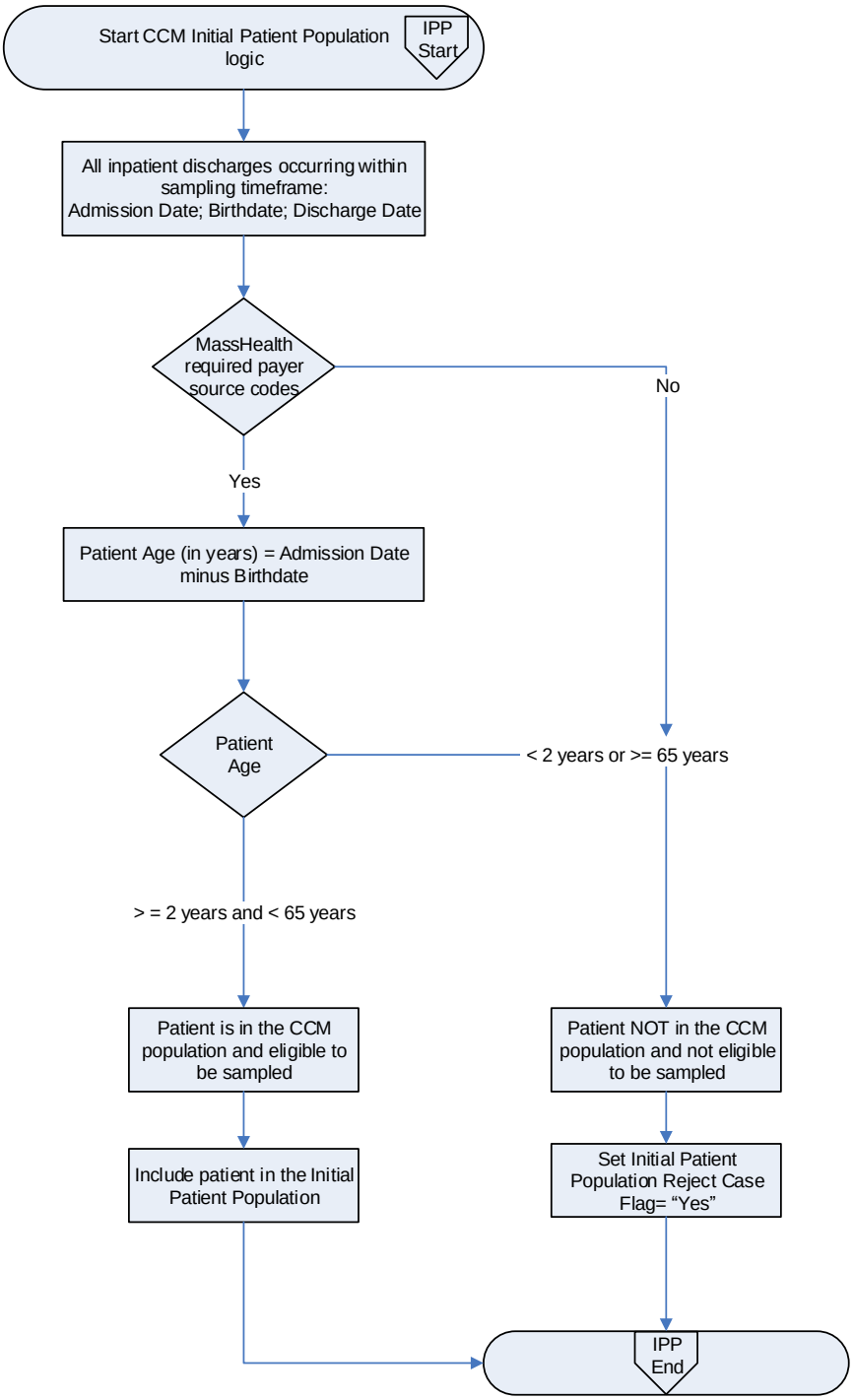
Measure analysis suggestion: Review specific patterns or trends for missing data elements.

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

Data reported as: Refer to the measure calculation rules Appendix in this manual that apply to this measure.

Improvement noted as: An increase in the rate.

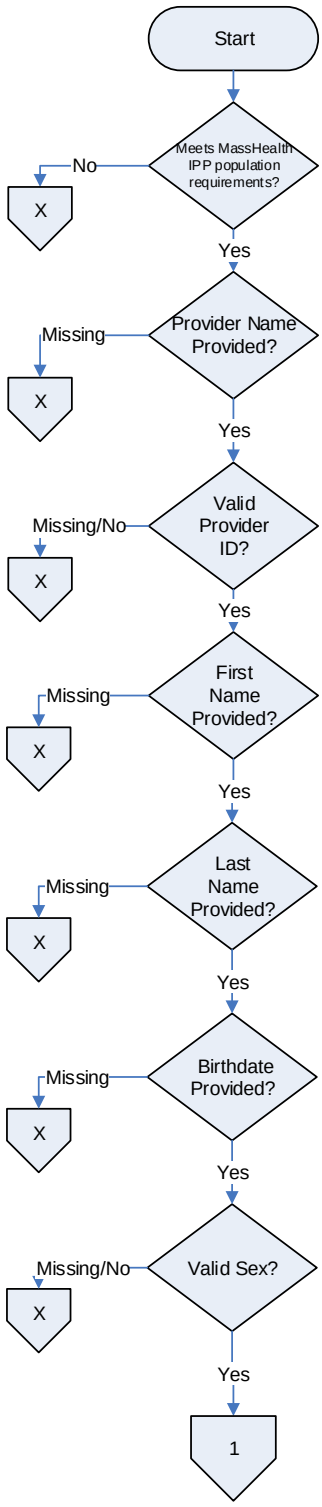
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



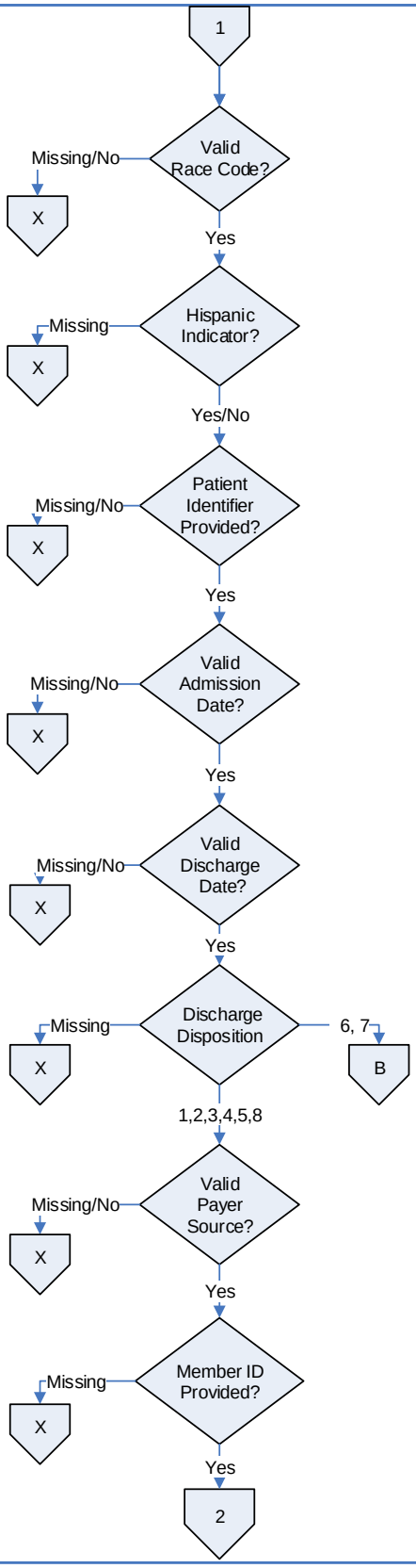
Care Coordination Measure (CCM-2)

