



2016 CMS QRDA Implementation Guide for Eligible Professional Programs and Hospital Quality Reporting (HQR)

APPENDIX

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1. Introduction

The Centers for Medicare & Medicaid Services (CMS) published the [CMS QRDA Implementation Guide for Eligible Professional Programs and Hospital Quality Reporting \(HQR\) Supplementary Implementation Guide for 2016 Version 1.0](#) (referred to as the 2016 CMS QRDA IG) on July 8, 2015. The 2016 CMS QRDA IG provides implementation guidance for the 2016 Reporting Period for submitting Quality Reporting Document Architecture Category I (QRDA-I) reports to the CMS EHR Incentive Program and the Hospital Inpatient Quality Reporting Program for both the Eligible Professional (EP) programs and the Hospital Quality Reporting (HQR), and for submitting QRDA Category III (QRDA-III) reports to EP programs.

This appendix lists the updates and clarifications to the 2016 CMS QRDA IG, which include:

- Technical corrections to some of the templates of the 2016 CMS QRDA IG.
- Clarifications and additional guidance for QRDA-I file submission to the HQR program.
- Clarifications on elements used for eligible hospital (EH) eCQM calculations when specifications are not clear.
- Clarifications and additional guidance for specific validations to the Physician Quality Reporting System (PQRS) programs.
- Patient Data Section entry templates constraints for PQRS.
- A complete list of the UUIDs referenced by the eCQM Specifications for EP Update June 2015 (total 64 eCQMs), which include the Version Specific Measure Identifier for each 2015 eCQM for EP and the population identifiers for all population criteria within each of the eCQM. It also includes the identifiers for reporting strata if applicable.

2. Specifications for the 2016 Reporting Period

2.1 eCQM Specifications

The following eCQM specifications must be used for the 2016 Reporting Period:

- The [eCQM Specifications for Eligible Professionals Update June 2015](#) must be used for the EP programs.
- The [eCQM Specifications for Eligible Hospitals Update June 2015](#) must be used for HQR.

2.2 Value Sets

PQRS is based on the May 1, 2015 version of the [eCQM Specifications for Eligible Professionals Update June 2015](#) Value Sets. “May 01, 2015” is the Value Set Authority Center (VSAC) publication date for these value sets.

3. eCQM Version Specific Measure Identifier

A specific version of an eCQM can be identified by using an eCQM Version Specific Measure Identifier alone or the combination of an eCQM Version Neutral Identifier and a Version Number. In a Health Quality Measure Format (HQMF) xml file, the xpath for eCQM Version Specific Measure Identifier is `QualityMeasureDocument/id/@root`.

3.1 Submit eCQM Version Specific Measure Identifier ONLY

For the 2016 Reporting Period, only the eCQM Version Specific Measure Identifier is required to uniquely identify the version of an eCQM. The eCQM Version Specific Measure Identifier must be submitted in both QRDA-I and QRDA-III. eCQM Version Neutral Identifier and eCQM Version Number are not used to validate that Update June 2015 eCQMs are being submitted.

It is recommended that eCQM Version Numbers not be included in the QRDA. This is due to a known data type mismatch issue between the Health Level Seven (HL7) QRDA and HQMF standards for the *versionNumber* attribute. Both the QRDA-I and QRDA-III standards are based on HL7 Clinical Document Architecture (CDA) R2, which is derived from the HL7 Reference Information Model (RIM) Version 2.07. In RIM 2.07, the *versionNumber* attribute is specified as INT data type. HQMF R2.1, however, is derived from HL7 RIM, Version 2.44, where *versionNumber* is specified as ST data type. Starting from the June 2015 eCQM annual update, eCQM Version Numbers generated by the Measure Authoring Tool (MAT) are now string values such as 4.0.000 and 5.1.000 instead of integers such as 4 or 5. If a version number such as 4.0.000 were submitted, the QRDA files will fail the CDA_SDTC.xsd schema validation and will be rejected by the receiving systems. If the *versionNumber* attribute is supplied as an INT value, the file will not be rejected, but the value will be ignored.

3.2 Version Specific Measure Identifier Case Insensitive

eCQM Version Specific Measure Identifiers are case insensitive. For example, Version Specific Measure Identifier of eCQM CMS117v4 is UUID "40280381-4be2-53b3-014c-056c3662131d", which is treated the same as "40280381-4BE2-53B3-014C-056C3662131D".

4. Value Sets Codes Case Sensitive

Codes from some code systems contain alpha characters. Case of these alpha characters will be validated by both the PQRS and HQR systems. How codes are displayed in the Vocabulary file (voc.xml)¹ and VSAC and in the VSAC exports will serve as the source of truth for conducting the case validations for value sets specified in eCQM specifications. For example, for a particular code, if alpha characters in this code were shown as upper case in VSAC or the Vocabulary file (voc.xml), then the validation will require them to be upper case.

The CMS program name codes shown in the QRDA-I CMS Program Name and QRDA-III CMS Program Name value sets (2016 CMS QRDA IG, page 18 and 41) are all uppercase, and they are case sensitive.

Codes contained in the CMS Payer Groupings value set (2016 CMS QRDA IG, page 69) also must be uppercase as they are displayed in the value set table.

¹The Vocabulary file (voc.xml) is available on the CMS eCQM Library Website under QRDA Resources. https://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms/ecqm_library.html

5. Part A – QRDA-I DSTU R3 Supplementary Implementation Guide for Eligible Professional Programs and Hospital Quality Reporting

The following sections list the updates and clarifications to the *Part A – QRDA-I DSTU R3 Supplementary Implementation Guide for Eligible Professional Programs and Hospital Quality Reporting* of the 2016 CMS QRDA IG.

5.1 Template Changes

The template name and conformance number for each change is listed along with the text of the original (2016 CMS QRDA IG, Version 1.0, 07/08/2015), the text of the update (this Appendix, 02/26/2016), and the rationale for the change.

The template changes apply to both EP programs and HQR.

Table 1 QRDA-I Template Changes to 2016 CMS QRDA IG

| Template | Conf. # | Version 1.0 (07/08/15) | Appendix (02/26/16) | Rationale |
|----------------------------|--|------------------------|---|---------------------------------------|
| 5.1.1 General Header | 1182-28472 1182-28473 1182-28474 1182-28475 1182-28476 1182-28477 | None | <p>8. SHALL contain exactly one [1..1] component (CONF:1182-28472).</p> <p>This component SHALL contain exactly one [1..1] structuredBody (CONF:1182-28473).</p> <p>This structuredBody SHALL contain at least one [1..*] component (CONF:1182-28474) such that it</p> <p>SHALL contain exactly one [1..1] Reporting Parameters Section - CMS EP & HQR (identifier: urn:hl7ii:2.16.840.1.113883.10.20.17.2.1:2015-07-01) (CONF:1182-28475).</p> <p>This structuredBody SHALL contain at least one [1..*] component (CONF:1182-28476) such that it</p> <p>SHALL contain exactly one [1..1] Patient Data Section QDM (V2) - CMS EP & HQR (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.2.1:2015-07-01) (CONF:1182-28477).</p> | Added missing conformance statements. |

| Template | Conf. # | Version 1.0 (07/08/15) | Appendix (02/26/16) | Rationale |
|--|------------|--|---|---|
| 5.1.4 information Recipient | CMS_0043 | This intendedRecipient SHALL contain exactly one [1..1] id (CONF:1140-16705_C01). SHALL NOT contain [0..0] @nullFlavor (CONF:CMS_0043). | This intendedRecipient SHALL contain exactly one [1..1] id (CONF:1140-16705_C01). This id SHALL NOT contain [0..0] @nullFlavor (CONF:CMS_0043). | Added missing "This id" to CMS_0043. |
| 5.1.5 documentat ionOf/servic eEvent | 1140-16581 | Such serviceEvent SHALL contain exactly one [1..1] @classCode="PCPR" Care Provision (CONF:16581). | Such serviceEvent SHALL contain exactly one [1..1] @classCode="PCPR" Care Provision (CONF:1140-16581). | No change to the constraint. Corrected the CONF number to 1140-16581. |
| 5.1.5 documentat ionOf/servic eEvent | 1140-16584 | Such performers SHALL contain exactly one [1..1] @typeCode="PRF" Performer (CONF:1140-16581). | Such performers SHALL contain exactly one [1..1] @typeCode="PRF" Performer (CONF:1140-16584). | No change to the constraint. Corrected the CONF number to 1140-16584. |
| 5.2.2.1 Reporting Parameters Act – CMS EP & HQR | None | HQR: For HQR reporting ONLY - The system SHALL reject QRDA-I R3 files if the Reporting Parameter Section Effective Date Range does not align with one of the Program's allowable calendar year discharge quarters. ² | HQR: For HQR reporting ONLY - The system SHALL reject QRDA-I R3 files if the Reporting Parameter Section Effective Date Range does not align with one of the Program's allowable calendar year discharge quarters. | Removed the footnote "The allowable Calendar Year discharge quarters for the HQR programs will be available after the FY 2016 IPPS Final Rule is finalized." See 5.2.1 Reporting Discharge Periods and Submission Periods for details. |
| ² The allowable Calendar Year discharge quarters for the HQR programs will be available after the FY 2016 IPPS Final Rule is finalized. | | | | |

5.2 HQR Submission Requirements

There are 29 Eligible Hospital (EH) eCQMs that can be submitted in QRDA-I submissions. [eCQM Specifications for Eligible Hospitals Update June 2015](#) must be used for submissions for the 2016 Reporting Period, otherwise the QRDA-I file will be rejected. See the Table 2 below for the complete list of version specific measure identifiers for each of the 29 EH eCQMs contained in the Update June 2015 eCQM specifications.

- Twenty-eight of these eCQMs are available for credit in the Hospital Inpatient Quality Reporting program (IQR) Program.
- ED-3 is an outpatient measure and not applicable for IQR.
- All of the 29 eCQMs may be used for credit under the Medicare EHR Incentive Program (Meaningful Use).

