DSS Juno EHR v23

Real World Test Plan

CHPL # 15.04.04.2925.Juno.23.01.1.230620

https://www.junohealth.com/certifications

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1. Introduction

1.1 Purpose

The purpose of this ONC test plan is to document the overall testing processes for DSS Juno EHR v23 ONC Certification Edition 2015. This test plan describes the test strategy, testing activities and methods to determine DSS Juno EHR v23 meets the "Real World Testing" requirements.

1.2 Test Objective

This ONC Test plan supports:

- Meeting the regulatory test coverage of the 15 Edition ONC requirements per DSS marketed environments.
- Execution of 100% of the test cases for each certified 15 Edition ONC test component for Juno EHR v23.
- Identification of the functional components and ONC requirements that should be targeted by tests.
- Provision of time estimates of the testing efforts.
- Description of test data and environments per DSS target marketing environments.
- Listing of deliverable elements that are certified within Juno EHR v23 as required by §170.405 Real World Testing and included on the CHPL listing for Juno EHR v23.

1.3 Process and References

The processes and procedures that guide the implementation of this test plan are:

- 2015 Edition Test Methods, Test Procedures and Conformance Method
- 2015 Edition Cures Real World Testing Regulations

The references that support the implementation of this test plan are:

- Health IT Standards References and Resource Documents are listed within each criteria test case.

2. Criteria to be Tested from 2015 Edition ONC Certification

2.1 Test Inclusion

Juno EHR v23 test plan includes test scenarios for the adult inpatient setting. All data exchange and communications are secured and follow both HIPAA privacy and compliance rules. ONC technical standards have been carefully reviewed and implemented for testing.

Test cases have been created for the following criteria:

Care Coordination
§170.315(b)(1) - Transitions of Care
§170.315(b)(2) - Clinical Information and Reconciliation and Incorporation

Clinical Quality Measures (CQMs)
§ 170.315(c)(1) - Clinical Quality Measures (CQMs) — Record and Export
§ 170.315(c)(2) - Clinical Quality Measures (CQMs) — Import and Calculate
170.315(c)(3) – Clinical Quality Measures (CQMs) – Report (Cures Update)

Electronic Exchange
§ 170.315(h)(1) – Direct Project

2.2 Test Methodology

To demonstrate interoperability and conformance compliance during the Real World Testing the user, following written scripts that are based on application workflow, conducts System Testing and Integration Testing.

- Data is sent and/or received properly between systems.
- Interfaces between applications move data correctly and completely. Test both sending and receiving when interfaces are bi-directional.
- Connectivity with external organizations is accurate and complete as authorized (e.g., continuity of care record to referrals, personal health records for patients, disease management to/from health plan).
- System access is appropriate per assigned privileges.
- Data is processed accurately.
- Data is correctly populated in the user interfaces, reports, and clinical documents.
- All system components that share data or depend on other components work together properly.
- The workflows reflect actual new processes and workflows.
- Usage is defined in and follows policies and procedures. Reinforce training as applicable.

3. General Information for All Measures

Product and CHPL ID	Juno EHR v23 - CHPL ID 15.04.04.2925.Juno.23.01.1.230620
Care Setting	Inpatient Adult
Test Environment	Customer PROD environment or TEST environment that mirrors the organization's production environment.
Real-world networks /tools	• Juno CQMsolution® - for the generation of measure specific data for review, generation of the QRDA I files for consumption by CMS systems using the QualityNet Secure Portal for Hospital Quality Reporting (HQR) • Juno ConnectEHR® – for creation of CDAs, Discharge Summaries and Referral Notes • Surescripts Admin Console-for the data exchange for §170.315(b)(1) and §170.315(h)(1) if the testing is being done in a TEST environment; not needed if testing is being done in PRD environment and transmission is being done to/from other providers. Results will be captured in a pdf document through a variety of screenshots and extracts.
Standards Update	Standards updated to USCDI (Y/N): Not Applicable

4. Measures used in Overall Approach

4.1 §170.315(b)(1) Transitions of Care and §170.315(h)(1) Direct Project

Use Case	In order to ensure the continuity of care for any given patient, Juno EHR is able to receive transition of care documents from other providers for care prior to the patient's admission for review/reference. Likewise, Juno EHR is able to generate the transition of care documents to be transmitted to other providers in the ambulatory setting post discharge; or to other inpatient care settings upon patient discharge. To "view" or "manage" inbound CDAs that have not yet been associated with a specific patient, the administrative user who would normally handle that workflow requires additional permissions that are part of the HIM Module. Likewise, any given practitioner user with these additional permissions can generate a CDA and transmit it on demand using the external provider's direct email. Based on the standards for interoperability, this ensures that care can be provided based on clinical documentation that provides a complete picture and that the results of testing previously completed is available and does not necessarily need to be repeated.
Certification Criteria	§ 170.315 (b)(1) *Transition of care*— (i) *Send and receive via edge protocol*— (A) Send transition of care/referral summaries through a method that conforms to the standard specified in § 170.202(d) and that leads to such summaries being processed by a service that has implemented the standard specified in § 170.202(a); and (B) Receive transition of care/referral summaries through a method that conforms to the standard specified in § 170.202(d) from a service that has implemented the standard specified in § 170.202(a)(2). (C) XDM processing. Receive and make available the contents of a XDM package formatted in accordance with the standard adopted in § 170.205(p)(1) when the technology is also being certified using an SMTP-based edge protocol. (ii) *Validate and display* — (A) Validate C-CDA conformance – system performance. Demonstrate the ability to detect valid and invalid transition of care/referral summaries received and formatted in accordance with the standards specified in § 170.205(a)(3), (4), and (5) for the Continuity of Care Document, Referral Note, and (inpatient setting only) Discharge Summary document templates. This includes the ability to: (1) Parse each of the document types. (2) Detect errors in corresponding "document-templates," "section-templates," and "entry-templates," including invalid vocabulary standards and codes not specified in the standards adopted in § 170.205(a)(3), (4), and (5).

	(3) Identify valid document-templates and process the data elements required in the corresponding section-templates and entry-templates from the standards adopted in § 170.205(a)(3), (4), and (5). (4) Correctly interpret empty sections and null combinations. (5) Record errors encountered and allow a user through at least one of the following ways to: (i) Be notified of the errors produced. (ii) Review the errors produced. (B) *Display*. Display in human readable format the data included in transition of care/referral summaries received and formatted according to the standards specified in § 170.205(a)(3), (4), and (5). (C) *Display section views*. Allow for the individual display of each section (and the accompanying document header information) that is included in a transition of care/referral summary received and formatted in accordance with the standards adopted in § 170.205(a)(3), (4), and (5) in a manner that enables the user to: (1) Directly display only the data within a particular section; (2) Set a preference for the display order of specific sections; and (3) Set the initial quantity of sections to be displayed. (iii) *Create.* Enable a user to create a transition of care/referral summary formatted in accordance with the standard specified in § 170.205(a)(3), (4), and (5) using the Continuity of Care Document, Referral Note, and (inpatient setting only) Discharge Summary document templates that includes, at a minimum: (A) (1) The data classes expressed in the standard in § 170.213 and in accordance with § 170.205(a)(4), (a)(5), and paragraphs (b)(1)(iii)(A)(*3)(i) through (iii)* of this section, or (2) The Common Clinical Data Set in accordance with §170.205(a)(4) and paragraph (b)(1)(iii)(A)(*3*)(*i*) through (*iv*) of this section for the period until December 31, 2022, and (3) The following data classes: (i) *Assessment and plan of treatment*. In accordance with the "Assessment and Plan Section (V2)" of the standard specified in § 170.205(a)(4); or in accordance with the "Assessment Section (V2)" and "Plan of Treatment Section (V2)" of the standard specified in § 170.205(a)(4). (ii) *Goals*. In accordance with the "Goals Section" of the standard specified in § 170.205(a)(4). (iii) *Health concerns*. In accordance with the "Health Concerns Section" of the standard specified in § 170.205(a)(4). (iv) *Unique device identifier(s) for a patient's implantable device(s)*. In accordance with the "Product Instance" in the "Procedure Activity Procedure Section" of the standard specified in § 170.205(a)(4).

	(B) Encounter diagnoses. Formatted according to at least one of the following standards: (1) The standard specified in § 170.207(i). (2) At a minimum, the version of the standard specified in § 170.207(a)(4). (C) Cognitive status. (D) Functional status. (E) Ambulatory setting only. The reason for referral; and referring or transitioning provider's name and office contact information. (F) Inpatient setting only. Discharge instructions. (G) Patient matching data. First name, last name, previous name, middle name (including middle initial), suffix, date of birth, address, phone number, and sex. The following constraints apply: (1) *Date of birth constraint*. (i) The year, month and day of birth must be present for a date of birth. The technology must include a null value when the date of birth is unknown. (ii) Optional. When the hour, minute, and second are associated with a date of birth the technology must demonstrate that the correct time zone offset is included. (2) Phone number constraint. Represent phone number (home, business, cell) in accordance with the standards adopted in § 170.207(q)(1). All phone numbers must be included when multiple phone numbers are present. (3) Sex constraint. Represent sex in accordance with the standard adopted in § 170.207(n)(1). § 170.315 (h)(1) *Direct Project—* (I) *Applicability Statement for Secure Health Transport.* Able to send and receive health information in accordance with the standard specified in § 170.202(a)(2), including formatted only as a "wrapped" message. (II) *Delivery Notification in Direct.* Able to send and receive health information in accordance with the standard specified in § 170.202(e)(1). **References:** • §170.202(a)(2) Applicability Statement for Secure Health Transport, Version 1.2, August 2015 (Direct) File:Applicability Statement for Secure Health Transport v1.2.pdf - Direct Project • §170.202(d) ONC Implementation Guide for Direct Edge Protocols, Version 1.1, June 25, 2014 Implementation Guide for Direct Edge Protocols, Version 1.1, June 25, 2014 (healthit.gov) • § 170.202(e)(1) | Implementation Guide for Delivery Notification in Direct, Version 1.0, June 29, 2012 170.202(e)(1) | Interoperability Standards Advisory (ISA) (healthit.gov)