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

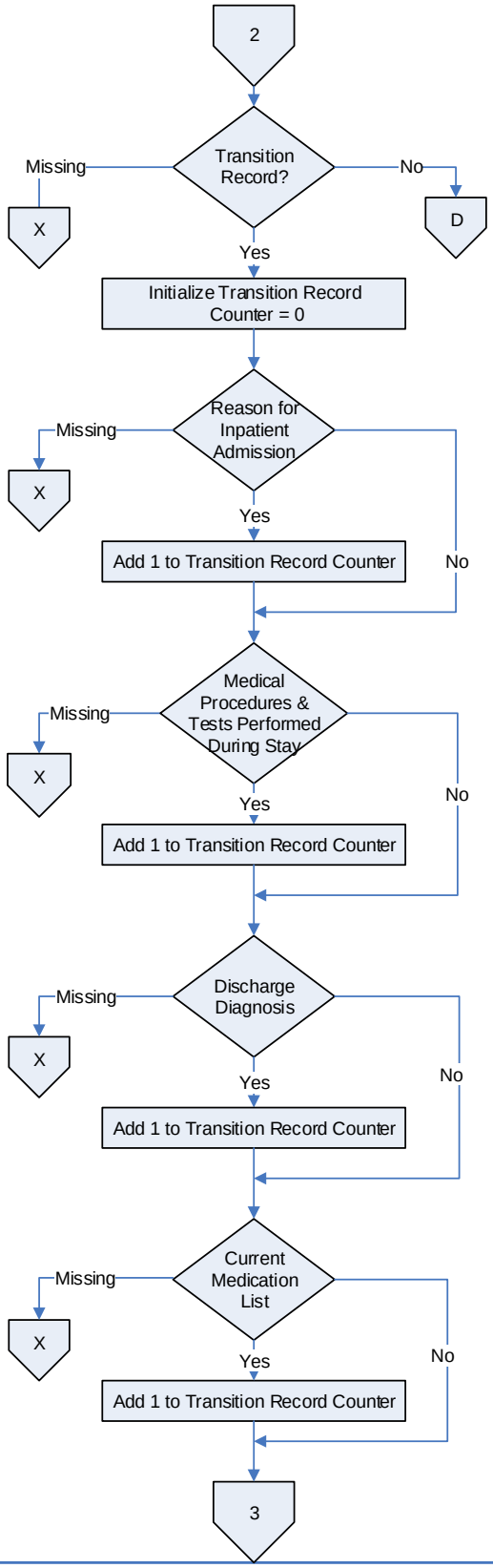
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



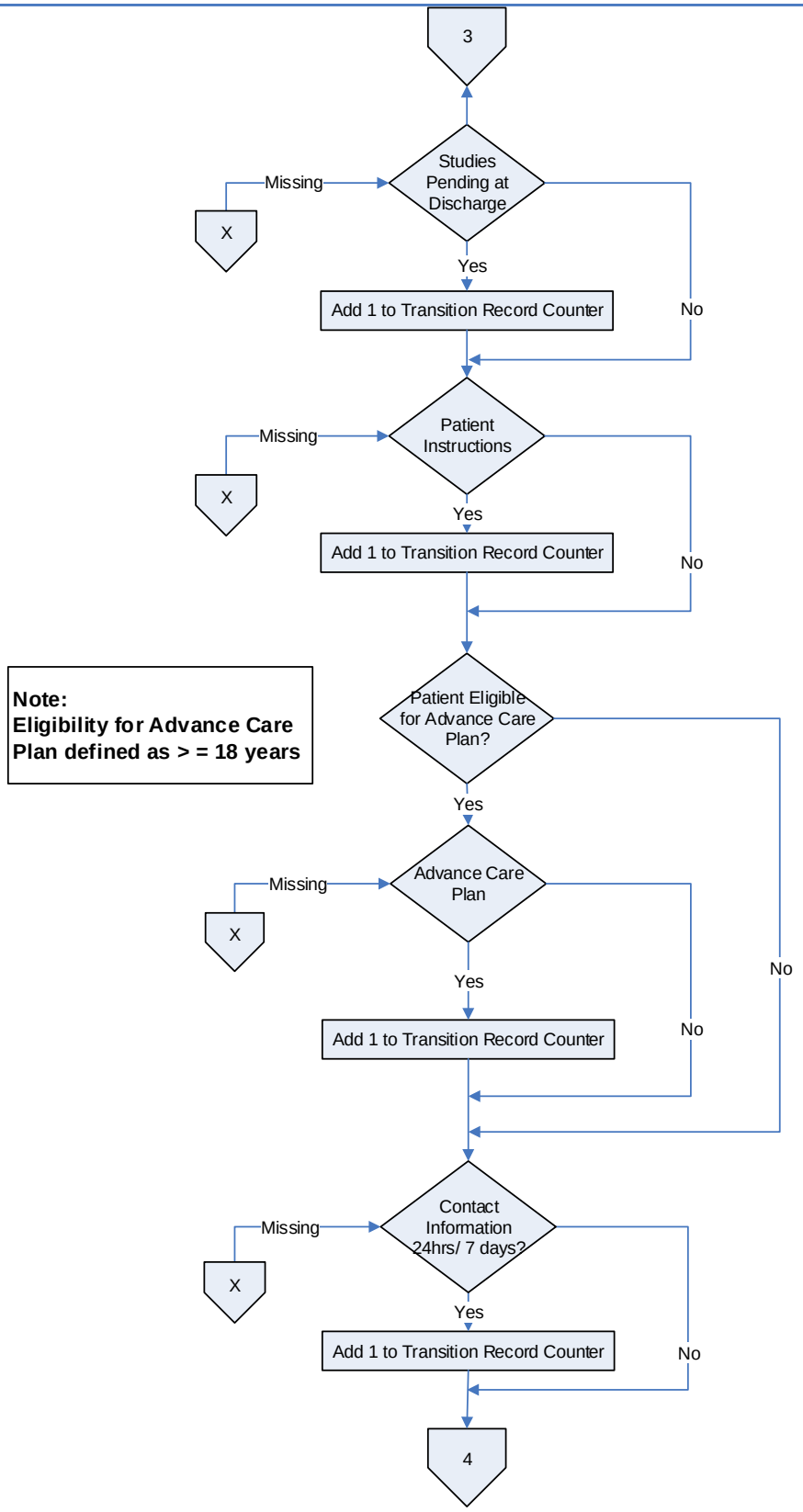
Care Coordination Measure (CCM-2)