Table 2 Version Specific Measure Identifier UUID List for eCQMs EH Update June 2015

| eCQM | Version Specific Measure ID | eCQM | Version Specific Measure ID |
|----------|--------------------------------------|----------|--------------------------------------|
| CMS9v4 | 40280381-4de7-db4d-014d-e8c552e9025f | CMS105v4 | 40280381-4be2-53b3-014c-09f5e7c01618 |
| CMS26v3 | 40280381-4b9a-3825-014b-bd8fa6b2062e | CMS107v4 | 40280381-4b9a-3825-014b-c1ce20f40785 |
| CMS30v5 | 40280381-4be2-53b3-014b-e6419b2c033e | CMS108v4 | 40280381-4c18-79df-014c-2d6dc6ce0a53 |
| CMS31v4 | 40280381-4c18-79df-014c-2864b0a404c5 | CMS109v4 | 40280381-4c18-79df-014c-2d6122a30a44 |
| CMS32v5 | 40280381-4c18-79df-014c-291ef3f90654 | CMS110v4 | 40280381-4c18-79df-014c-2d98d1d60add |
| CMS53v4 | 40280381-4be2-53b3-014b-ea9da2df05bb | CMS111v4 | 40280381-4c18-79df-014c-242d05bb02cd |
| CMS55v4 | 40280381-4c18-79df-014c-2414260502ad | CMS113v4 | 40280381-4c18-79df-014c-234fb44c0145 |
| CMS60v4 | 40280381-4be2-53b3-014b-eb39a1a60681 | CMS114v4 | 40280381-4c18-79df-014c-2e3345ce0c63 |
| CMS71v5 | 40280381-4b9a-3825-014b-db6ef30f0e2d | CMS171v5 | 40280381-4de7-db4d-014d-e8631eb001af |
| CMS72v4 | 40280381-4c72-51df-014c-8f6fc3510790 | CMS172v5 | 40280381-4de7-db4d-014d-e88b72cf0211 |
| CMS73v4 | 40280381-4c18-79df-014c-38c6ba7f190b | CMS178v5 | 40280381-4c18-79df-014c-284cd800045b |
| CMS91v5 | 40280381-4be2-53b3-014b-f0bbf5d70dbb | CMS185v4 | 40280381-4a43-a22d-014a-cb65430e2df5 |
| CMS100v4 | 40280381-4be2-53b3-014b-e66bed0703d0 | CMS188v5 | 40280381-4de7-db4d-014d-e8361d36015a |
| CMS102v4 | 40280381-4b9a-3825-014b-c21e526d0806 | CMS190v4 | 40280381-4c18-79df-014c-3364efa21057 |
| CMS104v4 | 40280381-4c72-51df-014c-8f7b539207a9 | NA | NA |

5.2.1 Reporting Discharge Periods and Submission Periods

The Calendar Year (CY) 2016/Fiscal Year (FY) 2018 submission deadline is February 28, 2017. The discharge quarter being reported in QRDA-I files is indicated by the Reporting Parameters Act template. The reporting parameter dates in the Reporting Parameters Act template are equivalent to the start and end dates of the reported discharge quarter (e.g., 4/01/2016, 6/30/2016).

5.2.1.1 Production File Submission

For CY 2016/FY 2018 payment determination:

- Hospitals must report production data for one quarter (Q3 or Q4).
- Production data files for either Q3 or Q4 may be submitted from October 2016 through February 28, 2017.

National Quality Strategy (NQS) Domain distribution will not be required for 2016 reporting for HQR – EHR.

Table 3 HQR-EHR Reporting Discharge Periods and Submission Periods for Production Files for 2016 Reporting Period summarizes the HQR-EHR reporting discharge periods and submission periods for production files.

Table 3 HQR-EHR Reporting Discharge Periods and Submission Periods for Production Files for 2016 Reporting Period

| Quarter | Discharge Start | Discharge End | Submission Period Start | Submission Period End |
|---------|-----------------|---------------|-------------------------|-----------------------|
| CYQ1 | N/A | N/A | N/A | N/A |
| CYQ2 | N/A | N/A | N/A | N/A |
| CYQ3 | 7/1/2016 | 9/30/2016 | 10/1/2016 | 2/18/2017* |
| CYQ4 | 10/1/2016 | 12/31/2016 | 10/1/2016 | 2/28/2017* |

*Please refer to the [Medicare EHR Incentive Program](https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/2016ProgramRequirements.html) website (<https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/2016ProgramRequirements.html>) and/or the [QualityNet](https://www.qualitynet.org) website (<https://www.qualitynet.org>) in the event that Submission Period Start or End dates change.

5.2.1.2 Test File Submission

Submission of test data files can be for any of the four discharge quarters (CYQ1, Q2, Q3, and Q4) and may be submitted from approximately June 1, 2016 through February 28, 2017. Table 4 summarizes these dates for test file submissions for HQR.

Table 4 HQR-EHR Reporting Discharge Periods and Submission Periods for 2016 HQR-EHR Test Submissions

| Quarter | Discharge Start | Discharge End | Submission Period Start | Submission Period End |
|---------|-----------------|---------------|-------------------------|-----------------------|
| CYQ1 | 1/1/2016 | 3/31/2016 | 6/1/2016* | 2/28/2017** |
| CYQ2 | 4/1/2016 | 6/30/2016 | 6/1/2016* | 2/28/2017** |
| CYQ3 | 7/1/2016 | 9/30/2016 | 7/1/2016 | 2/28/2017** |
| CYQ4 | 10/1/2016 | 12/31/2016 | 10/1/2016 | 2/28/2017** |

*A system release is required to receive and validate 2016 test files. HQR 10.0 is planned for deployment by about June 1, 2016.

**Please refer to the [Medicare EHR Incentive Program](https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/2016ProgramRequirements.html) website (<https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/2016ProgramRequirements.html>) and/or the [QualityNet](https://www.qualitynet.org) website (<https://www.qualitynet.org>) in the event that Submission Period Start or End dates change.

5.2.2 Successful Submission Criteria for both IQR and EHR Incentive Programs

eCQM reporting for HQR for CY 2016 is still voluntary for the Medicare EHR Incentive Program but is required for the IQR program. Hospitals that meet the eCQM submission requirement for the IQR Program also satisfy the electronic reporting option to meet the Clinical Quality Measure requirement of the Medicare EHR Incentive Program.

eCQM reporting requirements for HQR for 2016 Reporting Period specify that participating hospitals must report a minimum of four eCQMs.

Successful submission under both the IQR and EHR incentive programs for 2016 Reporting Period is defined as:

- Submission of at least four EH eQMs, which can be reported as any combination of accepted QRDA Category I Release 3 files with patients meeting the Initial Patient Population (IPP) for the corresponding measures
- Zero denominator declarations
- And/or case threshold exemptions

Hospitals that do not participate in the IQR program or are not able to meet the electronic reporting option of the Medicare EHR Incentive Program are able to attest to 16 clinical quality measures for a full year utilizing the CMS Registration and Attestation System.

5.2.3 Patient Identification Number

Table 5 Patient Identification Number Constraints

| CONF. # | Version 1.0 (07/08/15) |
|----------------------------------|--|
| CMS_0009 CMS_0053 CMS_0007 | <p>HQR: Patient Identification Number is required for HQR. Medicare HIC Number is not required for HQR but should be submitted if the payer is Medicare and the patient has an HIC number assigned.</p> <p>ii. This patientRole SHALL contain exactly one [1..1] id (CONF:CMS_0009) such that it</p> <ol style="list-style-type: none"> 1. SHALL contain exactly one [1..1] @root (CONF:CMS_0053). 2. SHALL contain exactly one Patient Identifier Number (CONF:CMS_0007). |

As specified by constraints contained in Table 5, Patient Identification Number (Patient ID) is required for HQR. It is a key attribute to identify a unique QRDA-I file for HQR submissions. The Patient ID is a unique number to identify a unique person (i.e., that one person should only have one unique Patient ID within a facility).

For HQR Patient ID, the root OID would be provider's organization OID or other non-null value different than the OID for the Medicare Health Insurance Claim (HIC) Number (id root="2.16.840.1.113883.4.572"). The @extension attribute contains the Patient ID. For example, <id root="2.16.840.1.113883.123.123.123" extension="123456"/>.

5.2.4 CDAC Users CMS Program Name Code Correction

The correct CMS Program Name code for submissions by Clinical Data Abstraction Center (CDAC) users is CDAC_HQR_EHR. The Table 5 QRDA-I CMS Program Name (2016 CMS QRDA IG, page 18) had incorrectly listed it as CDAC_EHR_IQR.

The code CDAC_HQR_EHR is an internal code used for eCQM validation and SHALL NOT appear in any hospital submitted QRDA files.

5.2.5 HQR Validation Rules Updates

Table 6 and Table 7 below list the updates to the validation rules contained in Appendix 10 Additional QRDA-I Validation Rules for HQR Programs of the 2016 CMS QRDA IG.

Table 6 Updated Validation Rules for Encounter Performed (V2)

| CONF. # | Version 1.0 (07/08/15) | Appendix (02/26/16) | Changes Made |
|--|--|--|---|
| CMS_0063 | The system SHALL reject QRDA-I files if at least one of the Encounter Performed Discharge Dates is not within the Program's allowable Calendar Year discharge quarter ³ (CONF: CMS_0063). | The system SHALL reject QRDA-I files if at least one of the Encounter Performed Discharge Dates is not within the reporting period found in the QRDA (CONF: CMS_0063). | Removed the footnote. See 5.2.1 Reporting Discharge Periods and Submission Periods for allowable CY discharge quarters. |
| ³ The allowable Calendar Year discharge quarters for the HQR programs will be available after the FY 2016 IPPS Final Rule is finalized. | | | |

Table 7 Updated Validation Rules in Table 40. Other Validation Rules for HQR Programs

| CONF. # | Validation Performed | Cause of Error Message and File Rejection | Changes Made |
|----------|---|--|---|
| CMS_0070 | Submission date is not within the submission period. | The validation process compares the upload date with the Production Date Range values stored in internal table. Get this message if the upload date is outside the acceptable range(s), which for the 2016 Reporting Period is from October 1, 2016 through February 28, 2017. | Updated Cause of Error Message and File Rejection |
| CMS_0071 | Data submitted is not a well formed QRDA XML. | Document violates syntax rule in the XML specification, e.g., missing start/end tag or prime elements missing or not properly nested or not properly written. <u>Processing stops immediately on file.</u> | Updated Cause of Error Message and File Rejection |
| CMS_0072 | The document does not conform to QRDA document formats accepted by CMS. | QRDA structure does not pass CDA_SDTC.XSD check. <u>Processing continues</u> on file to identify other Errors/Warnings. | Updated Cause of Error Message and File Rejection |

| CONF. # | Validation Performed | Cause of Error Message and File Rejection | Changes Made |
|----------|--|---|---|
| CMS_0073 | The document does not conform to QRDA document formats accepted by CMS. | Document is not in QRDA Category 1 DSTU Release 3 format -- does not contain all four of the required header templateds including both of the R3 templateds and extensions: HL7 R3: <templated root="2.16.840.1.113883.10.20.24.1.2" extension="2014-12-01"/> 2016 CMS QRDA IG: <templated root="2.16.840.1.113883.10.20.24.1.3" extension="2015-07-01"/> Or this error is produced for empty file or other non-XML file type (e.g., PDF). <u>Processing stops immediately on file.</u> | Updated Cause of Error Message and File Rejection |
| CMS_0074 | The Version Specific Measure Identifier is not valid for the current program year. | Each measure in the QRDA must reference the version specific identifier and only the June 2015 version of the electronic specifications for the EH eCQMs will be accepted for the 2016 reporting year. | Assigned CONF # |
| CMS_0075 | Admission Date is not properly formatted. | Fails validation check for Encounter Performed Admission Date (effectiveTime/low value) as specified in Table 8. | Assigned CONF # |
| CMS_0076 | Discharge Date is not properly formatted. | Fails validation check for Encounter Performed Discharge Date (effectiveTime/high value) as specified in Table 8. | Assigned CONF # |
| CMS_0077 | Reporting Period Start Date (low value) is after the End Date (high value). | Fails validation check. Reporting Parameters Act effectiveTime low (Reporting Period Start Date) is after effectiveTime high (Reporting Period End Date). | Assigned CONF # |
| CMS_0078 | QRDA file size exceeds (5) MB. | The maximum single QRDA-I file size accepted is 5MB, as determined by the receiving system. | Assigned CONF # |

5.2.6 Date and Time Validation

Table 8 Valid Date/Time Format for HQR lists the valid date/time formats that are required by HQR.