	• § 170.205(a)(4) HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use Release 2.1, August 2015
Justification	Each of the three types of Transition of Care documents has its own specific content requirements. For the inpatient care setting, the C-CDA types to be tested include: • Continuity of Care • Referral Note (receive only) • Discharge Summary Through use of multiple scenarios for a given patient, all components of the §170.315(b)(1) Transitions of Care and §170.315(h)(1) Direct Project will be tested i.e., • Receive health information in accordance with the standard specified in §170.202(a)(2) in the form of a transition of care/referral summary for a given patient that was sent in accordance with a method that conforms to the standard specified in § 170.202(d) and process it such that it is viewable within the patient's EHR. *(Note: The incorporation of some of the data elements will be tested separately as part of 170.315(b)(2).)* • Display the transition of care/referral summary received in a manner in accordance with 170.315(b)(1)(ii)(C) which allows the user to view a specific section, set the # of sections to display and rearrange the order of display. • Create a transition of care /discharge summary that can be displayed in human readable format using the appropriate template that includes at a minimum: ➢ Patient matching data, i.e., First name, last name, previous name, middle name (including middle initial), suffix, date of birth, address, phone number, and sex ➢ Common Clinical Data Set items (see the Test Data section for details) ➢ Assessment and plan of treatment sections, either together or separately ➢ Goals ➢ Health Concerns ➢ Unique device identifier(s) for a patient's implantable device(s) ➢ Encounter diagnosis ➢ Cognitive status ➢ Functional status ➢ Discharge instructions • Transmit the transition of care/discharge summary in accordance with the standard specified in §170.202(a)(2) to an 'address' provided for use for the specific patient at a time to be specified. *(Note: The address would allow the C-CDA to be transmitted to other providers in the ambulatory setting post discharge or to other inpatient care settings upon patient discharge.)*
Test Methodology	The content of transition of care documents that will be received from other EHRs will vary as the data will be unique to the specific patient. In order to evaluate each

	part of the criteria, the testing will be split into 4 parts, i.e., creation, receipt, view/display and transmission. • Creation of documents is automatic at the time of discharge; however, the testing should include on demand generation of documents. • In the event the facility has not received any inbound transition of care documents during the testing period, a reference xml file is provided by the vendor to utilize for the receipt and view/display. Patient demographic must exist to specifically match the patient for the xml files, whether received from elsewhere or provided by the vendor for import and processing. The xml files provided for use, if necessary, is "170.315b2 Turner CCD_reconciliation.xml". • Transmission of documents is accomplished using Surescripts; however, the testing should include on demand generation/transmission of documents using a provider's direct email. On demand is done using the Document Builder in the HIM Module. Although Juno v23 is appropriate for an enterprise organization with one or more hospitals for inpatient care, the 'address' for the organization utilized for the inbound and outbound messages will be the same. The size of the organization in terms of the number of beds, the number of unique inpatient locations or the number of providers does not impact functionality.
Test Data	Given that the Continuum of Care, Referral Note and Discharge Summary CDAs are generated automatically on discharge from the inpatient setting, data included in each will be based on the contain entered for a given patient. The CCD and the Discharge Summary are generated on all patients, but the Referral Note is only generated on patients who have a consult (referral) to an external provider. For testing of creation and transmission of transition of care documents, data entered in the EHR will vary by patient. At a minimum, this data will include the following (if entered on a given patient): ➢ Common Clinical Data Set items ❖ Patient Name ❖ Sex ❖ Date of Birth ❖ Race and Ethnicity ❖ Preferred Language ❖ Smoking Status ❖ Medication Allergies ❖ Medications ❖ Problems ❖ Procedures ❖ Immunizations ❖ Vital Signs ❖ Laboratory Tests and Results ❖ Care Team Members ❖ Unique Device Identifiers ❖ Assessment and plan of treatment sections, either together or separately ❖ Goals ❖ Health Concerns

	➢ Encounter diagnosis ➢ Cognitive status ➢ Functional status ➢ Discharge instructions • For testing the receipt of transition of care documents from other providers and view/display, patient demographics must exist to specifically match the patient for the xml files, whether received from elsewhere or provided by the vendor for import and processing. The xml file provided for use, if necessary, is "170.315b2 Turner CCD_reconciliation.xml". See Appendix A for the details for Test Data Entry in the event data from a client PROD environment is not available.
Expected Outcome(s)	Testing is organized according to the clinical workflow with the criteria being tested grouped according to the specific scenario. • Continuity of Care and Discharge Summary CDAs are automatically generated upon patient discharge. Referral Note CDAs are only generated if the patient has an External Consult. • Each of the CDA documents received should be accessible in the HIM module and should be viewable. Content will be based on data for the specific patient. • Transmission of the CDA documents is done using Surescripts. Testing is organized according to the clinical workflow with the criteria being tested grouped according to the specific measure data. The steps for the testing and the Expected Outcome for each step are detailed below. In general, the Interoperability and electronic health information exchanged is accomplished successfully without errors or message failures during the exchange. See attached Appendix A for the step by step details and Expected Outcomes.
Measure	Successful creation, display and transmission of the C-CDA for transition of care/referral summaries, i.e., Continuity of Care Document, Referral Note and Discharge Summary, in the format that conforms to the standard specified in § 170.202(d) with no errors detected during the validation process. The measure includes four parts, i.e., • **Measure b1h1a**: % C-CDAs received that can be viewed in human readable format as detailed in § 170.205(a)(3), (4), and (5) using the using the Continuity of Care Document, Referral Note, and Discharge Summary document templates that allow the user to view a specific section, set the # of sections to display and rearrange the order of the display *Numerator= # C-CDAs and/or Discharge Summaries with expected results* *Denominator = # C-CDAs and/or Discharge Summaries received & viewed* • **Measure b1h1b:** % discharges that include creation of the data for Discharge Summary document type *Numerator= # Discharge Summaries created for discharges in designated period*

	Denominator = # discharges in designated period • **Measure b1h1c:** % discharges that include creation of the data for Discharge Summary document type that can be viewed in human readable format as detailed in § 170.205(a)(3), (4), and (5) using the using the Discharge Summary document templates that allow the user to view a specific section, set the # of sections to display and rearrange the order of the display. *Numerator= # Discharge Summaries with appropriate content that is viewable in human readable format* *Denominator = # discharges reviewed in designated period* *NOTE: Sample size will vary based on activity but should include a minimum of 25 encounters for a given year; however, sample size may need to be larger if issues are identified.* • **Measure b1h1d:** % scenarios that include creation and transmission of the data for Continuity of Care Document and Discharge Summary document types through SMTP protocol to an appropriate direct address in accordance with § 170.202(d) based on the date/time specified and that leads to such summaries being processed by a service that has implemented the standard specified in § 170.202(a) *Numerator= # C-CDAs and/or Discharge Summaries transmitted without errors* *Denominator = # C-CDAs and/or Discharge Summaries created and transmitted* *Exclusions: Error due to inappropriate direct addresses*

4.2 §170.315(b)(2) Clinical Information Reconciliation and Incorporation

Use Case	In order to ensure the continuity of care for any given patient, Juno EHR is able to receive transition of care documents from other providers for care prior to the patient's admission for review/reference. These documents can then be utilized to compare the data for the patient's active medications, allergies and intolerances and problem list with those currently documented in the EHR, reconcile the discordant data, and then incorporate the reconciled list into the EHR. To "view" or "manage" inbound CDAs that have not yet been associated with a specific patient, the administrative user who would normally handle that workflow requires additional permissions that are part of the HIM Module. The provider will be able to view these external documents associated with a given patient in the Document Viewer by selecting External Records. The display will include all external documents received and associated with the specific patient and can view the specific document and reconcile the information for problems, medications and allergies with the data that is already in Juno. Once data is reviewed and reconciled by the provider, a Continuity of Care document can then be generated to include the data that was reconciled and

	incorporated for subsequent transmission to other providers in the ambulatory setting post discharge or to other inpatient care settings upon patient discharge. Any given practitioner user with the additional HIM permissions can generate a CDA and transmit it on demand using the external provider's direct email; however, this will generally be done by the HIM department. Based on the standards for interoperability, this ensures that care can be provided based on clinical documentation that provides a complete picture of the patient and allows the clinical staff to be aware of any discordances.
Certification Criteria	§ 170.315 (b)(2) *Clinical information and reconciliation and incorporation*— (i) *General requirements*. Paragraphs (b)(2)(ii) and (iii) of this section must be completed based on the receipt of a transition of care/referral summary formatted in accordance with the standards adopted in § 170.205(a)(3) through (5) using the Continuity of Care Document, Referral Note, and (inpatient setting only) Discharge Summary document templates on and after December 31, 2022. (ii) *Correct patient.* Upon receipt of a transition of care/referral summary formatted according to the standards adopted § 170.205(a)(3) through (5), technology must be able to demonstrate that the transition of care/referral summary received can be properly matched to the correct patient. (iii) *Reconciliation.* Enable a user to reconcile the data that represent a patient's active medication list, allergies and intolerance list, and problem list as follows. For each list type: (A) Simultaneously display (i.e., in a single view) the data from at least two sources in a manner that allows a user to view the data and their attributes, which must include, at a minimum, the source and last modification date. (B) Enable a user to create a single reconciled list of each of the following: Medications; Allergies and Intolerances; and problems. (C) Enable a user to review and validate the accuracy of a final set of data. (D) Upon a user's confirmation, automatically update the list, and incorporate the following data expressed according to the specified standard(s) on and after December 31, 2022: (1) *Medications.* At a minimum, the version of the standard specified in § 170.213; (2) *Allergies and intolerance.* At a minimum, the version of the standard specified in § 170.213; and (3) *Problems.* At a minimum, the version of the standard specified in § 170.213. (iv) *System verification.* Based on the data reconciled and incorporated, the technology must be able to create a file formatted according to the standard specified in § 170.205(a)(4) using the Continuity of Care Document template and the standard specified in § 170.205(a)(5) on and after December 31, 2022. **References:** • 170.205(a)(3) HL7 Implementation Guide for CDA® Release 2: IHE Health Story Consolidation, DSTU Release 1.1 (US Realm) Draft Standard for Trial Use July 2012