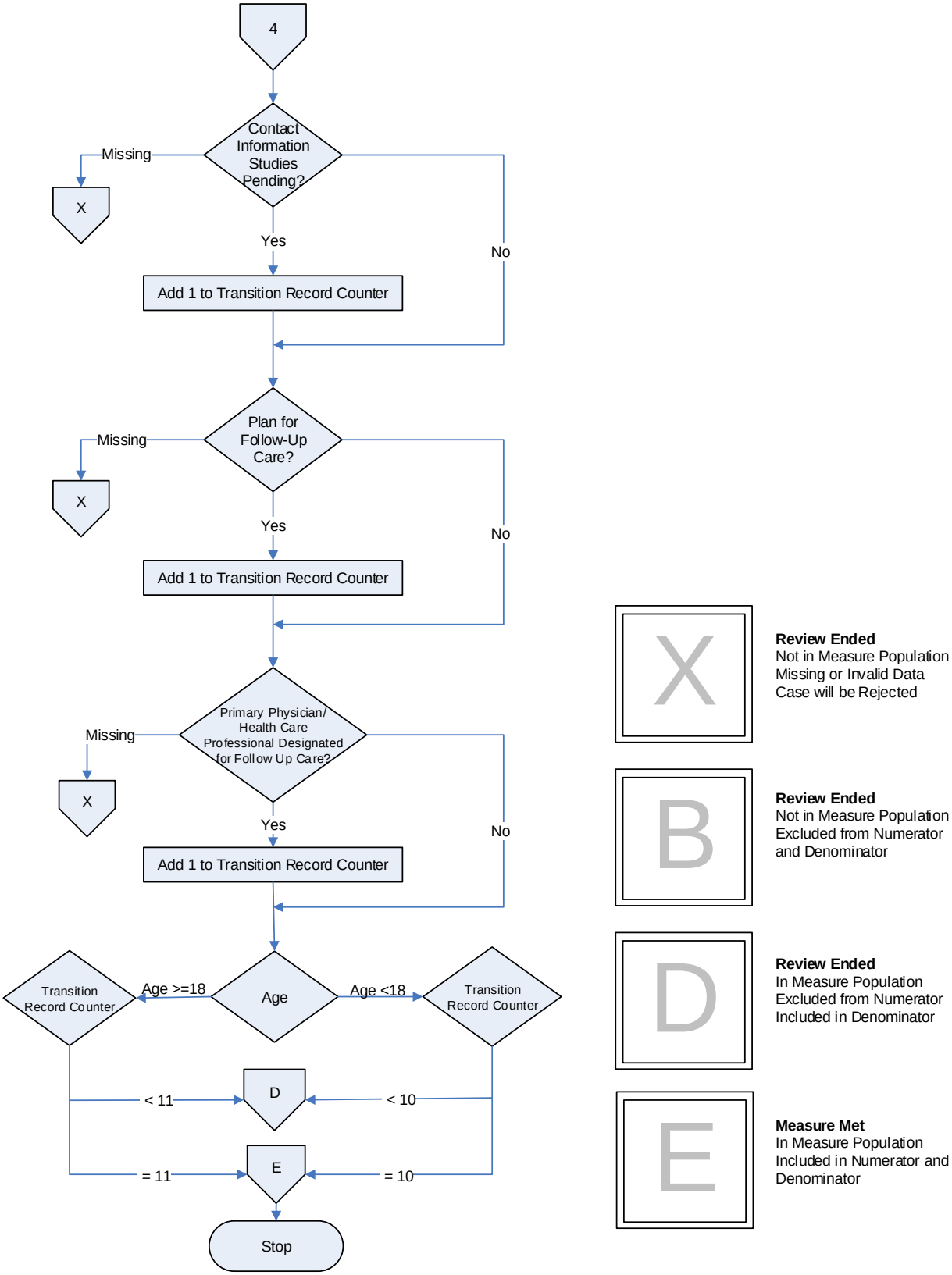
Care Coordination Measure (CCM-2)



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 Transmittal 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.

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.

Improvement noted as: An increase in the rate.

Selected References (CCM measures)

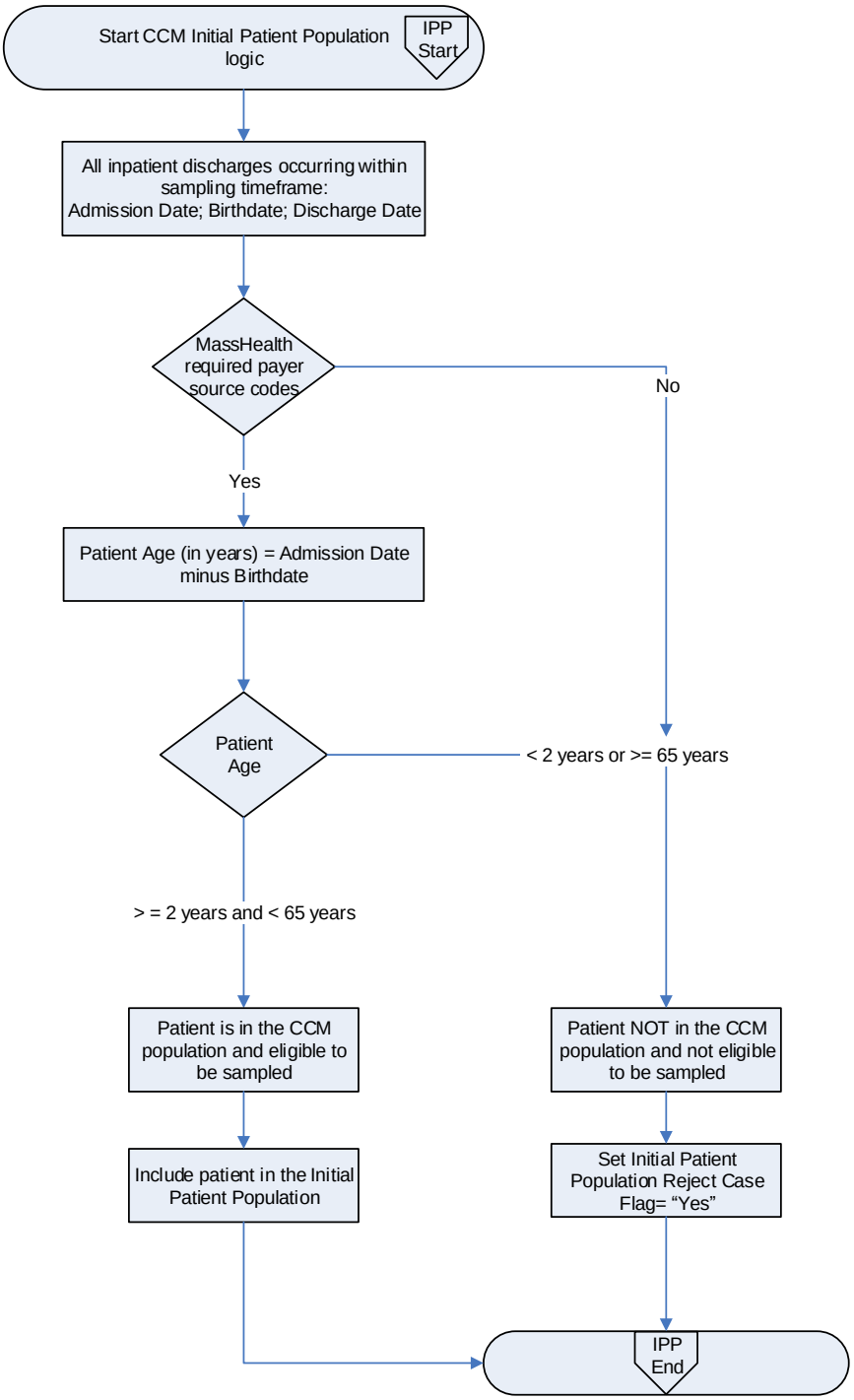
- American Medical Association - Convened Physician Consortium for Performance Improvement, American Board of Internal Medicine Foundation, American College of Physicians and Society of Hospital Medicine Care Transitions Performance Measurement Set: Inpatient Discharges & Emergency Dept. Discharges, Coding reviewed and Updated April 2016. https://www.ama-assn.org/practice-management/payment-delivery-models/permissions-and-licensing-pcpi-measures

- 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/. Accessed August 12, 2011. Accessed August 12, 2011.