Table 8 Valid Date/Time Format for HQR

| Attribute | Date and Time Format Validation Rules | Examples |
|---|--|--|
| <Encounter> <EffectiveTime> <low>(Admission Date) <high>(Discharge Date) | Valid Date/Time Format: YYYYMMDDHHMMSSxUUUU where YYYY - year - range 1900 to 9999 MM - month - range 01 to 12 DD - day - range 01 to 31 (note: true to month and leap years) HH - hour - range 0 to 23 MM - minutes - range 0-59 SS - seconds - range 0-59 x - plus or minus sign UUUU - UTC time shift -1300 thru+1400 | For example, 20150130113045+1200 |
| BirthTime Reporting Period <EffectiveTime> <low>(Start Date) <high>(End Date) | Valid Date/Time Format: YYYYMMDD where YYYY - year - range 1900 to 9999 MM - month - range 01 to 12 DD - day - range 01 to 31 (note: true to month and leap years) | For example, partial date/time such as 2015 or 201503 are not allowed. |
| EffectiveTime (US Realm Header) | Valid Date/Time Format: YYYYMMDDHHMMSSxUUUU YYYYMMDDHHMMxUUUU YYYYMMDDHHxUUUU YYYYMMDDxUUUU YYYYMMDD YYYYMMDDHH YYYYMMDDHHMM YYYYMMDDHHMMSS where YYYY - year - range 1900 to 9999 MM - month - range 01 to 12 DD - day - range 01 to 31 (note: true to month and leap years) | For example, 20160930 is valid. |
| NA | Leap year calculation is validated. | For example, 20150229 is invalid because 2015 is not a leap year. |

| Attribute | Date and Time Format Validation Rules | Examples |
|-----------|---|--|
| NA | The UTC time shift range is -1300 thru +1400. Time shifts outside this range are invalid. The last two digits are 'minutes' so they must be in the range of 00 to 59. | For example, -1262 is invalid because 62 is outside the range of 00 to 59. |

5.2.7 HQR QRDA-I XPath Issue Resolutions

When implementing the measure logic for the 2015 eCQMs for the HQR receiving system, there were a few places identified where there could be a potential for different interpretations of proper location to extract data elements used by some key templates. This required information was not clearly explained in the eCQM specifications or the supporting 2015 eCQM Logic and Implementation Guidance published at the same time with the specifications.

This section provides some additional guidance to EH vendors and providers who are generating QRDA-I output in an attempt to be consistent with the implementation associated with HQR measure calculations.

5.2.8 Reason (V2) Template (Negation Rationale)

The *HL7 CDA R2 Implementation Guide Quality Reporting Document Architecture Category I (QRDA I) Release 1 DSTU Release 3 US Realm, June 2015* (referred to as the base HL7 QRDA-I DSTU R3), *Volume 2* specifies the following:

QDM attribute: Negation Rationale is represented by setting `negationInd="true"` and stating the reason (rationale) in a contained Reason (V2) template. Although Reason (V2) is not explicitly contained in every template, it is available for use in any template.

5.2.8.1 Location within QRDA-I XML

The Reason (V2) template (2.16.840.1.113883.10.20.24.3.88:2014-12-01) will be nested directly within the element containing the `negationInd` attribute. For example, in Medication Administered, the `<act>` element may contain `negationInd="true"`. If it does, then the `<act>` should directly contain the Reason (V2) template. Figure 1 shows a medication administered not done with reason example.

5.2.8.2 Rationale Value Set and Code

The Reason (V2) template will contain the value set and code for the negation rationale (such as Medical Reason or Patient Refusal). Both the value set and code will be referenced from the `<value>` element. The value set is set on the `sdct:valueSet` attribute and the code is set on the `code` attribute. These attributes will be evaluated for measure calculations.

```
<value xsi:type="CD" code="182903008" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED-CT" displayName="Drug declined by patient - reason unknown
(situation)" sdct:valueSet="2.16.840.1.113883.3.117.1.7.1.93"/>
```

5.2.8.3 Start and Stop Datetimes

Whenever the `negationInd` is true, the start and stop datetime will be specified in the Reason (V2) template's `<effectiveTime>` element.

Figure 1: Not Done with Reason Example

```

<!--Medication administered not done, patient refusal: Drug declined by patient - reason
unknown. No "Antithrombotic Therapy" was administered -->
<act classCode="ACT" moodCode="EVN" negationInd="true">
  <templateId root="2.16.840.1.113883.10.20.24.3.42" extension="2014-12-01"/>
  <id root="517d5bbb-03a8-4400-8a78-754321641159" />
  <code code="416118004" displayName="Administration" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED CT"/>
  <statusCode code="completed"/>
  <effectiveTime>
    <!-- QDM Attribute: Start Datetime -->
    <low value="20160328080000+0500"/>
    <!-- QDM Attribute: Stop Datetime -->
    <high value="20160328080000+0500"/>
  </effectiveTime>
  <entryRelationship typeCode="COMP">
    <substanceAdministration classCode="SBADM" moodCode="EVN">
      <!-- Conforms to C-CDA R2 Medication Activity (V2) -->
      <templateId root="2.16.840.1.113883.10.20.22.4.16" extension="2014-06-09"/>
      <!-- Medication, Active (V2) template -->
      <templateId root="2.16.840.1.113883.10.20.24.3.41" extension="2014-12-01"/>
      <id root="9a5f4d94-ccad-4d57-80ea-27737545c7ed" />
      <statusCode code="active"/>
      <effectiveTime xsi:type="IVL_TS">
        <low nullFlavor="NA"/>
      </effectiveTime>
      <consumable>
        <manufacturedProduct classCode="MANU">
          <templateId root="2.16.840.1.113883.10.20.22.4.23" extension="2014-06-09"/>
          <id root="37bfe02a-3e97-4bd6-9197-bbd0ed0de79e" />
          <manufacturedMaterial>
            <code nullFlavor="NA" sdct:valueSet="2.16.840.1.113883.3.117.1.7.1.201">
              <originalText>None of value set: Antithrombotic Therapy</originalText>
            </code>
          </manufacturedMaterial>
        </manufacturedProduct>
      </consumable>
    </substanceAdministration>
  </entryRelationship>
  <!-- QDM Attribute: Reason -->
  <entryRelationship typeCode="RSON">
    <observation classCode="OBS" moodCode="EVN">
      <templateId root="2.16.840.1.113883.10.20.24.3.88" extension="2014-12-01"/>
      <id root="aa348c15-ce6b-4988-b33b-7ae730c710e2"/>
      <code code="77301-0" codeSystem="2.16.840.1.113883.6.1" displayName="Reason care
action performed or not" codeSystemName="LOINC"/>
      <statusCode code="completed"/>
      <effectiveTime>
        <low value=" 20160328080000+0500"/>
      </effectiveTime>
      <value xsi:type="CD" code="182903008" codeSystem="2.16.840.1.113883.6.96"
codeSystemName="SNOMED CT" displayName="Drug declined by patient - reason unknown
(situation)" sdct:valueSet="2.16.840.1.113883.3.117.1.7.1.93"/>
    </observation>
  </entryRelationship>
</act>

```

5.2.9 Medication Administered (V2)

5.2.9.1 Start and Stop Datetimes

The Medication Administered (V2) start and stop datetimes are represented within the <effectiveTime> element directly under the <act> element.

5.2.9.2 Negation Indicator

For Medication Administered Not Done, the negationInd attribute will be located on the <act> element.

5.2.10 Discharge Medication – Active Medication (V2)

5.2.10.1 Start and Stop Datetimes

The Discharge Medication start and stop datetimes are represented within the <effectiveTime> element directly under the <substanceAdministration> element.

5.2.10.2 Negation Indicator

For Discharge Medication Not Done, the negationInd attribute will be located on the <act> element.

5.2.11 Order Templates Start and Stop Datetimes

The QDM 4.2 guide specifies to use the author/time as the start and stop time. The following is taken from the QDM. All Order templates (Device Order, Diagnostic Study Order, Encounter Order, Functional Status Order, Immunization Order, Intervention Order, Laboratory Test, Order, Medication Order, Physical Exam, Order, Procedure Order, and Substance Order) contain the same note:

NOTE: The start and stop datetime of Medication, Order reflects the “author time” of the record in QRDA. This corresponds to when the order was signed.

If the negationInd is set to true on an order template, e.g., Medication Order Not Done, the start and stop time will be read from the effectiveTime of the Reason template.

5.2.12 Facility Location

An Encounter Performed template may contain more than one Facility Location template (CONF: 1140-13025). However, only the Facility Location template appearing first in the xml (i.e., the location nearest the opening tag of the <encounter> element) will be used in the measure calculations.

5.3 PQRS Specific Validations

5.3.1 Date and Time Validation

Many aspects of measures calculation depend on time, as temporal logics are commonly used in specifying eQMs. In general, if a time element is required in measures calculations, (i.e. the time element is identified in a SHALL constraint in the base HL7 QRDA-I DSTU R3 standard or 2016 CMS QRDA IG) then a time, in valid format (see Table 10 Valid Date/Time Format for PQRS), must be provided or PQRS will reject the submission. Table 9 below lists the general validation rules for time elements performed by PQRS.

Table 9 Time Elements Validation Rules

| Time Element Constraint | Validation Rules |
|---|---|
| Time element is specified as a SHALL constraint | Submission will be rejected if the time element is not provided. |
| Time element is specified as a SHOULD constraint | Submission will not be rejected if the time element is not provided. A warning message will be generated. |
| Time element is specified as a MAY constraint | Submissions will not be rejected if the time element is not provided. No error or warning message will be generated. |
| All time elements if were provided, regardless of SHALL/SHOULD/MAY, must be in a valid format | Submissions will be rejected if time (if were provided) is not in a valid format as specified in Table 10 Valid Date/Time Format. |

5.3.2 Valid Date/Time Format

Table 10 Valid Date/Time Format for PQRS lists the valid date/time formats that are required by PQRS.