	170.205(a)(3) | Interoperability Standards Advisory (ISA) (healthit.gov) • § 170.205(a)(4) | HL7 Implementation Guide for CDA® Release 2: Consolidated CDA Templates for Clinical Notes (US Realm), Draft Standard for Trial Use, Volume 1 - Introductory Material, Release 2.1, August 2015 170.205(a)(4) | Interoperability Standards Advisory (ISA) (healthit.gov) • § 170.205(a)(5) | HL7® CDA R2 Implementation Guide: C-CDA Templates for Clinical Notes R2.1 Companion Guide, Release 2-US Realm, October 2019 170.205(a)(5) | Interoperability Standards Advisory (ISA) (healthit.gov)
Justification	Once testing for the §170.315(b)(1) Transitions of Care criteria has been completed, the xml documents will be available for importing. Each of the three types of Transition of Care documents, i.e., Continuity of Care, Referral Note and Discharge Summary, has its own specific content requirements; however, all contain medications, allergies and problems which need to be incorporated. All of the components of the §170.315(b)(1) Clinical information and reconciliation will be tested, i.e., • Receipt of a transition of care/referral summary for a given patient *(NOTE: This was tested separately as part of §170.315(b)(1).);* • Matching the document to the correct patient in the EHR in accordance with §170.205(a)(3) through (5). • Reconciliation of the data for the patient's active medication list, allergies, and problem list, including: ➢ Display of the data from both the EHR and the C-CDA document to allow a comparison of each set of data, ➢ Creation of a single reconciled list for each set of data ➢ Review and validation of the final reconciled list for each set of data ➢ Automatically update the list in the EHR based on the final reconciled list for each data set
Test Methodology	The content of transition of care documents received from other EHRs will vary as the data will be unique to the specific patient. In the event the facility has not received any inbound transition of care documents during the testing period, a reference xml file is provided by the vendor to utilize for the receipt and view/display. Patient demographic must exist to specifically match the patient for the xml files, whether received from elsewhere or provided by the vendor for import and processing. The xml files provided for use, if necessary, is "170.315b2 Turner CCD_reconciliation.xml". Although Juno v23 is appropriate for an enterprise organization with one or more hospitals for inpatient care, the 'address' for the organization utilized for the inbound and outbound messages will be the same. The size of the organization in terms of the number of beds, the number of unique inpatient locations or the number of providers does not impact functionality.
Test Data	Given that the Continuum of Care, Referral Note and Discharge Summary CDAs could be received from other facilities/EHRs, data included in each will vary and be based on the data entered for a given patient.

	Data will be entered into the EHR as part of testing for §170.315(b)(1) for each of the patients to be tested in the reconciliation. The patient demographic data for these patients must match the data included in the xml files. At a minimum, this data will include the key items from the Common Clinical Data Set (CCDS) that are needed for testing this specific criterion, i.e., ❖ Patient Name ❖ Sex ❖ Date of Birth ❖ Race and Ethnicity ❖ Preferred Language ❖ Medication Allergies ❖ Medications ❖ Problems In the event no CDAs are available for use in testing, a vendor supplied xml file is provided for use, if necessary, i.e., "170.315b2 Turner CCD_reconciliation.xml". Testing associated with b1 above can also be utilized for b2. See Appendix B for the details for Test Data Entry. NOTE: Additional clinical data for the remaining items in the CCDS is not needed in the EHR as this reconciliation process is generally done at the beginning of the patient's inpatient admission, preferably before medication orders are entered so that the final reconciled list can be utilized in order checking.
Expected Outcomes	Testing is organized according to the clinical workflow, i.e., • receipt and reconciliation of any transition of care/referral summaries, i.e., Continuity of Care Document, Referral Note and Discharge Summary received; and • creation of a Continuity of Care C-CDA that includes the data reconciled and incorporated in accordance with § 170.205(a)(5). See attached Appendix B for the step by step details and Expected Outcomes.
Measure	Successful receipt and import of the C-CDAs for transition of care/referral summaries, i.e., Continuity of Care Document, Referral Note and Discharge Summary, such that the data for the active medications, allergies/intolerances and problems can be displayed for comparison, reconciliation and incorporation and a Continuity of Care document created after the incorporation contains the reconciled data. The measure includes two parts, i.e., **Measure b2a** • % scenarios that include receipt of the Continuity of Care Document, Referral Note, and/or Discharge Summary document templates that allow the user to view the data in a format that allows comparison of each set of data, creation of a reconciled list and updating the list in the EHR based on the final reconciled list for each data set *Numerator= # data sets with expected results* *Denominator = # data sets reviewed and reconciled* *Data sets=active meds, allergies and intolerances, problem list*

	Measure b2b • % Continuity of Care documents created after the incorporation that contains the final list of reconciled data for each data set *Numerator= # CCD created with expected results for each of the three data sets* *Denominator = # CCDs generated* *Data sets=active meds, allergies and intolerances, problem list*

4.3 §170.315(c)(1) Clinical Quality Measures (CQMs) – Record and Export and §170.315 and (c)(3) Clinical Quality Measures (CQMs) – Report

Use Case	Juno EHR is appropriate for an organization with one or more hospitals for inpatient care. To ensure the capture of data in real time, configuration of the clinical documentation data is done in a manner that allows the association of codes with the data at the time of the data storage for the various data elements. This includes the demographic data as well as the data entered in the various modules within Juno including Allergies, Diagnoses, Vitals, Orders, Bar Code Medication Administration (BCMA), Clinical Note Templates (CNTs) and Laboratory Tests. Data required for CQM exclusions or exceptions must also be codified entries, which may include specific terms as defined by each CQM, or may include codified expressions of "patient reason," "system reason," or "medical reason." In general, the capture of the data is done as part of the usual clinical workflow utilized by physicians and nursing staff. Based on the scope of the facility, on an annual basis, the facility will determine which EH Clinical Quality Measures they wish to submit data. CQMsolution® is a user-friendly, browser-based application for calculating, displaying, and generating clinical quality measure output. Users can initiate quality measure reports, view patient-level results, analyze underlying data, and filter data on demographic variables. If the facility chooses to have a DHIT license, DHIT offers Data Submission Services (DSV) to submit to The Joint Commission (TJC) and to Quality Net for HQR. The Hospital Quality Reporting (HQR) Secure Portal is the only CMS-approved website for secure communications and health care quality data exchange between quality improvement organizations, hospitals, physician offices, nursing homes, end-stage renal disease networks and facilities, and data vendors.
Certification Criteria	§170.315(c)(1) *Clinical quality measures—record and export—* (i) *Record.* For each and every CQM for which the technology is presented for certification, the technology must be able to record all of the data that would be necessary to calculate each CQM. Data required for CQM exclusions or exceptions must be codified entries, which may include specific terms as defined by each CQM, or may include codified expressions of "patient reason," "system reason," or "medical reason."

	(ii) *Export.* A user must be able to export a data file at any time the user chooses and without subsequent developer assistance to operate: a. Formatted in accordance with the standard specified in §170.205(h)(2); b. Ranging from one to multiple patients; and c. That includes all of the data captured for each and every CQM to which technology was certified under paragraph (c)(1)(i) of this section. §170.315(c)(3) *Clinical quality measures—report—* Enable a user to electronically create a data file for transmission of clinical quality measurement data: (i) In accordance with the applicable implementation specifications specified by the CMS implementation guides for Quality Reporting Document Architecture (QRDA), category I, for inpatient measures in § 170.205(h)(3) and CMS implementation guide for QRDA, category III for ambulatory measures in § 170.205 (k)(3); or (ii) In accordance with the standards specified in § 170.205(h)(2) and § 170.205(k)(1) and (2) for the period until December 31, 2022. **References:** • §170.205(h)(3) CMS Implementation Guide for Quality Reporting Document Architecture: Category I; Hospital Quality Reporting Implementation Guide for 2020 2020 CMS QRDA HQR IG (healthit.gov) • §170.205(k)(3) CMS Implementation Guide for Quality Reporting Document Architecture: Category III; Eligible Clinicians and Eligible Professional Programs Implementation Guide for 2020
Justification	Electronic Clinical Quality Measures (eCQMs) are specific to either the inpatient care setting or the ambulatory setting; however, the approach to data capture and calculations is the same. Although the functionality supports clinical documentation for ambulatory setting associated with the inpatient facility, eCQM testing will be limited to EH measures for inpatients and will not include any EP measures. An overlap exists between the CMS eCQMs and the Joint Commission ORYX Measures and in both cases, the organization selects which specific measures they report data for the subsequent year, given the expectation for quarterly reporting. Reporting is done retrospectively in accordance with established deadlines with a 4 month delay, allowing sufficient time for the computations of the LOS after discharge to exclude patients with LOS greater than 120 days. For example, Hospital Quality Reporting data for Q2 2023 (Apr 1 – June 30, 2023) must be submitted by Nov 1, 2023. Through the use of a single eCQM, i.e., CMS 108v11 Venous Thromboembolism Prophylaxis/ORYX VTE-1, and standard out-of-the box clinical documentation