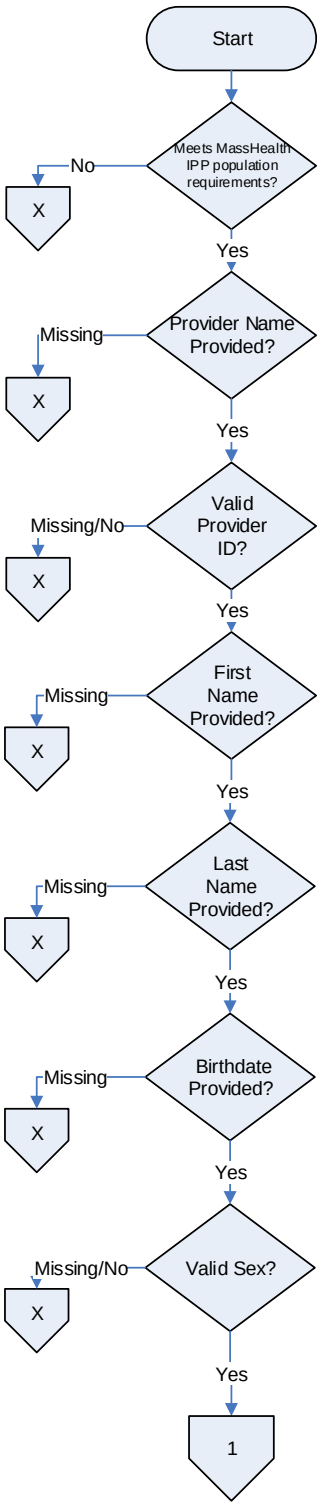
Initial Patient Population Algorithm
Care Coordination Measure (CCM-1, 2, 3)



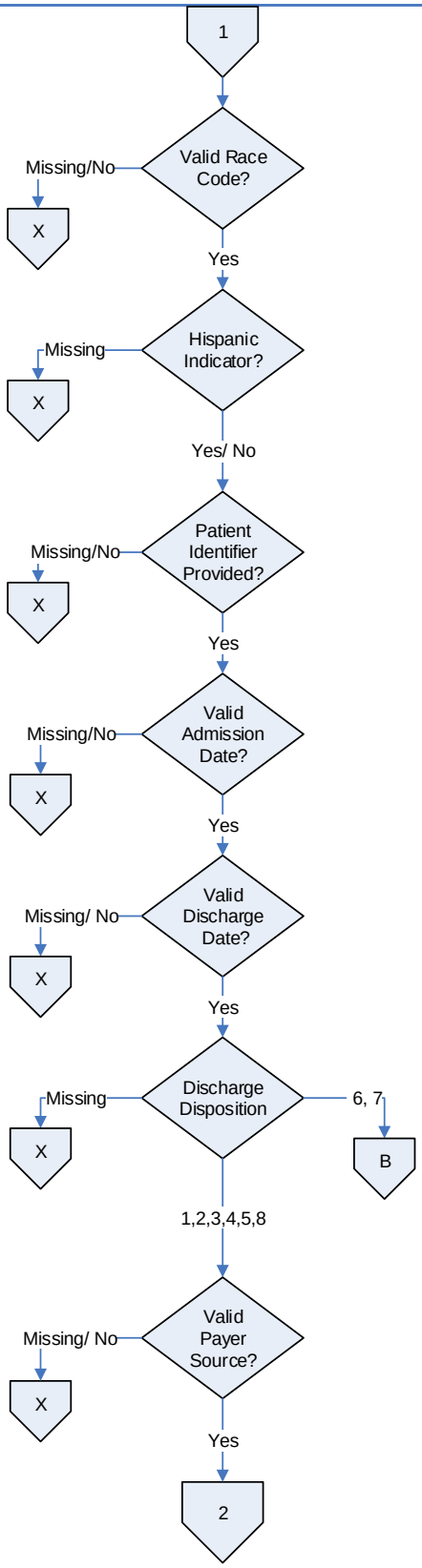
Care Coordination Measure (CCM-3)

***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

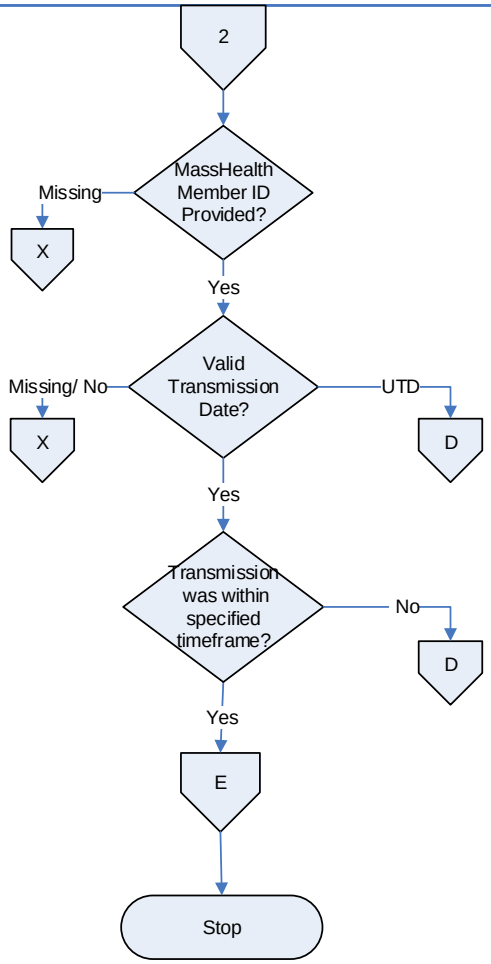
***Denominator:** Patients discharged from an inpatient facility to home/ self care or any other site of care.



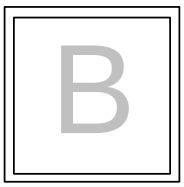
Care Coordination Measure (CCM-3)



Care Coordination Measure (CCM-3)



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



Review Ended
Not in Measure Population
Excluded from Numerator
and Denominator

Review Ended
In Measure Population
Excluded from Numerator
Included in Denominator

Measure Met
In Measure Population
Included in Numerator and
Denominator

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

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

1) Measure Attributes

Rationale: Composite measures typically summarize individual metrics that are somewhat related 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 when 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 composite rate from the hospitals 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.

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

2) Measure Calculation Method

1. Description of Terms and Formulas

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

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 hospitals 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.

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

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:
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
r_i = Comparison group composite rate is calculated by dividing the comparison group numerator (n_i) by the comparison group denominator (d_i)

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:

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

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 accounts for relative sizes of groups and weights each racial/ethnic group by the hospitals 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. 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. See Section 3.D detail on how to interpret BGV results.

2. Example of Composite Measure Calculation**.** A step-by-step example of the hospitals composite measure calculation is illustrated in Table 3.2 that follows. 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 hospitals data files must have more than one racial/ethnic group, after UNKNOW code is excluded. The hospital data file is sorted by all numerators and denominators to obtain the following information shown.

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/AA (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's reference and comparison group rates are calculated using the following steps.

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 previously in Section 4.c.
- 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.
- 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 previously
- 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 hospitals 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 previously shown are summarized in the hospitals year-end report. Contact the MassQEX Help Desk massqexhelp@telligen.com for questions on measure calculations.

Select References for Health Disparity 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 before 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 Approaches**. 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 improves 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 previously described in Section 4.A.
   b. Follow either simple random or systematic random sampling approach previously described
   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 in this section.

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 in this section 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 that follow.