Table 10 Valid Date/Time Format for PQRS

| Date and Time Format Validation Rules | Examples |
|--|---|
| <p>Valid Date/Time Format: YYYYMMDDHHMMSSxUUUU where</p> <ul style="list-style-type: none"> YYYY - year - range 0001 to 9999 MM - month - range 01 to 12 DD - day - range 01 to 31 (note: true to month and leap years) HH - hour - range 0 to 23 MM - minutes - range 0-59 SS - seconds - range 0-59 x - plus or minus sign UUUU - UTC time shift -1300 thru +1400 | <p>For example, 20150130113045+1200</p> |
| <p>A full Date/Time (YYYYMMDDHHMMSSxUUUU) can always be provided. Only two partial Date/Time formats are allowed, they are:</p> <ul style="list-style-type: none"> YYYYMMDD YYYYMMDDHHMMSS | <p>For example, partial date/time such as 2015 and 201503 are not allowed.</p> |
| <p>Dates are true to month.</p> | <p>For example, 20160931 is invalid because September only has 30 days in it.</p> |
| <p>Leap year calculation is validated.</p> | <p>For example, 20150229 is invalid because 2015 is not a leap year.</p> |
| <p>The UTC time shift range is -1300 thru +1400. Time shifts outside this range are invalid. The last two digits are 'minutes' so they must be in the range of 00 to 59.</p> | <p>For example, -1262 is invalid because 62 is outside the range of 00 to 59.</p> |

5.3.3 Value Set Validation

Table 11 Value Set Validation Rules for QDM Datatypes and QDM Attributes lists the validation rules performed by PQRS to ensure proper code/codeSystem/@sdtc:valueSet combinations are provided in every entry template within Patient Data Section, where value set binding for Quality Data Model (QDM) datatypes and QDM attributes is expected in the entry template according to corresponding eCQM specifications.

Table 11 Value Set Validation Rules for QDM Datatypes and QDM Attributes

| Value Set Validation Rules | Examples and Clarifications |
|--|---|
| <p>Code and code system provided in the @code and @codeSystem attributes must be a valid code and code system from the value set provided in the @sdct:valueSet attribute</p> | <pre data-bbox="771 285 1380 409"><code code="10725009" codeSystem="2.16.840.1.113883.6.96" sdct:valueSet=" 2.16.840.1.113883.3.464.1003.104.12.1011"/></pre> <p>The code and code system in this example must be valid code and code system from the Essential Hypertension value set (2.16.840.1.113883.3.464.1003.104.12.1011) as defined in VSAC.</p> |
| <p>Value set OID provided in the @sdct:valueSet attribute must be from the proper QDM Category that the patient data entry template belongs to.</p> <p>Submissions will be rejected with a value set validation error, if provided value set OID is from a different QDM Category than what is expected by that patient data entry template.</p> | <p>Some examples of QDM Categories are Diagnostic Study, Condition/Diagnosis/Problem, Encounter, and Medication.</p> <p>“Medication Active”, “Medication Order”, and “Medication Administered” patient data entry templates all must include value sets from the “Medication” QDM Category.</p> <p>“Encounter Performed” patient data entry template must include value sets from the “Encounter” QDM Category.</p> |
| <p>For all QDM attributes, value set OID provided in the @sdct:valueSet attribute must be value sets from the Attribute category.</p> | <ul style="list-style-type: none"> <li data-bbox="771 951 1481 1197"> <p>• Example eCQM logic:</p> <p>"Diagnosis, Active: Unilateral Amputation Below or Above Knee, Unspecified Laterality (laterality: Right)"</p> <p>Value set OID provided for the Laterality attribute of “Diagnosis Active” must be a value set from the Attribute category.</p> <li data-bbox="771 1197 1481 1428"> <p>• Example eCQM logic:</p> <p>"Intervention, Order: Followup within 4 weeks (reason: Finding of Hypertension)"</p> <p>Value set OID provided for the Reason attribute of “Intervention Order” must be a value set from the Attribute category.</p> <li data-bbox="771 1428 1481 1785"> <p>• Example eCQM logic:</p> <p>"Laboratory Test, Performed: Mumps Antibody Test (IgG Antibody presence) (result: Positive Finding)"</p> <p>Some QDM data types, such as Laboratory Test Performed and Risk Category Assessment, have a QDM attribute Result. The Result attribute is represented using the “value” attribute of that QRDA template. The value set OID provided for the Result attribute must be a value set from the Attribute category.</p> |

| Value Set Validation Rules | Examples and Clarifications |
|--|--|
| <p>For “not done” reasons, value set OID provided in the @sdtc:valueSet attribute must be value sets from the QDM Category that the not done is negating on.</p> | <ul style="list-style-type: none"> Example eCQM logic: "Risk Category Assessment not done: Medical Reason" for "Falls Screening" during "Measurement Period" Value set OID provided to indicate Medical Reason for this not done logic must be a value set from the “Risk Category Assessment” QDM Category. <p>Note: Medical/Patient/System reason for “not done” is represented using the Reason template (id: 2.16.840.1.113883.10.20.24.3.88:2014-12-01). The QDM attribute Reason is also represented using the same Reason template. However, proper value set category validations are performed differently for “not done” reasons and Reason attribute.</p> |

5.3.4 HIC Number Validation

Patient's Medicare Health Insurance Claim (HIC) Number must be properly formatted to support measures calculation. A HIC number must conform to the format rule defined in section 12.2 Validation Rules for EP of the 2016 CMS QRDA IG. Submissions with improperly formatted HIC numbers will be rejected.

5.3.5 UCUM Codes Validation for Result with PQ Datatype

The Result (V2) template (2.16.840.1.113883.10.20.24.3.87:2014-12-01) contains the following constraint:

If xsi:type=PQ, then @units shall be drawn from Unified Code for Units of Measure (UCUM) 2.16.840.1.113883.6.8 code system. Additional constraint is dependent on criteria in the corresponding eMeasure (CONF:1140-16702).

Because measure calculation currently does not use @units value and therefore, for CONF:1140-16702, PQRS does not validate the actual unit provided in the @units attribute against the UCUM code system.

5.3.6 Validation is Not Always Done on Clinical ‘Results’

Depending on the measure logic in an eCQM specification, the data types of expected value for a Result QDM attribute of a QDM datatype such as Laboratory Test Performed and Risk Category Assessment could vary.

A result 'value' element can take many forms based on its xsi:type. If the xsi:type is casted to "CD", "CE", "CO", or "CV" data types, then an @code, @codeSystem, @sdtc:valueSet must be provided and are validated according to the rules specified in Section 5.3.3 Value Set Validation. If the xsi:type is casted to anything other than "CD", "CE", "CO", or "CV" data types, then no value set validation is performed.

5.3.7 A “code” Attribute is Not Required for Clinical Codes in ‘Not Done’ – Negated Entry Templates

Some eCQM specifications contain measure logic that includes “not done”, such as “Risk Category Assessment not done: Medical Reason”. To report this in QRDA-I, the negation indicator (negationInd) attribute of an appropriate entry template is set to 'true', @nullFlavor="NA" together with the value set OID representing the act that was not performed; an individual value from the respective value set should not be reported. The clinical intent is to indicate that “all of these codes represented by the value set were not done” and the reason is one of the codes from the reason value set (for example, the Medical Reason value set).

Therefore, if negationInd is set to ‘true’ for a given entry template, then the "code" attribute for the associated clinical code is optional, as is the "codeSystem" attribute. The "sdtc:valueSet" attribute is still required. Even though the "code" and "codeSystem" attributes are optional, if they are provided, the submission will be rejected if that "code" and "codeSystem" are not in the provided "sdtc:valueSet".

5.3.8 Data Submission Vendor as legalAuthenticator

If a Data Submission Vendor (DSV) is used for submitting QRDA-I files to PQRS, DSV information shall be reported in the header element legalAuthenticator, see Table 12 for details.

SHALL contain exactly one [1..1] **legalAuthenticator** (CONF:1140-13817).

Table 12 DSV TIN in legalAuthenticator

| XPath | Note |
|--|--|
| //ClinicalDocument/legalAuthenticator/assignedEntity/representedOrganization/id/@root | The root can be any OID. |
| //ClinicalDocument/legalAuthenticator/assignedEntity/representedOrganization/id/@extension | This is the DSV's Tax Identification Number (TIN). The @extension of the first occurrence of this id element in a QRDA-I file will be treated as the DSV TIN. |
| //ClinicalDocument/legalAuthenticator/assignedEntity/representedOrganization/name | This is the DSV name. |

5.4 PQRS Patient Data Section Entry Templates

This section provides the Patient Data Section entry templates details for entry templates that are relevant to the QRDA-I submissions to the PQRS programs.²

The “PQRS_” prefix is used as the conformance number convention to indicate new conformance statements that are specific to PQRS.

² This section and Section 5.3 PQRS Specific Validations in this Appendix provide the detailed information referred to by the 2016 CMS QRDA IG (page 31, 5.2.3.2 Entry Template Requirements for PQRS).

The “_P01” postfix is used to indicate that a conformance statement from the base HL7 QRDA-I DSTU R3 standard is further constrained by PQRS.

5.4.1 Communication

5.4.1.1 Communication: From Patient to Provider

Table 13 Communication: From Patient to Provider Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Communication From Patient to Provider Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.2"] [templateId/@extension="2014-12-01"]/code/ | @code | SHALL | 1140-26946 PQRS_P0018 |
| Communication From Patient to Provider Code System: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.2"] [templateId/@extension="2014-12-01"]/code/ | @codeSystem | SHALL | 1140-26946 PQRS_P0019 |
| Communication From Patient to Provider Value Set: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.2"] [templateId/@extension="2014-12-01"]/code/ | @sdct:valueSet | SHALL | 1140-26946 1140-27578 |
| Communication From Patient to Provider Status Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.2"] [templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-11620 |
| Communication From Patient to Provider Effective Start Date Time: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.2"] [templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-11622 1140-27543 |
| Communication From Patient to Provider Effective End Date Time: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.2"] [templateId/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1140-11622 1140-27544 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-26946).
 - a. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0018).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0019).
 - c. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27578).
2. **SHALL** contain exactly one [1..1] **statusCode="completed"**, which **SHALL** be selected from CodeSystem ActStatus (urn:oid:2.16.840.1.113883.5.14) (CONF:1140-11620).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11622).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27543).

b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27544).