	accordance with the clinical workflow for the data capture functionality, all of the components of the §170.315(c)(1) Clinical quality measures (CQMs)-record and export will be tested as well as §170.315(c)(3) Clinical quality measures (CQMs)-report, i.e., • record encounter data that includes the Taxpayer Identification Number (TIN) and National Provider Identifier (NPI), Provider Type and Practice Site Address for the provider as well as the Insurance, Age, Sex, Race and Ethnicity and Problem List for the patient; • record codified clinical data as defined for the specific measure utilizing the core functionality of the various modules within Computerized Patient Record System (vxCPRS) including Allergies, Diagnoses, Vitals, Orders, Bar Code Medication Administration (BCMA), Clinical Note Templates (CNTs), Laboratory Tests and Procedures; • utilize the DHIT CQMsolution® software to generate measure specific data for review; and • generate data files and successfully export the QRDA I data file(s) for one or more patients and one or more measures on demand or for consumption by CMS systems using the QualityNet Secure Portal for submissions for Hospital Quality Reporting (HQR);
Test Methodology	Juno EHR is appropriate for an organization with one or more hospitals for inpatient care such that each hospital has their own Taxpayer Identification Number (TIN), as well as their own Medicare and Medicaid numbers. In the event an organization has more than one inpatient hospital, the data included in the report would be split by TIN. The size of the organization in terms of the number of beds or the number of unique inpatient locations does not impact functionality. DHIT CQMsolution® is utilized for (1) calculation of the measures, (2) viewing the data in a Dashboard format or a patient drill-down screen, and (3) generation of the QRDA I files needed for submission to Joint Commission, CMS or other regulatory bodies.
Test Data	Data will be entered into Juno EHR as part of ongoing clinical workflow; however, in order to ensure that the data required for the measures is captured in a manner that it will be included in the abstract for subsequent analysis/compilation, it must be entered using specific defined processes. See Appendix C for the details for Test Data and Test Script Prerequisites. NOTE: The details included in Appendix C provides an example of data foe eCQM CMS 108v11 and usage of the prerequisite configuration for orderables and note templates.
Expected Outcomes	Successful compilation of the data for the selected EH eCQMs compiled by DHIT in CQMSolution® in a format that can be utilized for subsequent transmission to the designated site (Joint Commission or CMS).
Measure	The measure includes three parts, i.e., • **Measure c1a:** % patients who are discharged that are included in the Measure 108 report

	Numerator= # patients included on the Measure 108 report with data evaluated *(1) Initial Patient Population,* *(2) Numerator* *(3) Denominator,* *(4) Denominator Exception (None for this measure) and* *(5) Denominator Exclusion,* *Denominator = # patients who are discharged for report period* • **Measure c1b:** % reports viewed that include the accurate data calculated for the measure and for each of the patients detailed on the report *Numerator= # patients with expected results based on data entry for the specific patient* *(1) Initial Patient Population,* *(2) Numerator* *(3) Denominator,* *(4) Denominator Exception (None for this measure) and* *(5) Denominator Exclusion,* *Denominator = # patients reviewed prior to transmission/uploading* • **Measure c1c**: % valid QRDA I files generated using CQMSolution® for consumption by Joint Commission or CMS systems, including for Hospital Quality Reporting (HQR) *Numerator= # valid QRDA I files* *Denominator = # QRDA I files requested for subsequent transmission/uploading*

4.4 §170.315(c)(2) Clinical quality measures (CQMs) – Import and Calculate

Use Case	Although it is appropriate for organizations to receive and import C-CDA documents and reconcile/integrate specific data for patients (active medications, allergies and intolerances, and problems) to be used in providing appropriate clinical care, no scenario exists where a provider would be receiving a QRDA file and incorporating data into the patient's EHR and then subsequently utilize that data documenting care provided elsewhere for the calculation of the clinical quality measures. Only clinical documentation for care provided at the organization should be included. If clinical data for care or testing provided at other facilities is appropriate for inclusion, it would be manually entered through the usual clinical documentation workflow after review by the appropriate provider and not imported from a QRDA file.
Certification Criteria	§170.315 (c)(2) Clinical quality measures—import and calculate— (i) Import. Enable a user to import a data file in accordance with the standard specified in §170.205(h)(2) for one or multiple patients and use such data to perform the capability specified in paragraph (c)(2)(ii) of this section. A user must be able to execute this capability at any time the user chooses and without subsequent developer assistance to operate. (ii) Calculate each and every clinical quality measure for which it is presented for certification. **References:** • Clinical quality measures (CQMs) — import and calculate | HealthIT.gov • 170.205(h)(2) HL7 CDA Release 2 Implementation Guide for: Quality Reporting Document Architecture-Category 1 (QRDA I); Release 1, DTSU Release 3 (US Realm), Volume 1
Justification	QRDA I files are utilized during certification of Juno v23 contain data for patients not under the care of the organization executing the Real World Testing Plan. No use case exists for this functionality.
Test Methodology	N/A
Test Data	N/A
Expected Outcomes	N/A
Measure	N/A

5. Schedule of Key Milestones

Key Milestone	Date/Timeframe
Release of documentation for the Real World Testing to be provided to authorized representatives and providers running Juno EHR v23. This includes surveys, specific instructions on what to look for, how to record issues encountered, and Customer Agreements.	December 1, 2023
Begin collection of information as laid out by the plan.	March 1, 2024
Meet with previously identified providers and authorized representatives to ensure that Real World Testing protocols are effective.	March 31, 2024
Follow-up with providers and authorized representatives to understand any issues arising with the data collection.	Quarterly, 2024
Data collection and review.	Quarterly, 2024
End of Real World Testing period/final collection of all data for analysis.	January 2025
Analysis and report creation.	January 15, 2025
Submit Real World Testing report to ACB (per their instructions).	February 1, 2025

6. Attestation

This Real World Test plan is complete with all required elements, including measures that address all certification criteria and care settings. All information in this plan is up to date and fully addresses the Health IT developer's Real World Testing Requirements.

Authorized Representative Name and Title:	Hilary Kloska Director, Clinical Content	Authorized Representative Phone:	561-402-9621
Authorized Representative Signature:	Hilary Kloska	Date Signed:	9/13/2023

7. Appendices

7.1 Appendix A §170.315(b)(1) Transitions of Care and §170.315(h)(1) Direct Project

7.1.1 Criteria

- §170.315(b)(1) Transitions of Care and
- §170.315(h)(1) Direct Project

7.1.2 Test Data Entry

- Test data entry would apply ONLY to the event the facility has not received any inbound transition of care documents during the testing period and a reference xml file provided by the vendor is to be utilized for the receipt and view/display. Patient demographic must exist to specifically match the patient for the xml files, whether received from elsewhere or provided by the vendor for import and processing. The xml files provided for use, if necessary, is "170.315b2 Turner CCD_reconciliation.xml". It is available at https://ett.healthit.gov/ett/#/validators/ccdar3 which can be accessed using the following steps:
    - Navigate to https://ett.healthit.gov/ett/#/direct/certdiscovery/dcdt2
    - Select ETT Home from the top navigation bar
    - Select Message Validators
    - Select C-CDA R2.1 from the top navigation bar
    - Then navigate to the middle section "To validate your C-CDA with ONC 2015 Edition".
    - Under step 1, select "Receiver"
    - Under step 2, select 170.315_b2_CIRI_Inp from the drop down
    - Under step 3, select 170.315_b2_ciri_r21_sample1_ccd_v11.xml from the drop down
    - Then select "Download" and your file will be downloaded.
- No data entry is routinely needed for creation and transmission functionality as Discharge Summary CDAs are generated on all discharges.

7.1.3 Test Script Prerequisites

(1) The patient demographic data for these patients must match the data included in the xml file. In addition, this data can then be used for the §170.315(b)(2) scenarios for reconciliation in Appendix B if necessary. Manual data entry for Scenario #1 if using the vendor supplied xml for:

- Susan Turner

NOTE: No data is required for Problems, Allergies or Medications. If entered, it will be utilized as part of the testing for b2.

Patient Name:	First Name: Susan	Middle Name: Jones	Last Name: Turner
			Alias: Susy Turner
Sex:	Female (F)	DOB:	08/01/1970
Race:	White (2106-3)	Ethnicity:	Not Hispanic or Latino (2186-5)
More Granular Race Code:	2108-9 (White European)	Preferred Language	

Home Address:	1011 Amber Drive Beaverton, OR 97006				
Telephone Number:	Mobile: 555-335-1234		Home: 555-336-1544		
Problems	***Problem Name***	***SNOMED CT Code***		***Health Concern Status***	***Start Date End Date***
	Fever	386661006		Active	6/22/2015
Medication Allergies:	***Allergy Substance***	***Reaction***	***Severity***	***Status***	***Date***
	Penicillin G benzathine RxNorm 7980	Hives SNOMED -CT 247472004	Moderate	Active	5/01/1980
Medications:	***Medication***	***Dose***	***Frequency***	***Route***	***Start Date End Date***
	Tylenol 500 mg RxNorm 209459		PRN	Oral	6/22/2015
	Ceftriaxone 100 mg/ml RxNorm 309090		BID	Intravenous	6/22/2015

(2) The tester must be assigned to the appropriate role, with prescriptive authority, and the environment must be configured appropriately to execute the scenario.

(3) Vendor supplied xml files to be used for the import in b1 to receive and validate and then for the reconciliation in b2

- 170.315b2 Turner CCD_reconciliation.xml

NOTE: If vendor supplied xml files need to be utilized, an email with the attached file will need to be sent to the direct address of the tester.

7.1.4 Measure Data

Measure b1h1a:

- % C-CDAs received that can be viewed in human readable format as detailed in § 170.205(a)(3), (4), and (5) using the using the Continuity of Care Document, Referral Note, and Discharge Summary document templates that allow the user to view a specific section, set the # of sections to display and rearrange the order of the display

Numerator= # C-CDAs and/or Discharge Summaries with expected results
Denominator = # C-CDAs and/or Discharge Summaries received & viewed

Report:

- Numerator data is based on the results of the visual inspections/validation that the expected functionality can be confirmed.
- Denominator data is based on the number of documents that were received and viewed before being associated with a specific patient

Testing is focused on the receipt via Direct message and validation of the Continuity of Care C-CDAs and/or Discharge Summary CDAs such that the document can be viewed in human readable format and the user can view a specific section, set the # of sections to display and rearrange the order of the display.