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 previously listed.
   - Step 3- Identify MassHealth sample size requirements for each measure using Tables 4.1 and 4.2 to follow.
   - 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 previously outlined steps begin with the initial patient population and then extract 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 that follow 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 Table 4.1 that follows.

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, 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 the 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. The following 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 hospitals MassHealth initial patient population is N=30 cases. Using the Table 4.1, no sampling is allowed and 100% of the Medicaid population is required.
- During the second quarter, the hospitals MassHealth initial patient population is N=67 cases. Using the Table 4.1, the minimum required sample would be 60 cases for the Medicaid population.
- During the third quarter, the hospitals MassHealth initial patient population is N=75 cases. Using the Table 4.1, the required sample would be a minimum of 60 cases for the Medicaid population.
- During the fourth quarter, the hospitals MassHealth initial patient population is N=207 cases. Using the 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 Table 4.2 that follows.

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 Table 4.2, 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 EOHHS 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. The following provides 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 hospitals MassHealth initial patient population is N=19 cases. Using the Table 4.2, no sampling is allowed and 100% of the Medicaid population is required for the month.

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

- During March the hospitals MassHealth initial patient population is N=100 cases. Using the 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 previous Section 4.C.

   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 previous Section 4.C.4.

   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, described in Section 5 of this manual. Only hospitals, not data vendors, are authorized to enter ICD population data.

   b) Hospitals with no inpatient population and sample size data for a given measure, during a quarter (or month), must enter zero (0) on 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 data entry instruction and requirements.

Section 5. MassQEX Portal Transmittal Guidelines

This section outlines the technical guidelines for transmittal of MassHealth specific measures data files listed on 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 throughout this section. 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. The following technical portal system specifications are required to transmit data. Any deviation from the portal system requirements 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 10 or higher
   - 1 GB of RAM or higher
   - High speed internet connect of 384 Kbps or higher
   - MassQEX Portal supports the following Browsers:
     - *Microsoft Edge v 90 or higher*
     - *Chrome v 88 or higher*
     - *Firefox v 90 or higher*
   - Browser security level of medium
   - 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 before 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. The following 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 before 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 before 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 MassHealth specific 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 as follows.

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 that follow. 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 previously described. A summary of the required data submission contents follows.

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 follows.

   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 visible only 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.

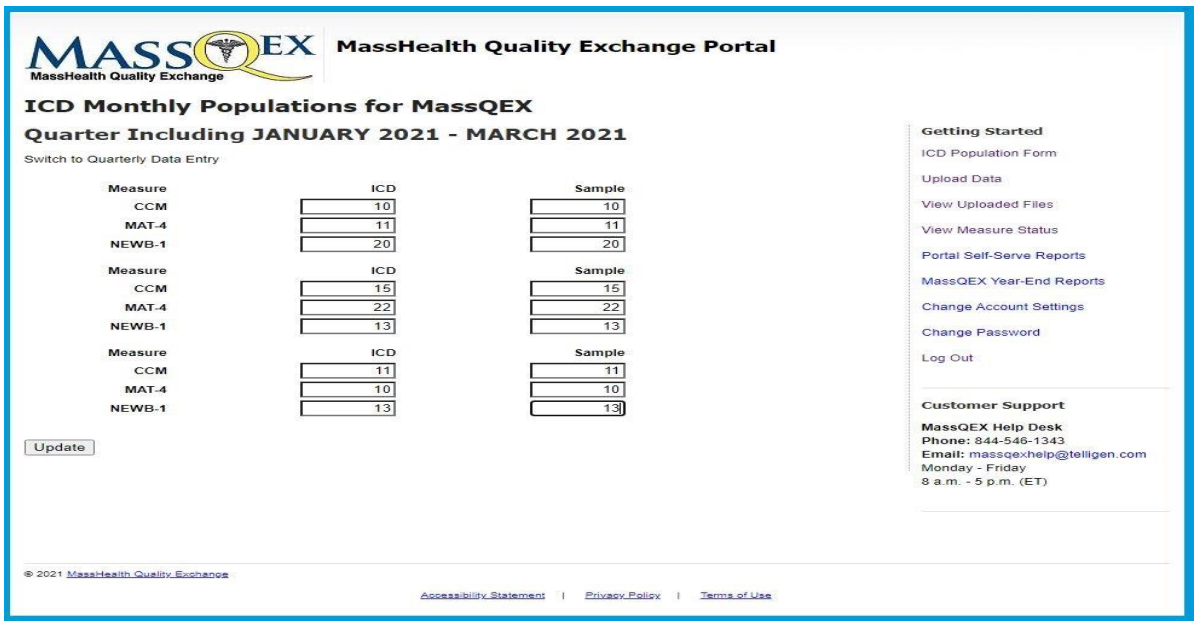
   b. **ICD Data Entry Form Compliance** - If the hospital has no cases to report during a given quarter then zero's (0) must be entered in all the fields provided on the data entry form. Failure to enter zeros will render the hospital entry having missing data resulting in non-compliance reporting status.

   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 that follow. Figure 1 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 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 of the close date of the 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 as follows.

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. What follows 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: 06/16/2021 02:03 PM (User, Test)
Provider: MassQEX
Uploader: MassQEX

FILE NAME	PROVIDER	MEASURE	DATE	PROCESSED	STATUS
MAT-4-005-Xbucket.xml	MassQEX	MAT-4 (07/01/2020-03/31/2021)	06/16/2021 02:03 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 (07/01/2020-03/31/2021)	06/16/2021 02:03 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 (07/01/2020-03/31/2021)	06/16/2021 02:03 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 this 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 before 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 previously described.

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 described as follows.

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. The following is an example of the report generated from the portal and on 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 2021, Q3	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

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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. The following is an example of the report and instructions on 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 CY2021

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

20210705 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.
- 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. Input File Reports are available to both hospitals and/or data vendors and the hospital user-initiated reports are available to the hospital user only and not data vendors**.**

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. Steps to register a new user are as follows.

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 hospitals 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 that the hospital can identify as the registered user.
   - The hospital can identify a maximum of five (5) accounts for hospital staff users and a maximum of three 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 in this section to gain access to the secure web portal.

3) **Completing User Registration Forms** 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 Form.** Originals of the completed notarized registration forms must be mailed to the following EOHHS Contractor address listed 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 (MassQEX) monitors all user account activity as follows:

   a) **Inactive Accounts-** 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 before 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 the preceding instructions.

   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 Help Desk 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 is available to work with hospital staff and third-party data vendors to assist in the implementation of technical data collection and transmittal procedures outlined in this manual.

1) **MassQEX Helpdesk** – the customer support contact information follows.

- **Phone**: The toll free number is (844) 546-1343. This line is answered by a live person who 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

- **Helpdesk 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 before 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. Extraordinary Circumstance Exception

Each rate year the Acute Hospital RFA contract outlines quality data reporting requirements all hospitals must meet to be eligible for incentive payments under the MassHealth Hospital P4P Program. EOHHS acknowledges that extraordinary circumstances can arise during the rate year which may impede the hospitals ability to meet quality reporting deadlines in Section 7.6 of Acute RFA. The conditions and procedures that apply to submitting quality reporting data exceptions follow.