5.4.1.2 Communication: From Provider to Provider

Table 14 Communication: From Provider to Provider Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Communication From Provider to Provider Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.4"] [templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-26950 PQRS_P0027 |
| Communication From Provider to Provider Code System: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.4"] [templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-26950 PQRS_P0028 |
| Communication From Provider to Provider Value Set: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.4"] [templateId/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-26950 1140-27581 |
| Communication From Provider to Provider Status Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.4"] [templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-11822 |
| Communication From Provider to Provider Effective Start Date Time: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.4"] [templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-11823 1140-27547 |
| Communication From Provider to Provider Effective End Date Time: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.4"] [templateId/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1140-11823 1140-27548 |
| Communication From Provider to Provider Fulfillment ID: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.4"] [templateId/@extension="2014-12-01"]/sdtc:inFulfillmentOf1[@typeCode="FLFS"]/[templateId/@root="2.16.840.1.113883.10.20.24.3.126"] [templateId/@extension="2014-12-01"]/sdtc:actReference[@classCode][@moodCode]/ | sdtc:id | MAY | PQRS_P0023 1140-28381 1140-28379 1140-28382 1140-28383 1140-28380 1140-28386 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Communication From Provider to Provider Not Done Flag: //act[templated/@root="2.16.840.1.113883.10.20.24.3.4"][[templated/@extension="2014-12-01"]/ | @negationInd | MAY | 1140-28043 |
| Communication From Provider to Provider Not Done Reason Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.4"][[templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][[templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | PQRS_P0065 PQRS_P0066 PQRS_P0067 1140-11367 PQRS_P0029 |
| Communication From Provider to Provider Not Done Reason Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.4"][[templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][[templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | PQRS_P0065 PQRS_P0066 PQRS_P0067 1140-11367 PQRS_P0030 |
| Communication From Provider to Provider Not Done Reason Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.4"][[templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][[templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdct:valueSet | SHALL | PQRS_P0065 PQRS_P0066 PQRS_P0067 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-26950).
 - a. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0027).
 - b. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0028).
 - c. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27581).
2. **SHALL** contain exactly one [1..1] **statusCode="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-11822).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11823).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27547).
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27548).
4. **MAY** contain zero or one [0..1] **sdct:inFulfillmentOf1** (CONF:PQRS_P0023) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="FLFS"** Fulfills (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF: 1140-28381).
 - b. **SHALL** contain exactly one [1..1] **sdct:templated** (CONF:1140-28379) such that it

- i. **SHALL** contain exactly one [1..1] **@root="2.16.840.1.113883.10.20.24.3.126"** (CONF:1140-28382).
- ii. **SHALL** contain exactly one [1..1] **@extension="2014-12-01"** (CONF:1140-28383).
- c. **SHALL** contain exactly one [1..1] **sdct:actReference** (CONF:1140-28380).
The ID must equal another entry/id in the same document instance. Application Software must be responsible for resolving the identifier back to its original object and then rendering the information in the correct place in the containing section's narrative text. The ID cannot have Null value (e.g., nullFlavor is not allowed).
 - i. This **sdct:actReference SHALL** contain at least one [1..*] **sdct:id** (CONF:1140-28386).
- 5. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28043).
- 6. If Communication From Provider to Provider is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0065) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF: PQRS_P0066).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF: PQRS_P0067).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - a. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0029).
 - b. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0030).
 - c. This **value SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27657).

5.4.2 Device

5.4.2.1 Device Applied

Table 15 Device Applied Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|------------|
| Device Applied Code: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.7"]/[templated/@extension="2014-12-01"]/participant/participantRole/playingDevice[@classCode="DEV"]/code/ | @code | SHALL | 1140-12396 |
| | | | 1140-12397 |
| | | | 1140-12398 |
| | | | 1140-12400 |
| | | | 1140-12401 |
| | | | 1140-12402 |
| | | | PQRS_P0033 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Device Applied Code System: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.7"]/[templated/@extension="2014-12-01"]/participant/participantRole/playingDevice[@classCode="DEV"]/code/ | @codeSystem | SHALL | 1140-12396 1140-12397 1140-12398 1140-12400 1140-12401 1140-12402 PQRS_P0034 |
| Device Applied Value Set: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.7"]/[templated/@extension="2014-12-01"]/participant/participantRole/playingDevice[@classCode="DEV"]/code/ | @sdtc:valueSet | SHALL | 1140-12396 1140-12397 1140-12398 1140-12400 1140-12401 1140-12402 1140-27584 |
| Device Applied Status Code: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.7"]/[templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-12394 |
| Device Applied Effective Start Date Time: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.7"]/[templated/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-12395 1140-27537 |
| Device Applied Effective End Date Time: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.7"]/[templated/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1140-12395 1140-27538 |

1. **SHALL** contain exactly one [1..1] **participant** (CONF:1140-12396) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="DEV"** device, which **SHALL** be selected from CodeSystem HL7ParticipationType (urn:oid:2.16.840.1.113883.5.90) (CONF:1140-12397).
 - b. **SHALL** contain exactly one [1..1] **participantRole** (CONF:1140-12398).
 - i. This participantRole **SHALL** contain exactly one [1..1] **@classCode="MANU"** manufactured product, which **SHALL** be selected from CodeSystem RoleClass (urn:oid:2.16.840.1.113883.5.110) (CONF:1140-12399).
 - ii. This participantRole **SHALL** contain exactly one [1..1] **playingDevice** (CONF:1140-12400).
 - a. This playingDevice **SHALL** contain exactly one [1..1] **@classCode="DEV"** device, which **SHALL** be selected from CodeSystem HL7ParticipationType (urn:oid:2.16.840.1.113883.5.90) (CONF:1140-12401).

- i. This playingDevice **SHALL** contain exactly one [1..1] **code** (CONF:1140-12402).
 - i. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0033).
 - ii. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0034).
 - iii. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27584).
- 2. **SHALL** contain exactly one [1..1] **statusCode="completed"**, which **SHALL** be selected from CodeSystem ActStatus (urn:oid:2.16.840.1.113883.5.14) (CONF:1140-12394).
- 3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-12395).
 - a. This **effectiveTime SHALL** contain exactly one [1..1] low (CONF:1140-27537).
 - b. This **effectiveTime MAY** contain zero or one [0..1] high (CONF:1140-27538).

5.4.3 Diagnosis

5.4.3.1 Diagnosis Active

The QDM data type “Diagnosis, Active” is represented by the Diagnosis Active Concern Act (2.16.840.1.113883.10.20.24.3.121:2014-12-01) along with its contained template Diagnosis Active (2.16.840.1.113883.10.20.24.3.11:2014-12-01).

Table 16 Diagnosis Active Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Diagnosis Active Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.121"][templateId/@extension="2014-12-01"]/entryRelationship/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.11"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | 1140-28142 1140-28151 1140-28145 1140-12008 PQRS_P0035 |
| Diagnosis Active Code System: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.121"][templateId/@extension="2014-12-01"]/entryRelationship/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.11"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | 1140-28142 1140-28151 1140-28145 1140-12008 PQRS_P0036 |
| Diagnosis Active Value Set: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.121"][templateId/@extension="2014-12-01"]/entryRelationship/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.11"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | 1140-28142 1140-28151 1140-28145 1140-12008 1140-27588 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Diagnosis Active Laterality Code: //act[templatelid/@root="2.16.840.1.113883.10.20.24.3.121"][templatelid/@extension="2014-12-01"]/entryRelationship/observation[templatelid/@root="2.16.840.1.113883.10.20.24.3.11"][templatelid/@extension="2014-12-01"]/value[@xsi:type="CD"]/qualifier/value[@xsi:type="CD"]/ | @code | SHALL | 1140-28142 1140-28151 1140-28145 1140-12009 1140-12011 PQRS_P0037 |
| Diagnosis Active Laterality Code System: //act[templatelid/@root="2.16.840.1.113883.10.20.24.3.121"][templatelid/@extension="2014-12-01"]/entryRelationship/observation[templatelid/@root="2.16.840.1.113883.10.20.24.3.11"][templatelid/@extension="2014-12-01"]/value[@xsi:type="CD"]/qualifier/value[@xsi:type="CD"]/ | @codeSystem | SHALL | 1140-28142 1140-28151 1140-28145 1140-12009 1140-12011 PQRS_P0038 |
| Diagnosis Active Laterality Value Set: //act[templatelid/@root="2.16.840.1.113883.10.20.24.3.121"][templatelid/@extension="2014-12-01"]/entryRelationship/observation[templatelid/@root="2.16.840.1.113883.10.20.24.3.11"][templatelid/@extension="2014-12-01"]/value[@xsi:type="CD"]/qualifier/value[@xsi:type="CD"]/ | @sdct:valueSet | SHALL | 1140-28142 1140-28151 1140-28145 1140-12009 1140-12011 PQRS_P0009 |
| Diagnosis Active Status Code: //act[templatelid/@root="2.16.840.1.113883.10.20.24.3.121"][templatelid/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-28144 1140-28150 |
| Diagnosis Active Effective Start Date Time: //act[templatelid/@root="2.16.840.1.113883.10.20.24.3.121"][templatelid/@extension="2014-12-01"]/entryRelationship/observation[templatelid/@root="2.16.840.1.113883.10.20.24.3.11"][templatelid/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-28142 1140-28151 1140-28145 1140-11983 1140-11984 PQRS_P0182 |
| Diagnosis Active Effective End Date Time: //act[templatelid/@root="2.16.840.1.113883.10.20.24.3.121"][templatelid/@extension="2014-12-01"]/entryRelationship/observation[templatelid/@root="2.16.840.1.113883.10.20.24.3.11"][templatelid/@extension="2014-12-01"]/effectiveTime | high | MAY | 1140-28142 1140-28151 1140-28145 1140-11983 PQRS_P0017 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|---|
| Diagnosis Active Ordinality Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.121"][templated/@extension="2014-12-01"]/entryRelationship/observation[templated/@root="2.16.840.1.113883.10.20.24.3.11"][templated/@extension="2014-12-01"]/priorityCode/ | @code | SHALL | 1140-28142 1140-28151 1140-28145 1140-14547 PQRS_P0040 |
| Diagnosis Active Ordinality Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.121"][templated/@extension="2014-12-01"]/entryRelationship/observation[templated/@root="2.16.840.1.113883.10.20.24.3.11"][templated/@extension="2014-12-01"]/priorityCode/ | @codeSystem | SHALL | 1140-28142 1140-28151 1140-28145 1140-14547 PQRS_P0041 |
| Diagnosis Active Ordinality Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.121"][templated/@extension="2014-12-01"]/entryRelationship/observation[templated/@root="2.16.840.1.113883.10.20.24.3.11"][templated/@extension="2014-12-01"]/priorityCode/ | @sdtc:valueSet | SHALL | 1140-28142 1140-28151 1140-28145 1140-14547 PQRS_P0014 |
| Diagnosis Active Severity Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.121"][templated/@extension="2014-12-01"]/entryRelationship/observation[templated/@root="2.16.840.1.113883.10.20.24.3.11"][templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.22.4.8"][templated/@extension="2014-06-09"]/value[@xsi:type="CD"/] | @code | SHALL | 1140-28142 1140-28151 1140-28145 1140-11996 1140-11997 1140-11998 1098-7356 PQRS_P0042 |
| Diagnosis Active Severity Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.121"][templated/@extension="2014-12-01"]/entryRelationship/observation[templated/@root="2.16.840.1.113883.10.20.24.3.11"][templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.22.4.8"][templated/@extension="2014-06-09"]/value[@xsi:type="CD"/] | @codeSystem | SHALL | 1140-28142 1140-28151 1140-28145 1140-11996 1140-11997 1140-11998 1098-7356 PQRS_P0044 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|---|
| Diagnosis Active Severity Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.121"][templated/@extension="2014-12-01"]/entryRelationship/observation[templated/@root="2.16.840.1.113883.10.20.24.3.11"][templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.22.4.8"][templated/@extension="2014-06-09"]/value[@xsi:type="CD"/] | @sdct:valueSet | SHALL | 1140-28142 1140-28151 1140-28145 1140-11996 1140-11997 1140-11998 1098-7356 PQRS_P0008 |
| Diagnosis Active Severity Status Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.121"][templated/@extension="2014-1201"]/entryRelationship/observation[templated/@root="2.16.840.1.113883.10.20.24.3.11"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.22.4.8"][templated/@extension="2014-06-09"]/statusCode/ | @code | SHALL | 1140-28142 1140-28151 1140-28145 1140-11996 1140-11997 1140-11998 1098-7352 1098-19115 |

1. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-28144).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-28150).
2. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:1140-28142) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-28151).
 - b. **SHALL** contain exactly one [1..1] **Diagnosis Active (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.11:2014-12-01) (CONF:1140-28145).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-12008).
 1. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0035).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0036).
 3. This value **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27588).
 4. This value **MAY** contain zero or more [0..*] **qualifier** (CONF:1140-12009).
 - a. The qualifier, if present, **SHALL** contain exactly one [1..1] **value** (CONF:1140-12011).
 - i. If **@xsi:type="CD"** then this **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0037).
 - ii. If **@xsi:type="CD"** then this **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0038).