Step	Steps to View, Parse and Import incoming CCD.xml	Expected Outcome
Step 1	Select External Records from the Left Nav in the HIM Module	5 Tabs will appear under the External Mail, i.e., Inbox, Outbox, Drafts, Sent and Deleted with Inbox showing as the default.
Step 2	Review the listing of emails received with attachments to determine which ones might have CDAs that need to be associated with a patient. Click on the email to open it.	Subject, Body of email and attachment will be displayed.
Step 3	In the dropdown for the attachment, select View to open the human readable html and view the contents of the document. User can Expand All of Collapse All to do a quick review of the content of the document if so desired before associating it with the patient for the provider's review/action.	The selection in the Left Nav will switch to Document Builder and the html will open with the patient header info in the body of the document and the content reflected in the Table of Contents on the right nav.
Step 4	Click on a specific item in the Table of Contents to navigate to that item or drag and drop a specific item within the Table of Contents to rearrange the content prior to associating it with the specific patient.	Specific section selected will be displayed. Content will be rearranged based on actions taken within the TOC.

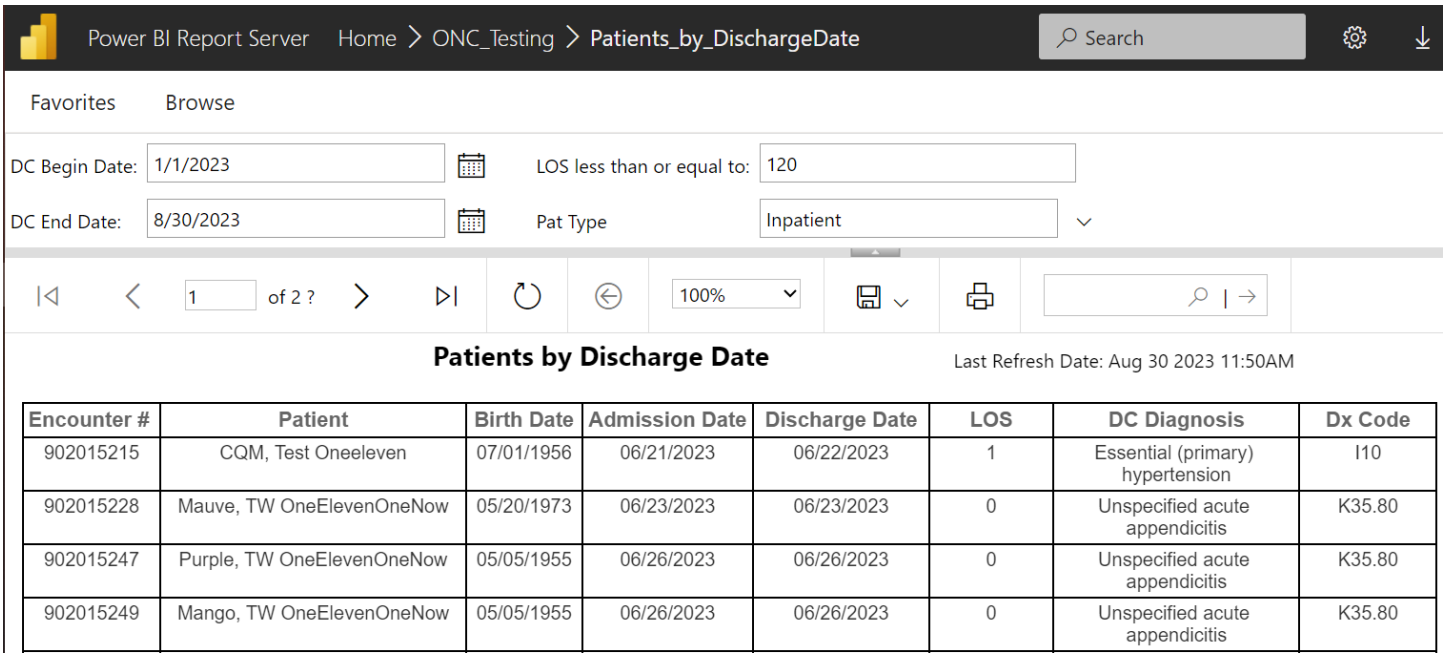
Step 5	Record the # C-CDAs received/reviewed with the expected content as the numerator and the # C-CDAs received/reviewed as the denominator	

Measure b1h1b:

- % discharges that include creation of the data for Discharge Summary document type

Numerator= # Discharge Summaries created for discharges in designated period
Denominator = # discharges in designated period

Report: Patients by Discharge Date



Patients by Discharge Date

Last Refresh Date: Aug 30 2023 11:50AM

Encounter #	Patient	Birth Date	Admission Date	Discharge Date	LOS	DC Diagnosis	Dx Code
902015215	CQM, Test Oneeleven	07/01/1956	06/21/2023	06/22/2023	1	Essential (primary) hypertension	I10
902015228	Mauve, TW OneElevenOneNow	05/20/1973	06/23/2023	06/23/2023	0	Unspecified acute appendicitis	K35.80
902015247	Purple, TW OneElevenOneNow	05/05/1955	06/26/2023	06/26/2023	0	Unspecified acute appendicitis	K35.80
902015249	Mango, TW OneElevenOneNow	05/05/1955	06/26/2023	06/26/2023	0	Unspecified acute appendicitis	K35.80

Step	Steps to verify CDA creation	Expected Outcome
Step 1	Select Document Builder from the Left Nav in the HIM Module	Patient Search window opens
Step 2	Enter the name of the patient to be verified/select the patient. (NOTE: This has to be done one patient at a time.)	Display of listing of Historical Documents
Step 3	Set filter to Discharge Summary	Display of Discharge Summary CDAs that were created upon patient discharge to include the Encounter date range and the date/time the CDA was created.

Step 4	Compare the patients in the report of Patients by Discharge Date to those reviewed/verified to validate a Discharge Summary CCD exists for each discharge.	Record the # created/verified as the numerator for the measure-> should be a 1:1 match with the # discharges

Measure b1h1c:

- % discharges that include creation of the data for Discharge Summary document type that can be viewed in human readable format as detailed in § 170.205(a)(3), (4), and (5) using the using the Discharge Summary document templates that allow the user to view a specific section, set the # of sections to display and rearrange the order of the display

Numerator= # Discharge Summaries with appropriate content that is viewable in human readable format
Denominator = # discharges reviewed in designated period
NOTE: Sample size will vary based on activity, but should include a minimum of 25 encounters for a given year; however, sample size may need to be larger if issues are identified.

Report:

- Denominator data can be obtained directly from the report for Measure b1h1b to randomly select specific cases for review.
  NOTE: if not all of the documents received in the period specified for the data sample for the quarter are reviewed, the denominator should be adjusted to reflect the # reviewed. If issues are identified during the review, a larger sample size may be needed to increase the confidence level of the results.
- Numerator data is based on the results of the visual inspections/validation that the expected functionality can be confirmed.

Step	Steps to verify CDA creation	Expected Outcome
Step 1	Select Document Builder from the Left Nav in the HIM Module	Patient Search window opens
Step 2	Enter the name of the patient to be verified/select the patient. (NOTE: This has to be done one patient at a time.)	Display of listing of Historical Documents
Step 3	Set filter to Discharge Summary (or Referral Note, etc. as deemed appropriate for data needed)	Display of Discharge Summary CDAs (or Referral Notes based on the filter applied) that were created upon patient discharge to include the Encounter date

		range and the date/time the CDA was created.
Step 4	Click on the name of the document, i.e., Discharge Summary to open the human readable html.	Human readable html opens and includes a Table of Contents that allows user to navigate to a specific section.
Step 5	Click on an item in the Table of Contents to view that specific entry.	The view of the html will change to display the specific element selected.
Step 6	Compare the data in the human readable html to the content in the patient's EHR for that specific encounter.	Record the # as the numerator for the measure-> should be a 1:1 match

Measure b1h1d:

- % scenarios that include creation and transmission of the data for Continuity of Care Document and Discharge Summary document types through SMTP protocol to an appropriate direct address in accordance with § 170.202(d) based on the date/time specified and that leads to such summaries being processed by a service that has implemented the standard specified in § 170.202(a)

Numerator= # C-CDAs and/or Discharge Summaries transmitted without errors
Denominator = # C-CDAs and/or Discharge Summaries created and transmitted
Exclusions: Error due to inappropriate direct addresses

Referral Note CDAs and Discharge Summary CDAs are created automatically upon discharge and are viewable within Juno in the HIM Module. The CDAs can then be selected for transmission using Secure Mail and a direct address. Data can be obtained using either of two options depending on available data for the facility.

Option 1: Review of data for Discharge Summaries – to be used in the event no external consults/referrals are generated during the reporting period.