1) **Provision for Data Exceptions.** A hospital can request an exception to Acute RFA quality reporting deadlines when it has experienced circumstances that are beyond the control of the hospital facility, which may include but are not limited to, the following definitions:

   a) *Extraordinary Circumstance* **–** a natural disaster, catastrophic event or act of nature (hurricane, tornado, floods, fires, etc.) that results in shut down of the hospital and/or data vendor facility operations thereby affecting the hospitals ability to complete the work required to meet a quality reporting deadline. This type of circumstance does not preclude EOHHS from granting exceptions for other hospitals that may be affected across a specific state region or locale.

   b) *Unusual Circumstance* **–** in the event that EOHHS agency and/or its Contractor (MassQEX) experience a *problem with data collection systems* (e.g.: building power outages, internet provider interruptions, phone service provider interruptions, etc.) that directly affects the hospital's ability to submit data via the MassQEX portal or access customer helpdesk during an active quarter reporting submission cycle. Other unusual circumstances where meeting the quarterly reporting deadlines is beyond the control of the hospital may be considered (e.g.: newly enrolled Medicaid hospitals in current rate year, national public health emergency, etc.).

   c) *Non-Applicable Circumstances* **–** quality reporting exceptions do not apply to a request for resubmission to correct data files that were incomplete or incorrectly submitted during a quarter reporting cycle after the portal has closed. Data exceptions do not apply to a request for resubmitting chart record data that were incomplete, after the quarter specific timelines noted in Section 6.A of this EOHHS manual. Data exceptions are not granted for issues related to *aforementioned unusual circumstances definition or events such as* burst water pipes, temporary electrical outages, *hospital or data vendor staff turnover* as these circumstances are manageable and within the control of the hospital. Lastly, data exceptions do not apply to calendar year quarter data cycles associated with prior Acute RFA contract rate year payment requirements.

2) **Provision for Data Extension.** *A hospitals request for data extension to a specific quarter reporting deadline must meet the aforementioned extraordinary circumstances definition and timelines specified in section 5.F4.b in this manual. EOHHS considers various factors prior to granting a data extension that include, but are not limited to, the impact on current active open submission cycle and timely re-programming of portal technology specifications for prospective quarter reporting cycles.*

Should EOHHS make a determination to change a published Acute RFA quality reporting deadline that affect all hospitals, then such decision will be communicated to hospital key quality contacts using standard methods (e.g.: EOHHS business email, memos, MassQEX list-serve, Mass.Gov website posting, etc.) *including an Amendment to the Acute RFA rate year contract as applicable.*

3) **Provision for Approved Exception.** *Hospitals that are granted data exceptions for specific quarter reporting cycles must comply with the ICD population entry requirements outlined in Section 5.B of this EOHHS Manual. The hospital must enter zeros (0) to confirm that no data was reported using the online ICD entry form. Failure to enter zeros will result in non-compliant status. In addition, hospitals that are granted data exceptions should be aware that such exemptions can and likely will impact the criteria to be eligible for comparison year performance scoring and incentive payment incentives that apply to each Acute RFA rate year contract.*

4) **EOHHS Request Procedure.** Hospitals must adhere to following procedures to request a data exception for EOHHS agency consideration specific to the Acute RFA contract period:

a) **MassHealth Extraordinary Circumstance Request (MHECR) Form:** The hospital must submit a written request using the "MHECR Form" with all the following required information:

- *Type of Request* - specify the type of data exception (exemption vs. extension), the affected measures and quarter data periods indicated, reporting deadline, applicable chart records;
- *Describe Circumstance* – explain the extraordinary circumstance and date of occurrence;
- *Reason for Request* – why the quarter period data exception is needed, explain how the extraordinary event impeded the hospital not being able to meet reporting requirement.
- *Supporting Documents* – include evidence of the event occurrence (e.g.: media articles, photos, relevant web links, etc.) that is required for EOHHS MassHealth agency review. Failure to attach supporting documents will delay the review process.

The updated "MHECR Form" must be downloaded from the Mass.Gov website at: https://www.mass.gov/service-details/masshealth-acute-hospital-p4p-program-documents.

b) **Timeline to Submit Request:** *The hospital must notify EOHHS directly of intent to submit a request for a data exception within ten (10) calendar days of the date that the extraordinary circumstance event occurred. At the latest, the MHECR form packet must be received no later than 60 days from the last date of the quarter data period exception requested (e.g.: if last date of Q3 period is 9/30 then request should be submitted no later than November 30*).

Table 5-2: MassHealth Hospital ECE Request Timeline

Quarter Reporting Period	MHECR Form Submit Deadline	Acute RFA Reporting Due Date
Q1-2021 (Jan 1, 2021 – Mar 31, 2021)	May 30, 2021	Aug 13, 2021
Q2-2021 (April 1, 2021 - June 30, 2021)	Aug 30, 2021	Nov 12, 2021
Q3-2021 (July 1, 2021 – Sept 30, 2021)	Nov 29, 2021	Feb 11, 2022
Q4-2021 (Oct 1, 2021 – Dec 31, 2021)	Mar 1, 2022	May 13, 2022

c) **Submitting Request Packet:** The original packet must include a typed cover letter on hospital stationery summarizing enclosures, the completed "MHECR Form" with hospital CEO signature plus supporting documentation submitted using the following methods:

- Postal Mail: Iris Garcia-Caban, PhD, EOHHS MassHealth Acute Hospital P4P Program, 100 Hancock Street (6th floor) Quincy, MA 02171.
- Electronic Mail: Hospitals can expedite their request by scanning a copy via the EOHHS business mailbox at: Masshealthhospitalquality@mass.gov.

d) **EOHHS Notification Process:** EOHHS will acknowledge receipt of the hospitals request via phone and/or business email to the designated hospital key quality representative. The EOHHS final written decision on the request for data reporting exception will be mailed to the hospital CEO and designated key quality representative designee.

Contact EOHHS MassHealth at Masshealthhospitalquality@mass.gov if you have questions about the requirements associated with extraordinary circumstance exception request.

Section 6. Data Validation Methods

The EOHHS Medicaid Acute RFA contract requires hospitals meet data validation standards on reported measures as part of MassHealth P4P program participation The EOHHS contractor will perform all aspects of chart validation process for quality measures data reported under the MassHealth Acute Hospital RFA. All measures data 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 is accurate and reliable for calculating performance scores and incentive payments.
The EOHHS contractor will identify a sample of medical records from hospital reported patient-level measures data files submitted via the MassQEX portal for re-abstraction. Chart re-abstraction will establish the 'EOHHS Standard' for data abstraction. The hospitals original abstraction will be compared to the 'EOHHS Standard' for data abstraction based on the methods outlined throughout this section.

2) **Chart Sampling**. Data validation is performed on a random sampling of charts selected from the hospitals reported measures on Table 2.1 of this EOHHS manual as follows:

   a. *For CY2021 chart sampling requirements will be reinstated to collect a total of twelve (12) records on the reported data files that begin with Q1-2021.*

   b. *A random sample of four (4) charts will be identified for the first three quarters (Q1, Q2, and Q3) only. No charts are required on the fourth quarter data files submitted to the portal.*

3) **Chart Request Schedule**

   a. **Case List Request:** The EOHHS contractor will post the applicable quarter medical records case list request in the MassQEX secure portal for hospital users to download. Hospital key representatives and the MassQEX hospital staff users are responsible for communicating and coordinating this chart data submission requirement to their medical records department staff.

   b. **MassQEX Notice:** The EOHHS contractor will notify hospitals, via the MassQEX list-serve, when the hospital case records selected for chart validation have been posted, within **fourteen (14) calendar days** following the portal close date of the *applicable quarter reporting* deadline in Table 1.2 of this EOHHS manual.

   c. **Submission Window:** Each hospitals case list request document includes the submission deadline by which the EOHHS contractor must receive all records. Hospitals must submit copies of all medical records requested within **twenty one (21) calendar days** of the request using instructions provided in this manual.