- iii. If **@xsi:type="CD"** then this **value SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0009).
 - ii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11983).
 - 1. This **effectiveTime SHALL** contain exactly one [1..1] **low** (CONF:1140-11984).
 - a. This **low SHALL** contain exactly one [1..1] **@value** (CONF:PQRS_P0182).
 - 2. This **effectiveTime MAY** contain zero or one [0..1] **high** (CONF:PQRS_P0017).
 - iii. **MAY** contain zero or one [0..1] **priorityCode** (CONF:1140-14547).
 - 1. The **priorityCode**, if present, **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0040).
 - 2. The **priorityCode**, if present, **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0041).
 - 3. The **priorityCode**, if present, **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0014).
 - iv. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1140-11996) such that it
 - 1. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-11997).
 - 2. **SHALL** contain exactly one [1..1] **Severity Observation (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.8:2014-06-09) (CONF:1140-11998).
 - a. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"**, where the code **SHALL** be selected from ValueSet **Problem Severity** urn:oid:2.16.840.1.113883.3.88.12.3221.6.8 **DYNAMIC** (CONF:1098-7356).
 - b. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0042).
 - c. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0044).
 - d. This **value SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0008).
 - e. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-7352).
 - i. This **statusCode SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:1098-19115).

5.4.3.2 Diagnosis Family History

The QDM data type “Diagnosis Family History” is represented by the Diagnosis Family History (V2) (2.16.840.1.113883.10.20.24.3.12:2014-12-01) along with its contained template Diagnosis Family History Observation (2.16.840.1.113883.10.20.24.3.112:2014-12-01).

Table 17 Diagnosis Family History Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|--------|---|
| Diagnosis Family History Subject Code: //organizer[templateId/@root="2.16.840.1.113883.10.20.24.3.12"][templateId/@extension="2014-12-01"]/subject/relatedSubject/ | code | SHALL | 1098-8609 1098-15244 1098-15246 1098-15247 |
| Diagnosis Family History Status Code: //organizer[templateId/@root="2.16.840.1.113883.10.20.24.3.12"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-8602 1098-19099 |
| Diagnosis Family History Subject Administrative Gender: //organizer[templateId/@root="2.16.840.1.113883.10.20.24.3.12"][templateId/@extension="2014-12-01"]/subject/relatedSubject/subject/administrativeGenderCode/ | @code | SHALL | 1098-8609 1098-15244 1098-15246 1098-15248 1098-15974 1098-15975 |
| Diagnosis Family History Subject Birth Date: //organizer[templateId/@root="2.16.840.1.113883.10.20.24.3.12"][templateId/@extension="2014-12-01"]/subject/relatedSubject/subject/birthTime/ | @value | SHOULD | 1098-8609 1098-15244 1098-15246 1098-15248 1098-15974 1098-15976 |
| Diagnosis Family History Observation Start Date Time: //organizer[templateId/@root="2.16.840.1.113883.10.20.24.3.12"][templateId/@extension="2014-12-01"]/component/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.112"][templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-27715 1140-27716 1140-27690 1140-27692 |
| Diagnosis Family History Observation End Date Time: //organizer[templateId/@root="2.16.840.1.113883.10.20.24.3.12"][templateId/@extension="2014-12-01"]/component/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.112"][templateId/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1140-27715 1140-27716 1140-27690 1140-27693 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Diagnosis Family History Observation Code: //organizer[templated/@root="2.16.840.1.113883.10.20.24.3.12"][templated/@extension="2014-12-01"]/component/observation[templated/@root="2.16.840.1.113883.10.20.24.3.112"][templated/@extension="2014-12-01"/ value[@xsi:type="CD"/ | @code | SHALL | 1140-27715 1140-27716 1140-27688 PQRS_P0046 |
| Diagnosis Family History Observation Code System: //organizer[templated/@root="2.16.840.1.113883.10.20.24.3.12"][templated/@extension="2014-12-01"]/component/observation[templated/@root="2.16.840.1.113883.10.20.24.3.112"][templated/@extension="2014-12-01"/ value[@xsi:type="CD"/ | @codeSystem | SHALL | 1140-27715 1140-27716 1140-27688 PQRS_P0071 |
| Diagnosis Family History Observation Value Set: //organizer[templated/@root="2.16.840.1.113883.10.20.24.3.12"][templated/@extension="2014-12-01"]/component/observation[templated/@root="2.16.840.1.113883.10.20.24.3.112"][templated/@extension="2014-12-01"/ value[@xsi:type="CD"/ | @sdtc:valueSet | SHALL | 1140-27715 1140-27716 1140-27688 1140-27694_P01 |

1. **SHALL** contain exactly one [1..1] **subject** (CONF:1098-8609).
 - a. This subject **SHALL** contain exactly one [1..1] **relatedSubject** (CONF:1098-15244).
 - i. This relatedSubject **SHALL** contain exactly one [1..1] **@classCode="PRS" Person** (CodeSystem: EntityClass urn:oid:2.16.840.1.113883.5.41 **STATIC**) (CONF:1098-15245).
 - ii. This relatedSubject **SHALL** contain exactly one [1..1] **code** (CONF:1098-15246).
 1. This code **SHALL** contain exactly one [1..1] **@code**, which **SHOULD** be selected from ValueSet **Family Member Value Set** urn:oid:2.16.840.1.113883.1.11.19579 **DYNAMIC** (CONF:1098-15247).
 - iii. This relatedSubject **SHOULD** contain zero or one [0..1] **subject** (CONF:1098-15248).
 1. The subject, if present, **SHALL** contain exactly one [1..1] **administrativeGenderCode** (CONF:1098-15974).
 - a. This administrativeGenderCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Administrative Gender (HL7 V3)** urn:oid:2.16.840.1.113883.1.11.1 **DYNAMIC** (CONF:1098-15975).
 2. The subject, if present, **SHOULD** contain zero or one [0..1] **birthTime** (CONF:1098-15976).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-8602).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed" Completed** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:1098-19099).
3. **SHALL** contain at least one [1..*] **component** (CONF:1140-27715) such that it

- a. **SHALL** contain exactly one [1..1] **Diagnosis Family History Observation** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.112:2014-12-01) (CONF:1140-27716).
 - i. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-27690).
 - 1. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27692).
 - 2. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27693).
 - ii. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-27688).
 - 1. This **value** **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0046).
 - 2. This **value** **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0071).
 - 3. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27694_P01).

5.4.3.3 Diagnosis Inactive

The QDM data type “Diagnosis, Inactive” is represented by the Diagnosis Inactive Concern Act (2.16.840.1.113883.10.20.24.3.123:2014-12-01) along with its contained template Diagnosis Inactive (2.16.840.1.113883.10.20.24.3.13:2014-12-01).

Table 18 Diagnosis Inactive Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Diagnosis Inactive Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.123"][[templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="SUBJ"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.13"][[templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | 1140-28164 1140-28168 1140-28167 1140-27611 PQRS_P0072 |
| Diagnosis Inactive Code System: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.123"][[templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="SUBJ"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.13"][[templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | 1140-28164 1140-28168 1140-28167 1140-27611 PQRS_P0073 |
| Diagnosis Inactive Value Set: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.123"][[templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="SUBJ"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.13"][[templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | 1140-28164 1140-28168 1140-28167 1140-27611 1140-27612 |
| Diagnosis Inactive Status Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.123"][[templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-28164 1140-28171 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Diagnosis Inactive Effective Start Date Time: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.123"][[templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="SUBJ"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.13"][[templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-28164 1140-28168 1140-28167 1140-12028 1140-12029 PQRS_P0171 |
| Diagnosis Inactive Effective End Date Time: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.123"][[templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="SUBJ"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.13"][[templateId/@extension="2014-12-01"]/effectiveTime/ | high | SHALL | 1140-28164 1140-28168 1140-28167 1140-12028 1140-12030 |

1. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-28166).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="suspended"** Suspended (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-28171).
2. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:1140-28164) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-28168).
 - b. **SHALL** contain exactly one [1..1] **Diagnosis Inactive (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.13:2014-12-01) (CONF:1140-28167).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-27611).
 1. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0072).
 2. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0073).
 3. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27612).
 - ii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-12028).
 1. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-12029).
 - a. This **low SHALL** contain exactly one [1..1] **@value** (CONF:PQRS_P0171).
 2. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:1140-12030).

5.4.3.4 Diagnosis Resolved

The QDM data type “Diagnosis, Resolved” is represented by the Diagnosis Resolved Concern Act (2.16.840.1.113883.10.20.24.3.125:2014-12-01) along with its contained template Diagnosis Resolved (2.16.840.1.113883.10.20.24.3.14:2014-12-01).

Table 19 Diagnosis Resolved Constraints

| Parameter Name: XPath | Attribute / Element | Verb | CONF# |
|---|---------------------|-------|--|
| Diagnosis Resolved Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.125"][templated/@extension="2014-12-01"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.14"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"/] | @code | SHALL | 1140-28174 1140-28178 1140-28177 1140-27613 PQRS_P0074 |
| Diagnosis Resolved Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.125"][templated/@extension="2014-12-01"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.14"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"/] | @codeSystem | SHALL | 1140-28174 1140-28178 1140-28177 1140-27613 PQRS_P0075 |
| Diagnosis Resolved Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.125"][templated/@extension="2014-12-01"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.14"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"/] | @sdtc:valueSet | SHALL | 1140-28174 1140-28178 1140-28177 1140-27613 1140-27614 |
| Diagnosis Resolved Status Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.125"][templated/@extension="2014-12-01"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.14"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-28176 1140-28181 |
| Diagnosis Resolved Effective Start Date Time: //act[templated/@root="2.16.840.1.113883.10.20.24.3.125"][templated/@extension="2014-12-01"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.14"][templated/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-28174 1140-28178 1140-28177 1140-12061 1140-12062 PQRS_P0172 |
| Diagnosis Resolved Effective End Date Time: //act[templated/@root="2.16.840.1.113883.10.20.24.3.125"][templated/@extension="2014-12-01"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.14"][templated/@extension="2014-12-01"]/effectiveTime/ | high | SHALL | 1140-28174 1140-28178 1140-28177 1140-12061 1140-12063 |

1. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-28176).