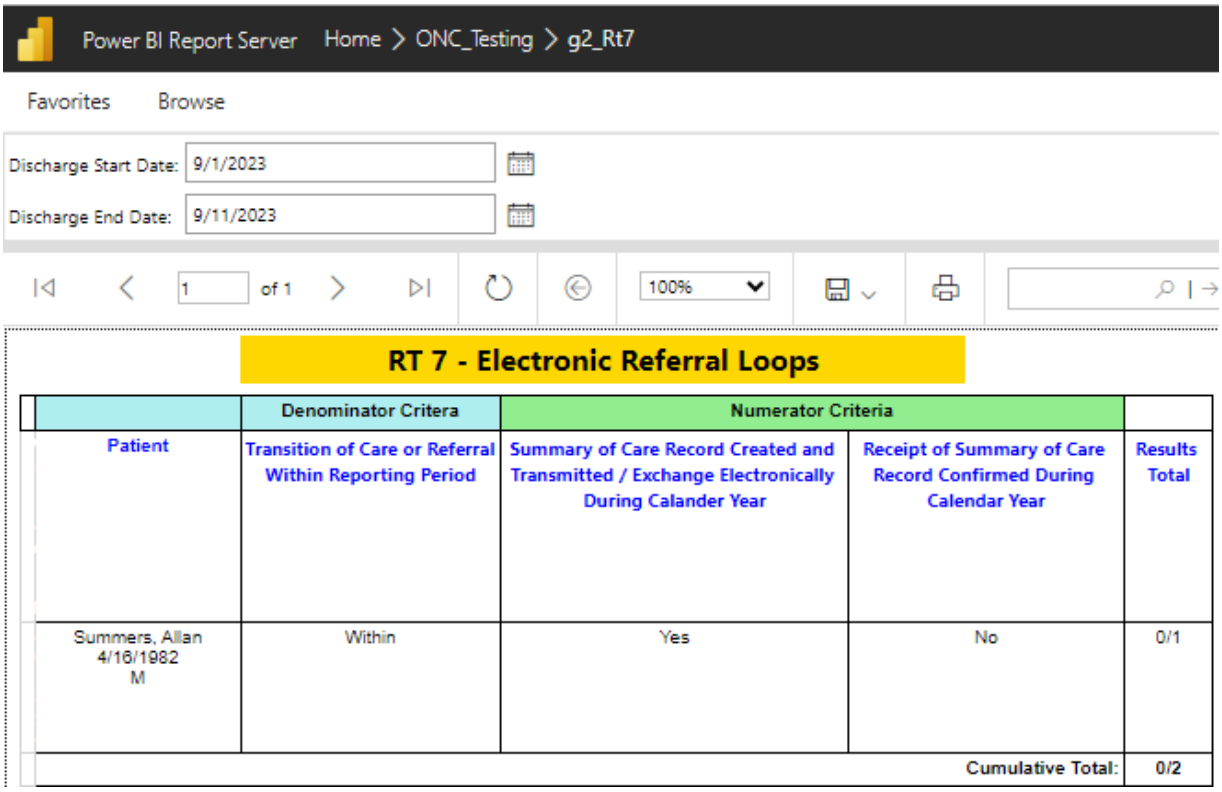
Step	Steps to transmit CDAs created	Expected Outcome
Step 1	Select Document Builder from the Left Nav in the HIM Module	Patient Search window opens
Step 2	Enter the name of the patient to be verified/select the patient. (NOTE: This has to be done one patient at a time.)	Display of listing of Historical Documents
Step 3	Set filter to Discharge Summary	Display of Discharge Summary CDAs that were created upon patient discharge to include the Encounter date range and the date/time the CDA was created.

Step 4	Select document to be transmitted.	Html will open for content review. Content will be based on data available for that patient encounter.
Step 5	Click on the mail envelope (Compose with attachment) in the top right corner. Once the email is created with the attached CDA file, complete the required pieces: • To: uses direct address from the Surescripts Directory • Subject: Should reflect content but no PHI • Body: Should include name of patient • Checkbox for Protected Health Information Click on Send	Email will appear in the Outbox and then in the Sent items mailbox.
Step 6	Click on the Sent items mailbox to view the email with the attached CDA.	Emails will be color coded based on the status. See details below.
Step 7	Review the status to determine the # emails that are sent and are either Successful (Green) or Partially Successful (Yellow)	Numerator= Green + Yellow Denominator = # emails

In reviewing the Sent emails, the color of the email is based on the status:

- Grey: Pending
  - Hover over recipient name in To will show as Code 000 Description: Pending
- Green: Successful
  - Hover over recipient name in To will show as Code 010 Description: Successfully accepted by the ultimate receiver.
- Yellow: Partially Successful
  - Hover over @ least one recipient name in To will show as Code 010 Description: Successfully accepted by the ultimate receiver.
  - Hover over @ least one recipient name in To will show as Code 601 Description: The address that you sent to does not appear to be a Direct Project address
- Red: Failed to send to all recipients
  - Hover over recipient name in To will show as Code 601 Description: The address that you sent to does not appear to be a Direct Project address

Option 2: Report for Electronic Referral Loops (External Consultations)



RT 7 - Electronic Referral Loops

	Denominator Critera	Numerator Criteria		
Patient	Transition of Care or Referral Within Reporting Period	Summary of Care Record Created and Transmitted / Exchange Electronically During Calander Year	Receipt of Summary of Care Record Confirmed During Calendar Year	Results Total
Summers, Allan 4/16/1982 M	Within	Yes	No	0/1
			Cumulative Total:	0/2

Patients who have a Referral CDA created upon discharge will be included if the discharge date is within the period. If the Referral Note was sent using the same process detailed in Option 1 for Discharge Summaries, the Numerator 1 will be Yes. If the direct email address was valid, the status of the email will be "green" and Numerator 2 will be Yes.

Step	Steps to review Referral Note CDAs	Expected Outcome
Step 1	Use the data for the Cumulative Total for the Numerator 1 (Created and Transmitted) and Denominator.	Data should be 100%
Step 2	In the event that the data for Numerator 2 is not the same as Numerator #1, it is likely due to an incorrect direct address and the message status in Sent emails will be red (or possibly yellow if there were multiple email addresses on the email). This can be verified by checking the email address for the Practitioner in Juno configuration against the Surescripts Directory.	Data can be adjusted to exclude any with incorrect email addresses.

7.2 Appendix B §170.315(b)(2) Clinical Information Reconciliation and Incorporation

7.2.1 Criteria

- §170.315(b)(2) Clinical information and Reconciliation and Incorporation

7.2.2 Test Data Entry

- Test data entry would apply ONLY to "receipt" in the event the facility has not received any inbound transition of care documents during the testing period and a reference xml file provided by the vendor is to be utilized for the receipt and view/display. Patient demographic must exist to specifically match the patient for the xml files, whether received from elsewhere or provided by the vendor for import and processing. The xml files provided for use, if necessary, is "170.315b2 Turner CCD_reconciliation.xml". It is available at https://ett.healthit.gov/ett/#/validators/ccdar3 which can be accessed using the following steps:
  - Navigate to https://ett.healthit.gov/ett/#/direct/certdiscovery/dcdt2
  - Select ETT Home from the top navigation bar
  - Select Message Validators
  - Select C-CDA R2.1 from the top navigation bar
  - Then navigate to the middle section "To validate your C-CDA with ONC 2015 Edition".
  - Under step 1, select "Receiver"
  - Under step 2, select 170.315_b2_CIRI_Inp from the drop down
  - Under step 3, select 170.315_b2_ciri_r21_sample1_ccd_v11.xml from the drop down
  - Then select "Download" and your file will be downloaded.

7.2.3 Test Script Prerequisites

NOTE: Information in this section is the same as 7.1.3 above for the b1 criteria.

(1) The patient demographic data for these patients must match the data included in the xml file. In addition, this data can then be used for the §170.315(b)(2) scenarios for reconciliation in Appendix B if necessary.
Manual data entry for "receipt" scenario if using the vendor supplied xml for:

- Susan Turner

Patient Name:	First Name: Susan	Middle Name: Jones	Last Name: Turner
			Alias: Susy Turner
Sex:	Female (F)	DOB:	08/01/1970
Race:	White (2106-3)	Ethnicity:	Not Hispanic or Latino (2186-5)
More Granular Race Code:	2108-9 (White European)	Preferred Language	
Home Address:	1011 Amber Drive Beaverton, OR 97006		
Telephone Number:	Mobile: 555-335-1234	Home: 555-336-1544	

Problems	***Problem Name***	***SNOMED CT Code***	***Health Concern Status***	***Start Date*** ***End Date***

	Fever	386661006		Active	6/22/2015
Medication Allergies:	***Allergy Substance***	***Reaction***	***Severity***	***Status***	***Date***
	Penicillin G benzathine RxNorm 7980	Hives SNOMED -CT 247472004	Moderate	Active	5/01/1980
Medications:	***Medication***	***Dose***	***Frequency***	***Route***	***Start Date End Date***
	Tylenol 500 mg RxNorm 209459		PRN	Oral	6/22/2015
	Ceftriaxone 100 mg/ml RxNorm 309090		BID	Intravenous	6/22/2015

(2) The tester must be assigned to the appropriate role, with prescriptive authority, and the environment must be configured appropriately to execute the scenario.

(3) Vendor supplied xml files to be used for the import in b1 to receive and validate and then for the reconciliation in b2

- 170.315b2 Turner CCD_reconciliation.xml

NOTES:

- In the event there is no data in the report detailed below in Section 7.2.4, and no CDAs have been received for the testing period, the vendor supplied document can be utilized, i.e., the Continuity of Care C-CDA (Susan Turner). In this case, the CDA would be available for reconciliation based on the steps for 7.1.4 for Measure b1h1a above.
- If CDA documents have been received and associated with patients, but not yet reconciled, the steps shown below can be utilized.

Step	Steps to associate CDA with patient for reconciliation (if vendor document being utilized)	Expected Outcome
Step 5	Click on the Import to EHR icon in the right nav above the Table of Contents.	Listing of Potential Patient Matches will open with the Confidence Level Score.
Step 6	Select the patient with who the document should be associated for review by the provider in the Reconciliation.	The document will be associated with the patient and will be displayed in ProDash in the left Nav under External Documents for the specific patient.
Step	**Steps to verify CDA creation after reconciliation**	**Expected Outcome**

Step 1	In ProDash, enter the name of the patient to be verified/select the patient. (NOTE: This has to be done one patient at a time and may require selection of the specific encounter if the patient has more than one encounter. The Admission Date is included in the report generated.)	Display of patient's record for the selected encounter.
Step 2	On the Left Nav, select Document Viewer and External Records.	Display of listing of External Documents that includes: • Document Source • Document Date • Date Received • Type • Red Button "Needs reconciliation"
Step 3	Single click to select the document for review based on the report that includes the Admission Date. Clicking on the individual items in the Table of Contents will take the user directly to that section in the document.	Document will open in a format that the user can view
Step 4	After a quick review of the document received, click on the red button "Needs reconciliation"	Side by side comparison of the External Record (yellow) and the data from JUNO (green)are displayed for action.
Sep 5	For each of the items, i.e. Allergies, Medications and Problems, determine what action should be taken, i.e. Add, Consolidate, No Action, based on the data. Click Next	The listing of reconciled data will be displayed for review/capture of a screenshot for reference when new C-CDA is created in Scenario 2.
Step 6	Click Import	Display of Toaster Message that CDA Reconciliation was successful.
Step 7	Repeat process for additional patients	