      The EOHHS contractor will contact hospitals, by email or telephone, if any requested records that have not been received within four (4) calendar days before the submission deadline. Copies of records not received from hospitals within twenty one (21) calendar days of the EOHHS contractor request will be deemed as failing validation.

B. Chart Submission Content

All hospitals must adhere to the general chart submission content and format required for data validation purposes listed as follows.

1) Submit a copy of entire medical record for the admission/discharge dates of each member identified in the quarterly case list request.

2) Each medical record must include information on MassHealth unique identifiers for "Race and Hispanic Indicator" data elements either within the record or as a screen print from the hospital's registration system. Hospitals are responsible for communicating this data submission requirement to their medical records department staff.

3) For the CCM-2 measure: In addition to the complete medical record submitted, hospitals can submit documentation in the form of a list of document names of what comprises the transition record given to the patient or caregiver(s) or site of care for a transfer for each case selected for validation with their submission of medical records for each quarter.

4) *As of calendar year 2021 all hospitals are required to upload copies of medical records using the MassQEX secure file transfer portal method. In accordance with requirements set forth in Section 7.6 of the Acute RFA2022, paper copy submissions will no longer be accepted. Hospitals must designate a staff that will upload medical records on their behalf using the instructions that follow.*

C. Secure File Transfer Method

The EOHHS Contractor manages a secure file transfer method for hospitals to submit copies of records via the MassQEX portal. Hospitals must submit copies of medical records using the secure file transfer protocol (SFTP) methods and instructions described as follows.

1) **SFTP Description.** Hospitals will upload medical records electronically via the MassQEX portal using the Go Anywhere secure file transfer application using instructions in this EOHHS Manual. The secure file transfer method conducts transmission of the data using FIPS 140-2 compliant encryption algorithms and verified certificates while meeting Health Insurance Portability and Accountability Act of 1996 (HIPAA) standards.

2) **SFTP System Specification**
   - The preferred browser for the secure file transfer application is Google Chrome.
   - File size cannot be larger than 1 GB per upload.
   - More than one file may be transferred at a time.
   - Each file must be uploaded in Adobe PDF format only.
   - Zip files with PDF documents may be uploaded
   - Submit PDF files that have not been password protected or encrypted.
   - Uploaded files are routed to a secure directory and then deleted from the server.
   - MassQEX portal sends a confirmation e-mail to the SFTP sender for each file uploaded.
   - The SFTP feature is available 24 hours/7days during the 21 day chart submission window.

3) **Creating SFTP User Accounts**

   a) **Account Type**
      - **Account Limit**: Each hospital can designate one (1) SFTP user to upload medical record files via the secure MassQEX portal. The hospital must complete a SFTP user registration form using the instructions that follow.

      - **Limited User Access**: Each authorized SFTP user is limited to medical record uploads only and cannot access other MassQEX portal data reporting or processing functions. All SFTP users must coordinate with their authorized MassQEX registered users to obtain a copy of the quarter case list request that contains the chart submission deadline.

- **MassQEX User Note:** Active MassQEX registered users already authorized by their hospital CEO can request an SFTP user account by submitting an email to the MassQEX Help Desk at massqexhelp@telligen.com. A separate SFTP user on-line form will not be required. This arrangement can provide a backup option to the one SFTP user account limit to prevent possible interruption of access to MassQEX portal for record uploads.

b) **Completing SFTP User Account Registration Form**

- The MassQEX portal will display a SFTP user registration form under "User Resources".
- Select "Register for SFTP Account" which will display the on-line fillable form.
- Complete entry of all fields and print the document.
- User must obtain signature of the notary and hospital CEO.
- Submit signed SFTP user form to MassQEX via email or address shown at top of form.
- MassQEX will contact the user and verify submitted information against EOHHS data.
- MassQEX will create the SFTP account and send the authorized individual two emails, one with the assigned user name and another with a temporary password.
- The authorized individual user will reset the temporary password after which the account is active for file upload

4) **Preparing Records for SFTP.** The MassQEX portal will accept imaged medical record files in Adobe PDF format only. Instructions on how to prepare records for secure file transfer follows.

- Each patient record must be a separate PDF file.
- Each file requires a unique file name that includes hospital name, patient name or validation control number.
- Create a separate PDF file for each patient record. Do not combine multiple patient records into one PDF file.
- Large records must be split into multiple PDF files and add sequential numbering to files for that record (e.g.: 1 of x, 2 of x, etc.).
- If photocopying records, copy them single sided, full size pages on white paper only.
- Do not highlight, tab, or otherwise mark any information in the medical record
- Do not copy double sided pages or use color paper.
- Do not apply a password and do not encrypt the PDF file itself.
- Do not submit a combination of paper mailed and PDF files for an individual case record.

5) **SFTP Upload Procedure**

- Only individuals with an authorized SFTP user account can upload medical record files.
- A link to access SFTP will be displayed on MassQEX portal homepage.
- Clicking on the link will bring the user to the log in page.
- Enter your SFTP user-name and password; you will enter a secure folders page.
- SFTP user will open their applicable hospital folder and select "upload" for file transfer.
- The Browse dialogue box displays. After selecting the file(s), click Open.
- The upload is completed for the file(s) selected.
- The SFTP sender of the file(s) receives a confirmation e-mail for each file uploaded.
- MassQEX will review uploaded record files against the quarter specific case list request. to assess completeness of records.

6) **SFTP User Compliance**

- All record files will be date/time stamped upon submission through SFTP system. Record files received after the 5:00pm deadline date will be removed from review and kept in portal secure directory storage.

- Any records received that were not requested in the specific quarter case list will not be processed for review. Hospitals should minimize errors in transmittal of sensitive patient information whenever possible.
- Record files received that are not in the required PDF format will not be processed for review.
- Submissions using a combination of paper mailed and PDF files will not be processed for review.
- SFTP users are expected to comply with portal account maintenance procedures outlined in Section 5.D.6 of this EOHHS manual.

Contact the MassQEX Help Desk at massqexhelp@telligen.com for questions about secure file transfer procedures and medical record submission requirements.

D. 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 the following table.

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, CCM) • 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 as follows.

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 Results.** The year-end overall validation result is the aggregate of the rates for the applicable quarters of data validated per Section 6.A of this EOHHS manual. The overall validation results are computed as follows:

a) **Agreement Rate**: The overall rate is the proportion of scored items in agreement divided by the total scored items rated. Hospitals that achieve an overall agreement rate ≥ 80% for chart data submitted, are considered to have "passed" validation and rates that fall below 80% are considered to have "failed" validation. Confidence intervals are calculated to determine appropriate range for estimating if a reliability threshold has been met.

b) EOHHS will adjust the overall validation results when it has determined that the hospital has not been compliant for calendar year data completeness requirements, per Section 2.D of this Manual. When a hospital does not submit proper chart documentation applicable to calendar year, then the overall agreement rate will not be computed. This determination is based on insufficient information to conclude that the data accuracy standard has been met for the calendar year reporting.

5) **Validation Results Reports.** *In RY2022,* hospitals will receive validation reports that provide information *on the first three quarters (Q1, Q2, Q3) of* case detail results at the data element level, and comments to improve reliability of measures reporting as appropriate.

E. 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 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 timelines stated under Section 6.A.

c. Hospitals are not allowed to submit any new or additional documentation as part of the re-evaluation process. Hospitals that failed to submit copies of the medical records requested by the EOHHS Contractor within the timelines stated previously under Section 6.A are not eligible to submit a request for re-evaluation.