- a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-28181).
- 2. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:1140-28174) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="SUBJ"** Has subject (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-28178).
 - b. **SHALL** contain exactly one [1..1] **Diagnosis Resolved (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.14:2014-12-01) (CONF:1140-28177).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-27613).
 - 1. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0074).
 - 2. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0075).
 - 3. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27614).
 - ii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-12061).
 - 1. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-12062).
 - a. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0172).
 - 2. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:1140-12063).

5.4.4 Diagnostic Study

5.4.4.1 Diagnostic Study Order

Table 20 Diagnosis Study Order Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--------------------------|
| Diagnostic Study Order Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-27615 PQRS_P0076 |
| Diagnostic Study Order Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-27615 PQRS_P0077 |
| Diagnostic Study Order Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-27615 1140-27616 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Diagnostic Study Order Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-30453 1098-32032 |
| Diagnostic Study Order Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"]/author[templateId/@root="2.16.840.1.113883.10.20.22.4.119"/ | time | SHALL | 1140-27340 1098-31471 |
| Diagnostic Study Order Not Done Flag: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"/ | @negationInd | MAY | 1140-28062 |
| Diagnostic Study Order Not Done Reason Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @code | SHALL | PQRS_P0092 PQRS_P0093 PQRS_P0094 1140-11367 PQRS_P0095 |
| Diagnostic Study Order Not Done Reason Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @codeSystem | SHALL | PQRS_P0092 PQRS_P0093 PQRS_P0094 1140-11367 PQRS_P0096 |
| Diagnostic Study Order Not Done Reason Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.17"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @sdtc:valueSet | SHALL | PQRS_P0092 PQRS_P0093 PQRS_P0094 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27615).
 - a. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0076).
 - b. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0077).
 - c. This **code SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27616).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-30453).

- a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1098-32032).
- 3. **SHALL** contain exactly one [1..1] **Author Participation** (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1140-27340).
 - a. **SHALL** contain exactly one [1..1] **time** (CONF:1098-31471).
- 4. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28062).
- 5. If Diagnostic Study Order is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0092) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0093).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0094).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - a. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0095).
 - b. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0096).
 - c. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.4.2 Diagnostic Study Performed

Table 21 Diagnostic Study Performed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--------------------------|
| Diagnostic Study Performed Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-27617 PQRS_P0078 |
| Diagnostic Study Performed Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-27617 PQRS_P0079 |
| Diagnostic Study Performed Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-27617 1140-27618 |
| Diagnostic Study Performed Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-12956 1140-12957 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Diagnostic Study Performed Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-12958 1140-12959 PQRS_P0173 |
| Diagnostic Study Performed Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"]/effectiveTime/ | high | SHALL | 1140-12958 1140-12960 |
| Diagnostic Study Performed Result Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="REFR"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.87"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/ | @code | SHALL | 1140-27746 1140 28139 1140-27747 1140-16701 PQRS_P0080 |
| Diagnostic Study Performed Result Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="REFR"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.87"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/ | @codeSystem | SHALL | 1140-27746 1140 28139 1140-27747 1140-16701 PQRS_P0081 |
| Diagnostic Study Performed Result Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="REFR"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.87"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/ | @sdct:valueSet | SHALL | 1140-27746 1140 28139 1140-27747 1140-16701 PQRS_P0011 |
| Diagnostic Study Performed Result Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="REFR"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.87"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-27746 1140 28139 1140-27747 1098-7134 1098-14849 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Diagnostic Study Performed Result Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="REFR"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.87"][templateId/@extension="2014-12-01"]/ | effectiveTime | SHALL | 1140-27746 1140-28139 1140-27747 1098-7140 |
| Diagnostic Study Performed Reason Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | 1140-12963 1140-12964 1140-27140 1140-11367 PQRS_P0082 |
| Diagnostic Study Performed Reason System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | 1140-12963 1140-12964 1140-27140 1140-11367 PQRS_P0083 |
| Diagnostic Study Performed Reason Code Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | 1140-12963 1140-12964 1140-27140 1140-11367 1140-27657 |
| Diagnostic Study Performed Reason Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-12963 1140-12964 1140-27140 1140-11364 |
| Diagnostic Study Performed Reason Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/effectiveTime/ | low | SHALL | 1140-12963 1140-12964 1140-27140 1140-11366 1140-27551 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Diagnostic Study Performed Reason Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/effectiveTime/ | high | MAY | 1140-12963 1140-12964 1140-27140 1140-11366 1140-27552 |
| Diagnostic Study Performed Not Done Flag: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"]/ | @negationInd | MAY | 1140-28063 |
| Diagnostic Study Performed Not Done Reason Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | PQRS_P0050 PQRS_P0051 PQRS_P0052 1140-11367 PQRS_P0084 |
| Diagnostic Study Performed Not Done Reason Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | PQRS_P0050 PQRS_P0051 PQRS_P0052 1140-11367 PQRS_P0085 |
| Diagnostic Study Performed Not Done Reason Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.18"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdct:valueSet | SHALL | PQRS_P0050 PQRS_P0051 PQRS_P0052 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27617).
 - a. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0078).
 - b. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0079).
 - c. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27618).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-12956).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-12957).

3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-12958).
 - a. This **effectiveTime** **SHALL** contain exactly one [1..1] **low** (CONF:1140-12959).
 - i. This **low** **SHALL** contain exactly one [1..1] **@value** (CONF:PQRS_P0173).
 - b. This **effectiveTime** **SHALL** contain exactly one [1..1] **high** (CONF:1140-12960).
4. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:1140-27746) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-28139).
 - b. **SHALL** contain exactly one [1..1] **Result (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.87:2014-12-01) (CONF:1140-27747).
 - i. **SHALL** contain exactly one [1..1] **value** (CONF:1140-16701).
 - a. If **xsi:type="PQ"**, then **@units** shall be drawn from Unified Code for Units of Measure (UCUM) 2.16.840.1.113883.6.8 code system. Additional constraint is dependent on criteria in the corresponding eMeasure (CONF:1140-16702).
 - b. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value** **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0080).
 - c. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value** **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0081).
 - d. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value** **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:PQRS_P0011).
 - ii. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-7134).
 - a. This **statusCode** **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Result Status** urn:oid:2.16.840.1.113883.11.20.9.39 **STATIC** 2013-08-09 (CONF:1098-14849).
 - iii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1098-7140).
 Note: Represents the biologically relevant time of the measurement (e.g., the time a blood pressure reading is obtained, the time the blood sample was obtained for a chemistry test).
5. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1140-12963) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-12964).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:1140-27140).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - a. This **value** **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0082).
 - b. This **value** **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0083).
 - c. a. This value **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27657).
 - ii. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-11364).

- a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-11365).
 - iii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11366).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27551).
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27552).
- 6. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28063).
- 7. If Diagnostic Study Performed is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0050) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0051).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0052).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - a. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0084).
 - b. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0085).
 - c. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.5 Encounter

5.4.5.1 Encounter Order

Table 22 Encounter Order Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Encounter Order Code: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.22"][templated/@extension="2014-12-01"]/code/ | @code | SHALL | 1140-11936 PQRS_P0086 |
| Encounter Order Code System: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.22"][templated/@extension="2014-12-01"]/code/ | @codeSystem | SHALL | 1140-11936 PQRS_P0087 |
| Encounter Order Value Set: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.22"][templated/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-11936 1140-27623 |
| Encounter Order Status Code: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.22"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-30439 1098-31880 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Encounter Order Date Time: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.22"][templated/@extension="2014-12-01"]/author[templated/@root="2.16.840.1.113883.10.20.22.4.119"]/ | time | SHALL | 1140-27341 1098-31471 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-11936).
 - a. This **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0086).
 - b. This **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0087).
 - c. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27623).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-30439).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active" Active** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1098-31880).
3. **SHALL** contain exactly one [1..1] **Author Participation** (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1140-27341).
 - a. **SHALL** contain exactly one [1..1] **time** (CONF:1098-31471).

5.4.5.2 Encounter Performed

Table 23 Encounter Performed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Encounter Performed Code: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/code/ | @code | SHALL | 1140-27624 PQRS_P0088 |
| Encounter Performed Code System: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/code/ | @codeSystem | SHALL | 1140-27624 PQRS_P0089 |
| Encounter Performed Value Set: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/code/ | @sdct:valueSet | SHALL | 1140-27624 1140-27625 |
| Encounter Performed Status Code: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-11874 1140-11875 |
| Encounter Performed Effective Start Date Time: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-11876 1140-11877 PQRS_P0174 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Encounter Performed Effective End Date Time: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/effectiveTime/ | high | SHALL | 1140-11876 1140-11878 |
| Encounter Performed Facility Location Code: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/participant[templated/@root="2.16.840.1.113883.10.20.24.3.100"][@typeCode="LOC"]/participantRole[@classCode="SDLOC"]/code/ | @code | SHALL | 1140-13025 67-13372 67-13373 67-13378 PQRS_P0090 |
| Encounter Performed Facility Location Code System: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/participant[templated/@root="2.16.840.1.113883.10.20.24.3.100"][@typeCode="LOC"]/participantRole[@classCode="SDLOC"]/code/ | @codeSystem | SHALL | 1140-13025 67-13372 67-13373 67-13378 PQRS_P0091 |
| Encounter Performed Facility Location Value Set: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/participant[templated/@root="2.16.840.1.113883.10.20.24.3.100"][@typeCode="LOC"]/participantRole[@classCode="SDLOC"]/code/ | @sdtc:valueSet | SHALL | 1140-13025 67-13372 67-13373 67-13378 PQRS_P0010 |
| Encounter Performed Facility Location Effective Start Date Time: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/participant[templated/@root="2.16.840.1.113883.10.20.24.3.100"][@typeCode="LOC"]/time/low/ | @value | SHALL | 1140-13025 67-13371 67-13384 |
| Encounter Performed Facility Location Effective End Date Time: //encounter[templated/@root="2.16.840.1.113883.10.20.24.3.23"][templated/@extension="2014-12-01"]/participant[templated/@root="2.16.840.1.113883.10.20.24.3.100"][@typeCode="LOC"]/time/high/ | @value | SHALL | 1140-13025 67-13371 67-13385 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27624).
 - a. This code SHALL contain exactly one [1..1] @code (CONF:PQRS_P0088).
 - b. This code SHALL contain exactly one [1..1] @codeSystem (CONF:PQRS_P0089).
 - c. This code SHALL contain exactly one [1..1] @sdtc:valueSet (CONF:1140-27625).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-11874).
 - a. This statusCode **SHALL** contain exactly one [1..1] @code="completed" (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-11875).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11876).