7.2.4 Measure Data

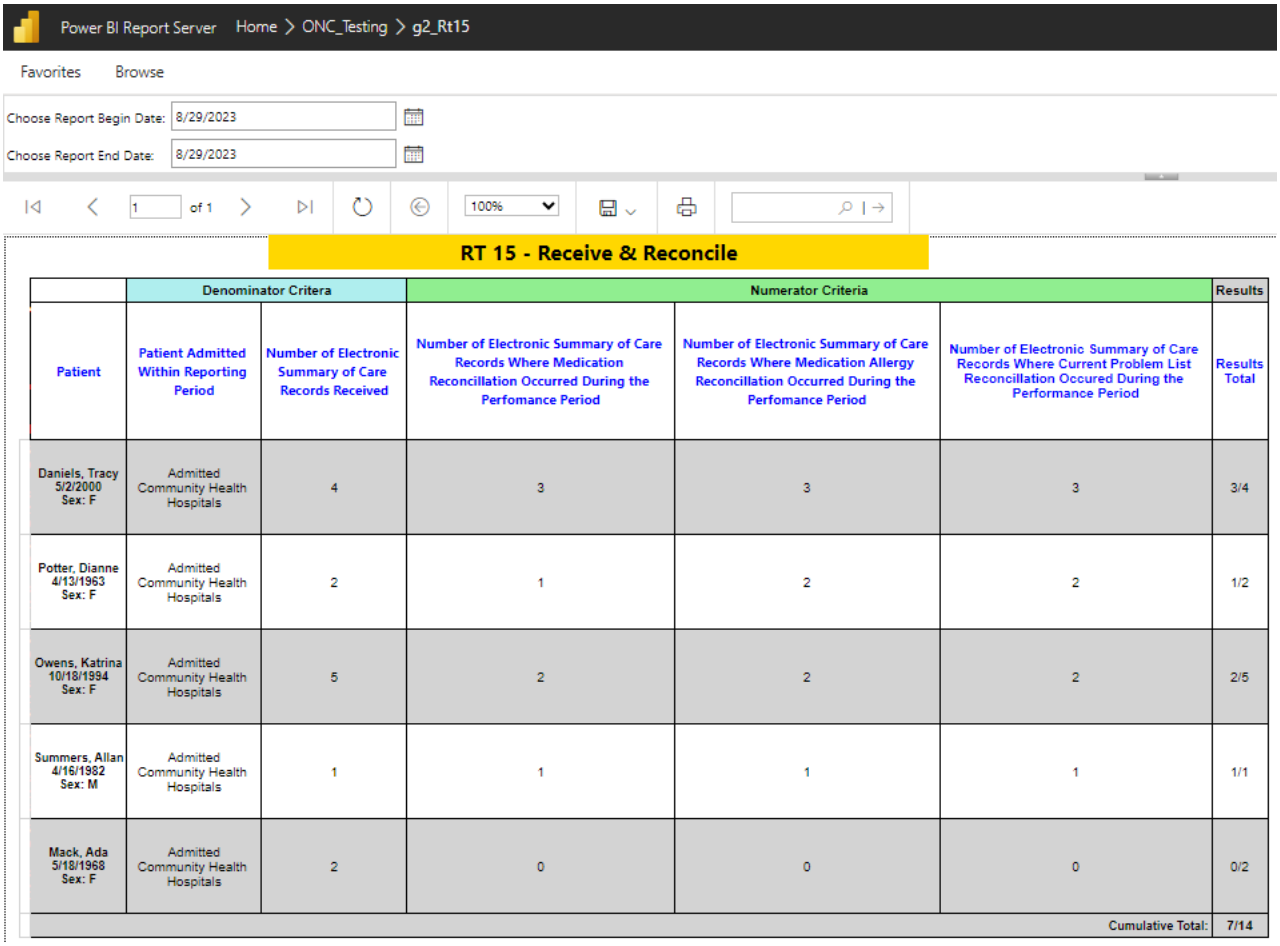
- **Measure b2a**: % scenarios that include receipt of the Continuity of Care Document, Referral Note, and/or Discharge Summary document templates that allow the user to view the data in a format that allows comparison of each set of data, creation of a reconciled list and updating the list in the EHR based on the final reconciled list for each data set

Numerator= # data sets with expected results
Denominator = # data sets reviewed and reconciled
Data sets=active meds, allergies and intolerances, problem list

Report:

- Denominator data can be obtained from RT15 report that provides a listing of patients with # CDAs received/associated with patients as well as the # CDAs with Meds, Allergies and Problems reconciled
- Numerator data is based on the results of the visual inspections/validation that the expected functionality can be confirmed.

The RT15 Receive and Reconcile Report can be generated on demand. It is based on activity that is part of normal clinical flow that includes receipt of the CDA from an external source via direct messaging and review/import/association of that document with the appropriate patient in the HIM module and subsequent review/reconciliation of the document by the provider. Based on that report, the following steps can be utilized to compare the data to review the activity for a given patient.



RT 15 - Receive & Reconcile

	Denominator Critera		Numerator Criteria			Results
Patient	Patient Admitted Within Reporting Period	Number of Electronic Summary of Care Records Received	Number of Electronic Summary of Care Records Where Medication Reconcillation Occurred During the Perfomance Period	Number of Electronic Summary of Care Records Where Medication Allergy Reconcillation Occurred During the Perfomance Period	Number of Electronic Summary of Care Records Where Current Problem List Reconcillation Occured During the Performance Period	Results Total
Daniels, Tracy 5/2/2000 Sex: F	Admitted Community Health Hospitals	4	3	3	3	3/4
Potter, Dianne 4/13/1963 Sex: F	Admitted Community Health Hospitals	2	1	2	2	1/2
Owens, Katrina 10/18/1994 Sex: F	Admitted Community Health Hospitals	5	2	2	2	2/5
Summers, Allan 4/16/1982 Sex: M	Admitted Community Health Hospitals	1	1	1	1	1/1
Mack, Ada 5/18/1968 Sex: F	Admitted Community Health Hospitals	2	0	0	0	0/2
					Cumulative Total:	7/14

- **Measure b2b**: % Continuity of Care documents created after the incorporation that contains the final list of reconciled data for each data set

Numerator= # CCD created with expected results for each of the three data sets
Denominator = # CCDs generated
Data sets=active meds, allergies and intolerances, problem list

Report:

- Denominator data is based on the number of CCDs generated as part of testing since this is not necessarily a process implemented in actual clinical workflow
- Numerator data is based on the results of the visual inspections/validation that the expected functionality can be confirmed.

The steps detailed below delineate the process to create a Continuity of Care C-CDA that includes the data reconciled and incorporated in accordance with § 170.205(a)(5). NOTE: If the same patient(s) reviewed for Measure b2a are utilized, the denominator would be the same; however, the data in the report should reflect the specifics of the CDAs actually reconciled. Any of the patients in the report used for Measure b2a can be utilized to generate the C-CDAs based on the reconciled data. If CDAs are generated for only a portion of the patients in the report, that # would be used as the denominator.

Step	Steps to verify CDA creation after reconciliation	Expected Outcome
Step 1	Select Document Builder from the Left Nav in the HIM Module	Patient Search window opens
Step 2	Enter the name of the patient to be verified/select the patient. (NOTE: This has to be done one patient at a time.)	Display of listing of Historical Documents
Step 3	Click on the green Generate Document button Select the appropriate encounter Select Document Type, i.e., CCD-Transition of Care	New document is added to the listing.
Step 4	Click on the name of the document that was created, i.e., Transition of Care to open the human readable html.	Human readable html opens and includes a Table of Contents that allows user to navigate to a specific section.
Step 5	Click on an item in the Table of Contents to view that specific entry.	The view of the html will change to display the specific element selected.
Step 6	Compare the data in the human readable html to the content in the patient's EHR for that specific encounter for the items reconciled, i.e., • Problems • Allergies • Medications for a given patient.	Record the # C-CDAs reviewed with the expected content as the numerator and the # C-CDAs reviewed as the denominator
Step 7	Repeat process for additional patients	

7.3 Appendix C §170.315(c)(1) Clinical Quality Measures (CQMs) – Record and Export and §170.315(c)(3) Clinical Quality Measures (CQMs) – Report

7.3.1 Criteria

- §170.315(c)(1) Clinical quality measures (CQMs) – record and export
- §170.315(c)(3) Clinical quality measures (CQMs) – report

7.3.2 Test Data Entry

Actual patient data should be utilized for the testing, but it needs to be entered as detailed below so that the data is captured in a manner for each of the eCQM specific data elements such that it can then be saved to the SQL tables utilized by the DHIT CQMsolution® for (1) calculation of the measures, (2) viewing the data in a Dashboard format or a patient drill-down screen, and (3) generation of the QRDA I files needed for submission to Joint Commission, CMS or other regulatory bodies.

The following QDM Data Elements will be captured as part of the patient registration and admitting process based on standard configuration validated during implementation:

- ✓ Encounter, Performed: Non-elective Inpatient Encounter
- ✓ Encounter, Principal Diagnosis
- ✓ Patient Characteristic: Ethnicity
- ✓ Patient Characteristic: Payer
- ✓ Patient Characteristic: Race
- ✓ Patient Characteristic: ONC Administrative Sex
- ✓ Patient Characteristic: Birthdate
- ✓ Discharge Disposition

In addition to the common QDM Data Elements listed above, data will also be captured for the following QDM Data Elements for eCQM CMS 108v11 Venous Thromboembolism as part of the clinical documentation process:

- ✓ Assessment, Performed (used for VTE Risk Assessment for 108v11)
- ✓ Device, Not Ordered (used for VTE Prophylaxis Devices for 108v11)
- ✓ Intervention, Order (used for Comfort Measures for 108v11)
- ✓ Intervention, Performed (used for Comfort Measures for 108v11)
- ✓ Laboratory Test, Performed (used for INR for 108v11)
- ✓ Medication, Administered (used for Antithrombotics for 108v11)
- ✓ Medication, Not Administered (used for Antithrombotics ordered but not administered for 108v11)
- ✓ Medication, Ordered (used for Antithrombotics for 108v11)
- ✓ Medication, Not Ordered (used for Antithrombotics not ordered for 108v11)
- ✓ Procedure, Not Performed (used for VTE Prophylaxis Device not applied for 108v11)
- ✓ Procedure, Performed (used for Application of VTE Prophylaxis Device & Surgical Procedure for 108v11)

7.3.3 Test Script Prerequisites

(1) Configuration of DHIT CQMsolution® to generate the report. This is done by the facility's CQM Solution administrator and includes the selection of the specific EH Measures that the facility wishes to include in the evaluation/data submission to CMS and/or Joint Commission.