2) Timelines for Re-evaluation: 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. The re-evaluation process will be completed and mailed to the hospital by the EOHHS contractor within 10 business days from receipt of the hospitals request.

3) Submission Format:

a. MassHealth Hospital Data Validation Re-evaluation Request Form (MHDREV). The hospital must submit a request using the "MHDREV Form" that list the specific data element mismatches and basis for re-evaluation. The form is posted on the Mass.Gov website at: https://www.mass.gov/service-details/masshealth-acute-hospital-p4p-program-documents

b. Completed forms can be submitted to MassQEX Help Desk at massqexhelp@telligen.com:

4) Final Re-Evaluation Results. The hospital will receive a written response indicating whether any of the validation results have been adjusted and whether the overall agreement rate remains below the required threshold (≥ 80%), and 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 MHDREV 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 that 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 Perioperative Hemorrhage or Hematoma Rate
- PSI-10 Postoperative Acute Kidney Requiring Dialysis
- 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

Risk Adjustment: Yes

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

Improvement Noted As: Lower ratio. However, lower ratios do 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 Procedures

The hospitals PSI-90 measure will identify patient Medicaid claims using the following criteria.

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 in this section.

   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 evaluation data period that applies to PSI-90 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 are entered and processed by the MMIS claims data warehouse (e.g.: if period ends 9/30/2019 then run-out claims extract is as of 4/01/2020).

   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 who meet claims 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. Data Accuracy and Completeness

Each hospitals 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.

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

c) **Data File Exclusions.** The hospitals 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 based on descriptions that follow.

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 hospitals 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 hospitals 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 hospitals 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 that 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 one).

6) **Composite Index Value:** 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 following table lists measure specification and technical resources that will be used by MassQEX to compute PSI-90 measure results.

Table 7-1: AHRQ Technical Specification References

AHRQ Technical Resource	Version	Notes
Patient Safety Indicators 90 (PSI90), Patient Safety and Adverse Events Composite. Hospital-Level Indicator	AHRQ Quality Indicators ICD-10 CM/PCS Specifications *v2021, July 2021*.	Includes composite harm and volume weights
AHRQ Patient Safety Indicators Appendices	AHRQ Quality Indicators ICD-10 CM/PCS Specifications *v2021, July 2021*	Appendix A to M list detail ICD-10-CM/PCS and MS-DRG codes
AHRQ Quality Indicators SAS Software	v2021 ICD-10-CM/PCS, *July 30, 2021 (Re-released)*	Uses up to 30 ICD-10-CM Diagnosis codes and up to 30 ICD-10-CM Procedure codes Version 2021 SAS QI and WinQI software is risk adjusted using 2018 AHRQ Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID).
Patient Safety Indicator (PSI) Parameter Estimates	Version 2021 *July 2021*	Coefficient for risk adjustment
Quality Indicator User Guide: Patient Safety Indicators (PSI) Composite Measures	Version 2021 *July 2021*	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)

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 ≥ 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 which are mapped by NHSN as follows.

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" *(2021)* for detail on mapped locations and infections reporting protocols at https://www.cdc.gov/nhsn/index.html

F. 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.

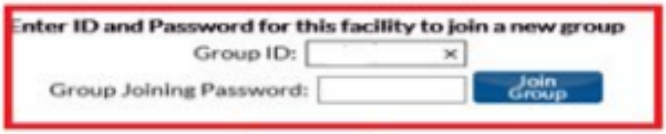
2) **MassHealth NHSN Group Administrator.** EOHHS has designated the MassQEX vendor (Telligen, Inc.) as the MassHealth NHSN "Group Administrator" to manage all aspects of data exchange and analysis of HAI measures on behalf for EOHHS MassHealth Hospital P4P Program. The EOHHS designated "MassHealth Group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

- **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 as shown.



- **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. **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/enrollment/index.html

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.

G. 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 as follows.

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 is a result of the hospitals 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 hospitals SIR result as accurate based on the dataset that was accessed and extracted by the MassQEX vendor at the freeze date previously noted in Section 8.B.3. EOHHS will not consider data to be "inaccurate" because a hospital did not make necessary corrections to their HAI data before 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 complies with adherence to NHSN warnings associated with each HAI measure period calculated.

4) **Data Completeness Assessment**

   a) **NHSN completeness met:** the hospital must meet the accurate data criteria previously described 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.

   b) **MassHealth completeness met:** the hospitals 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 Hospital DACA form entered measure exemptions for the HAI's listed and no data is available in NHSN database then HAI metrics are not computed**.**

      - **Invalid Exemption** - If the hospital enters measure exemptions for the HAI's listed but HAI data is available in the NHSN database then measures will be computed.

H. Measure Calculation Method

1) **Measurement Data Period:** EOHHS will evaluate each individual HAI measures using 24 months of data whenever feasible to generate the most reliable results. Refer to Section 1.D of this EOHHS manual for the evaluation period that applies to HAI measures analysis.

2) **NHSN Analysis Tools:** The MassHealth NHSN Group Administrator has access to the "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 previously listed in Section 8.A.

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 by CDC for each infection measure using the following formula.

   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 computed by 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 Guide to the SIR (*February 2021*)" for more details at: https://www.cdc.gov/nhsn/ps-analysis-resources/

For additional information on how to interpret the MassHealth HAI measure report refer to Appendix A-9: MassQEX Reports User Guide in this EOHHS manual. Contact the MassQEX Helpdesk at: massqexhelp@telligen.com if you have questions on your HAI report 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 listed in the following table.

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 before posting results on CMS Provider Data Catalog website. For details go to**:** https://www.hcahpsonline.org/en/quality-assurance/
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Select References

- Adult Hospital CAHPS Survey (2014), Agency for Healthcare Research Quality, Rockville, MD. Content last reviewed April 2020, 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 following procedures described apply to EOHHS collection and analysis of patient experience survey measures data required under the MassHealth Acute Hospital P4P Program.

1) **Measurement Period***:* Refer to Section 1.D. of this EOHHS manual for the evaluation data periods that apply to rate year HCAHPS measures analysis.

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

3) **Hospital Dataset.** The MassQEX vendor will access the Massachusetts hospital-level HCAHPS survey dimension measure data results from the new *CMS Provider Data Catalog* website posted on: https://data.cms.gov/provider-data/

   - Step 1 – Download dataset for Massachusetts acute hospitals from the following location: https://data.cms.gov/provider-data/dataset/dgck-syfz,
   - Step 2 - Download dataset for PPS-exempt cancer hospitals from the following location: https://data.cms.gov/provider-data/dataset/9g7e-btyt,
   - *NOTE: The above URL's host data for the current report and will no longer archive data after reporting cycles roll over*.

C. Measure Data Accuracy and Completeness

The MassHealth procedures to ensure data accuracy and completeness of nationally reported HCAHPS survey dimension data are as follows:

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. *CMS Provider Data Catalog* 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 *CMS Provider Data Catalog* website

ii. MassHealth data completeness met - the hospitals measure exemption status on the "MassHealth Hospital DACA Form" is verified against the *CMS Provider Data Catalog* files as follows:

a. Valid Exemption: If the hospital DACA form checked HCAHPS measure exemption and no data is available on *CMS Provider Data Catalog* then HCAHPS survey dimension results are not computed**.**

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

D. Measure Calculation Methods

1) *Data File Preparation*. Hospital datasets extracted from *CMS Provider Data Catalog* website 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 following table by accessing *CMS Provider Data Catalog* 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 Help Desk at massqexhelp@telligen.com for questions on MassHealth HCAHPS measure calculation and reports.