(2) Usage of specific orders and templates with configuration required for the capture of coded data utilized for a given eCQM, i.e., eCQM CMS 108v11.

Orderable items with specific associated codes defined in eCQM Value Sets:

- VTE Device (GCS, IPC, FP)
- Comfort Care
  - Intervention, Order (used for Comfort Measures for 108v11)
- Antithrombotic medications
  - Medication, Ordered (used for Antithrombotics for 108v11)
  - Medication, Administered (used for Antithrombotics for 108v11)
  - Medication, Not Administered (used for Antithrombotics ordered but not administered for 108v11)
- Laboratory Tests-INR
  - Laboratory Test, Performed (used for INR for 108v11)

Templates with items with specific associated codes defined in eCQM Value Sets:

- VTE/PE Assessment (T264)
  - Assessment, Performed (used for VTE Risk Assessment for 108v11)
- History & Physical (T104)
  - Assessment, Performed (used for VTE Risk Assessment for 108v11)
- Nursing Shift Assessment (T242)
  - Intervention, Performed (used for Comfort Measures for 108v11)
  - Procedure, Not Performed (used for VTE Prophylaxis Device not applied for 108v11)
  - Procedure, Performed (used for Application of VTE Prophylaxis Device & Surgical Procedure for 108v11)
- Discharge Summary-Physician (T081)
  - Device, Not Ordered (used for VTE Prophylaxis Devices for 108v11)
  - Medication, Not Ordered (used for Antithrombotics not ordered for 108v11)

(3) Data capture of the data for eCQM CMS 108v11 as part of routine clinical workflow is available in the staging table utilized by DHIT CQMsolution® to generate the report that contains the measure specific data and the QRDA I data files. Based on the patient specific data, the report will evaluate the patient to determine whether the patient is in the Initial Population, Denominator, Numerator, Exclusion or Exception. NOTE: Not all EH eCQMs have Exceptions.

Measure 108													
Patient Name	**Age/ DOB**	**Device Ordered**	**Device Applied**	**Med Order**	**Med Admin**	**Comfort Care**	**Proc-SCIP**	**DX: OB or VTE**	**IPP**	**Den**	**Excl**	**Num**	**Excp**
Example 1	>18	✓	✓	✓	✓				✓	✓		✓	
Example 2	>18	✓	✓ pt refused	✓	✓				✓	✓		✓	
Example 3	>18	✓	✓	✓	✓ Not admin-med reason				✓	✓		✓	
Example 4	>18					✓			✓	✓	✓		
Example 5	>18						✓		✓	✓	✓		
Example 6	>18							✓					

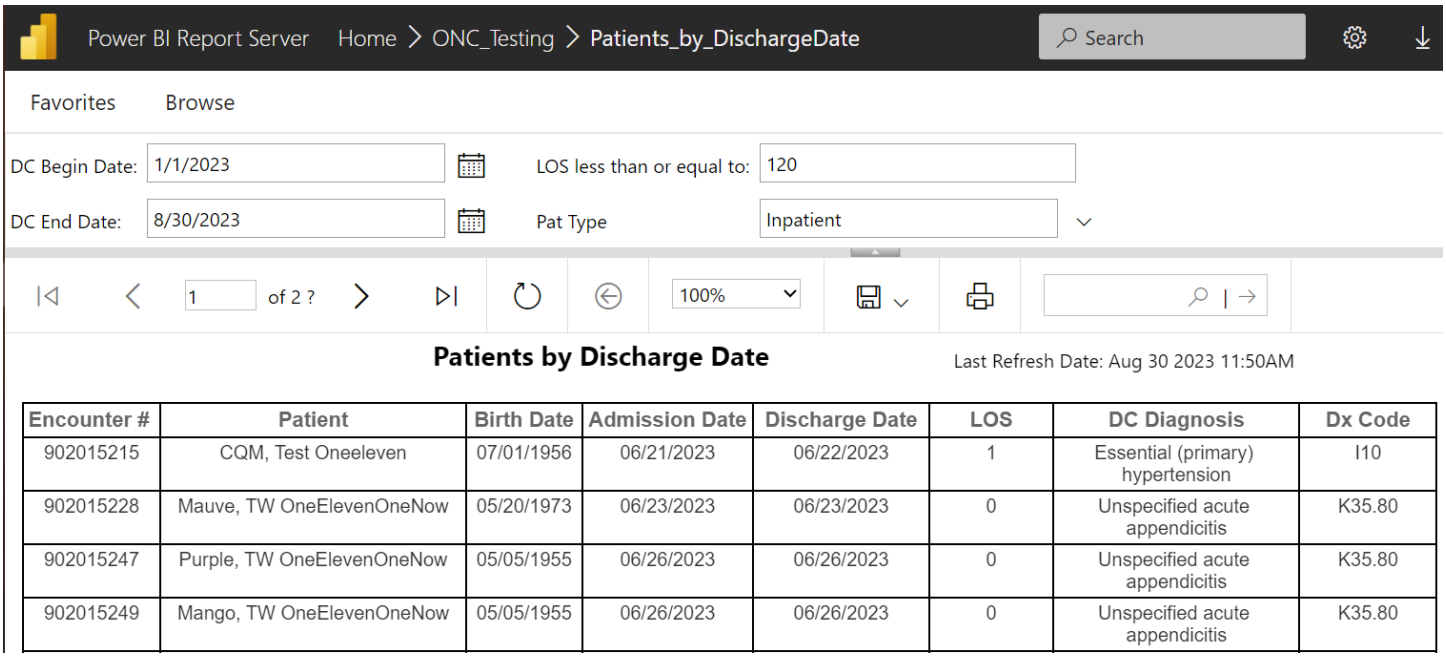
7.3.4 Measure Data

The measure includes three parts, i.e.,

- **Measure c1a:** % patients who are discharged that are included in the Measure 108 report

Numerator= # patients included on the Measure 108 report with data evaluated
(1) Initial Patient Population,
(2) Numerator
(3) Denominator,
(4) Denominator Exception (None for this measure) and
(5) Denominator Exclusion,
Denominator = # patients who are discharged for report period

Report: Patients by Discharge Date



Encounter #	Patient	Birth Date	Admission Date	Discharge Date	LOS	DC Diagnosis	Dx Code
902015215	CQM, Test Oneeleven	07/01/1956	06/21/2023	06/22/2023	1	Essential (primary) hypertension	I10
902015228	Mauve, TW OneElevenOneNow	05/20/1973	06/23/2023	06/23/2023	0	Unspecified acute appendicitis	K35.80
902015247	Purple, TW OneElevenOneNow	05/05/1955	06/26/2023	06/26/2023	0	Unspecified acute appendicitis	K35.80
902015249	Mango, TW OneElevenOneNow	05/05/1955	06/26/2023	06/26/2023	0	Unspecified acute appendicitis	K35.80

Report: CQMsolution® Measure 108

Step	Steps to verify eCQM data in CQMsolution®	Expected Outcome
Step 1	In the HIM Module, select the link for CQMsolution® at the top.	User will see the CQM Solution log in screen.
Step 2	Enter the User credentials for CQMsolution®.	Listing of Queued Reports that were previously configured by the facility's CQM Solution Administrator
Step 3	Select the report that includes EH Measure 108v11 Venous Thromboembolism Prophylaxis.	Report is displayed and you can view aggregated data in the report as well as line by line listing of the patients discharged in the period specified
Step 4	On the Queued Reports Page, Click the View Results Button, then Click the View Detail Link	

Step 5	Count the # patients displayed for Measure 108	Numerator = # pts on report
		Denominator = # patients on "Patients by Discharge Date" for same period

- **Measure c1b:** % reports viewed that include the accurate data calculated for the measure and for each of the patients on the report

Numerator= # patients with expected results based on data entry for the specific patient
(1) Initial Patient Population,
(2) Numerator
(3) Denominator,
(4) Denominator Exception (None for this measure) and
(5) Denominator Exclusion,
Denominator = # patients reviewed prior to transmission/uploading

NOTE: See Venous Thromboembolism Prophylaxis 11.1.000 (healthit.gov) for details on expected results

Report: CQMsolution® Measure 108

Step	Steps to verify eCQM data in CQMsolution®	Expected Outcome
Steps 1-5	See above for Measure c1b	
Step 6	On the Queued Reports Page, Click the View Results Button, then Click the View Detail Link • IPP: Pts >18 with LOS <120 days • Den: Same as IPP • Excl: ➢ LOS <2 days ➢ Admits/Transfers to ICU ➢ Principal Dx = MH disorder or stroke ➢ Principal procedure =SCIP VTE ➢ Comfort measures • Num: ➢ VTE prophylaxis (device & med) ➢ Docum of negation rationale • Excp: None for this measure	Report is displayed and you can view aggregated data in the report as well as line by line listing of the patients discharged in the period specified for each of the "bubbles". See the measure specifications for full details/specifications.
Step 7	On a patient row, click on the patient name to display the full details of data captured for that patient to determine whether data was captured and analyzed as expected.	

- **Measure c1c**: % valid QRDA I files generated using CQMSolution® for consumption by Joint Commission or CMS systems, including for Hospital Quality Reporting (HQR)

Numerator= # valid QRDA I files generated
Denominator = # QRDA I files requested for subsequent transmission/uploading

Report: Measure 108

Step	Steps to validate the QRDA 1 files	Expected Outcome
Step 1	Using the Reports generated in for **Measure 108** Click the View Results Button, then Click the Detail Tab. Click on the Downloads Button, then Select “Download QRDA I”	QRDA I zip file is downloaded
Step 2	Locate QRDA I zip file in designated storage location	File can be uploaded based on facility process and agreement with DHIT as per license