- a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-11877).
 - i. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0174).
 - b. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:1140-11878).
4. **MAY** contain zero or more [0..*] **Facility Location** (identifier: urn:oid:2.16.840.1.113883.10.20.24.3.100) (CONF:1140-13025).
- a. **SHALL** contain exactly one [1..1] **time** (CONF:67-13371).
 - i. This time SHALL contain exactly one [1..1] low (CONF:67-13384).
 - ii. This time SHALL contain exactly one [1..1] high (CONF:67-13385).
 - b. **SHALL** contain exactly one [1..1] **participantRole** (CONF:67-13372).
 - i. This participantRole **SHALL** contain exactly one [1..1] **@classCode="SDLOC"** service delivery location (CodeSystem: RoleClass urn:oid:2.16.840.1.113883.5.110 **STATIC**) (CONF:67-13373).
 - ii. This participantRole **SHALL** contain exactly one [1..1] **code** (CONF:67-13378).
 - a. This **code** SHALL contain exactly one [1..1] **@code** (CONF:PQRS_P0090).
 - b. This **code** SHALL contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0091).
 - c. This **code** SHALL contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0010).

5.4.6 Functional Status

5.4.6.1 Functional Status Performed

Table 24 Functional Status Performed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--------------------------|
| Functional Status Performed Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.26"] [templateId/@extension="2014-12-01"]/code/ | @code | SHALL | 1140-27628 PQRS_P0103 |
| Functional Status Performed Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.26"] [templateId/@extension="2014-12-01"]/code/ | @codeSystem | SHALL | 1140-27628 PQRS_P0104 |
| Functional Status Performed Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.26"] [templateId/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-27628 1140-27629 |
| Functional Status Performed Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.26"] [templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-12759 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|---|
| Functional Status Performed Effective Start Date Time: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.26"]/[templated/@extension="2014-12-01"]/low/ | @value | SHALL | 1140-12760 1140-27560 |
| Functional Status Performed Effective End Date Time: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.26"]/[templated/@extension="2014-12-01"]/high/ | @value | MAY | 1140-12760 1140-27561 |
| Functional Status Performed Result: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.26"]/[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.87"]/[templated/@extension="2014-12-01"/] | value | SHALL | 1140-27373 1140-27374 1140-27375 1140-16701 |
| Functional Status Performed Result Status Code: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.26"]/[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.87"]/[templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-27373 1140-28374 1140-27375 1098-7134 1098-14849 |
| Functional Status Performed Result Date Time: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.26"]/[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.87"]/[templated/@extension="2014-12-01"/] | effectiveTime | SHALL | 1140-27373 1140 28374 1140-27375 1098-7140 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27628).
 - a. This **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0103).
 - b. This **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0104).
 - c. This **code SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27629).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-12758).
 - a. This **statusCode SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-12759).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-12760).
 - a. This **effectiveTime SHALL** contain exactly one [1..1] **low** (CONF:1140-27560).
 - b. This **effectiveTime MAY** contain zero or one [0..1] **high** (CONF:1140-27561).
4. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:1140-27373) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-27374).

- b. **SHALL** contain exactly one [1..1] **Result (V2)** (identifier:
urn:hl7ii:2.16.840.1.113883.10.20.24.3.87:2014-12-01) (CONF:1140-27375).
 - i. **SHALL** contain exactly one [1..1] **value** (CONF:1140-16701).
- c. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-7134).
 - i. This statusCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Result Status** urn:oid:2.16.840.1.113883.11.20.9.39 **STATIC** 2013-08-09 (CONF:1098-14849).
- d. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1098-7140).
Note: Represents the biologically relevant time of the measurement (e.g., the time a blood pressure reading is obtained, the time the blood sample was obtained for a chemistry test).

5.4.7 Intervention

5.4.7.1 Intervention Order

Reason for ordering an intervention and reason for an “Intervention Order not done” are both represented using a Reason entryRelationship in the Intervention Order template, however, as noted in Table 25 and conformance statements below, each is associated with a different set of constraints.

Table 25 Intervention Order Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Intervention Order Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.31"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-13746 PQRS_P0105 |
| Intervention Order Code System: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.31"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-13746 PQRS_P0106 |
| Intervention Order Value Set: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.31"][templateId/@extension="2014-12-01"]/code/ | @sdct:valueSet | SHALL | 1140-13746 1140-27632 |
| Intervention Order Status Code: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.31"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-30432 1098-32019 |
| Intervention Order Date Time: //act[templateId/@root="2.16.840.1.113883.10.20.24.3.31"][templateId/@extension="2014-12-01"]/author[templateId/@root="2.16.840.1.113883.10.20.22.4.119"]/ | time | SHALL | 1140-27343 1098-31471 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Intervention Order Reason Code: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | 1140-13756 1140-13757 1140-27159 1140-11367 PQRS_P0107 |
| Intervention Order Reason Code System: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | 1140-13756 1140-13757 1140-27159 1140-11367 PQRS_P0108 |
| Intervention Order Reason Value Set: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | 1140-13756 1140-13757 1140-27159 1140-11367 1140-27657 |
| Intervention Order Reason Status Code: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-13756 1140-13757 1140-27159 1140-11364 |
| Intervention Order Reason Effective Start Date Time: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/effectiveTime/ | low | SHALL | 1140-13756 1140-13757 1140-27159 1140-11366 1140-27551 |
| Intervention Order Reason Effective End Date Time: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/effectiveTime/ | high | MAY | 1140-13756 1140-13757 1140-27159 1140-11366 1140-27552 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Intervention Order Not Done Flag: //act[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"]/ | @negationInd | MAY | 1140-28071 |
| Intervention Order Not Done Reason Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | PQRS_P0097 PQRS_P0098 PQRS_P0058 1140-11367 PQRS_P0109 |
| Intervention Order Not Done Reason Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | PQRS_P0097 PQRS_P0098 PQRS_P0058 1140-11367 PQRS_P0110 |
| Intervention Order Not Done Reason Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.31"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdct:valueSet | SHALL | PQRS_P0097 PQRS_P0098 PQRS_P0058 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-13746).
 - a. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0105).
 - b. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0106).
 - c. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27632).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-30432).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1098-32019).
3. **SHALL** contain exactly one [1..1] **Author Participation** (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1140-27343).
 - a. **SHALL** contain exactly one [1..1] **time** (CONF:1098-31471).
4. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1140-13756) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-13757).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:1140-27159).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - a. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0107).

- b. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0108).
- c. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).
- ii. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-11364).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-11365).
- iii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11366).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27551).
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27552).
- 5. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28071).
- 6. If Intervention Order is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0097) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0098).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0099).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - a. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0109).
 - b. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0110).
 - c. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.7.2 Intervention Performed

Table 26 Intervention Performed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--------------------------|
| Intervention Performed ID: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"]/ | id | SHALL | 1098-8292 |
| Intervention Performed Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-27633 PQRS_P0111 |
| Intervention Performed Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-27633 PQRS_P0112 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|--------------------|-------|--|
| Intervention Performed Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"]/code/ | @sdtc:valu eSet | SHALL | 1140-27633 1140-27634 |
| Intervention Performed Status Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-27362 1140-27363 |
| Intervention Performed Effective Start Date Time: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-13611 1140-13612 PQRS_P0175 |
| Intervention Performed Effective End Date Time: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"]/effectiveTime/ | high | MAY | 1140-13611 1140-13613 |
| Intervention Performed Not Done Flag: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"/ | @negationI nd | MAY | 1140-28072 |
| Intervention Performed Not Done Reason Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @code | SHALL | PQRS_P0056 PQRS_P0057 PQRS_P0058 1140-11367 PQRS_P0113 |
| Intervention Performed Not Done Reason Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @codeSyst em | SHALL | PQRS_P0056 PQRS_P0057 PQRS_P0058 1140-11367 PQRS_P0114 |
| Intervention Performed Not Done Reason Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.32"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @sdtc:valu eSet | SHALL | PQRS_P0056 PQRS_P0057 PQRS_P0058 1140-11367 1140-27657 |

1. **SHALL** contain at least one [1..*] **id** (CONF:1098-8292).
2. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27633).

- a. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0111).
- b. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0112).
- c. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27634).
- 3. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-27362).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-27363).
- 4. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-13611).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-13612).
 - i. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0175).
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-13613).
- 5. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28072).
- 6. If Intervention Performed is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0056) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0057).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0058).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - a. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0113).
 - b. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0114).
 - c. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.8 Laboratory Test

5.4.8.1 Laboratory Test Order

Table 27 Laboratory Test Order Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Laboratory Test Order Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-11957 PQRS_P0115 |
| Laboratory Test Order Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-27957 PQRS_P0116 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Laboratory Test Order Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"]/code/ | @sdct:valueSet | SHALL | 1140-11957 1140-27636 |
| Laboratory Test Order Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-30453 1098-32032 |
| Laboratory Test Order Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"]/author[templateId/@root="2.16.840.1.113883.10.20.22.4.19"/ | time | SHALL | 1140-27344 1098-31471 |
| Laboratory Test Order Not Done Flag: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"/ | @negationInd | MAY | 1140-28076 |
| Laboratory Test Order Not Done Reason Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @code | SHALL | PQRS_P0100 PQRS_P0101 PQRS_P0102 1140-11367 PQRS_P0117 |
| Laboratory Test Order Not Done Reason Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @codeSystem | SHALL | PQRS_P0100 PQRS_P0101 PQRS_P0102 1140-11367 PQRS_P0118 |
| Laboratory Test Order Not Done Reason Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.37"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"/ | @sdct:valueSet | SHALL | PQRS_P0100 PQRS_P0101 PQRS_P0102 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-11957).
 - a. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0115).

- b. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0116).
- c. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27636).
- 2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-30453).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1098-32032).
- 3. **SHALL** contain exactly one [1..1] **Author Participation** (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1140-27344).
 - a. **SHALL** contain exactly one [1..1] **time** (CONF:1098-31471).
- 4. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28076).
- 5. If Laboratory Test Performed is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0100) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0101).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0102).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - 1. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0117).
 - 2. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0118).
 - 3. This **value SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.8.2 Laboratory Test Performed

Table 28 Laboratory Test Performed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Laboratory Test Performed Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-27637 PQRS_P0119 |
| Laboratory Test Performed Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-27637 PQRS_P0120 |
| Laboratory Test Performed Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-27637 1140-27638 |
| Laboratory Test Performed Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-11709 1140-11710 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|--------|--|
| Laboratory Test Performed Effective Start Date Time: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12- 01"]/effectiveTime/low/ | @value | SHALL | 1140-11711 1140-11712 PQRS_P0176 |
| Laboratory Test Performed Effective End Date Time: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12- 01"]/effectiveTime/ | high | SHALL | 1140-11711 1140-11713 |
| Laboratory Test Performed Result: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12-01"/] | value | SHOULD | 1098-7143 1098-31484 |
| Laboratory Test Performed Result Code: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12- 01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"/] | @code | SHALL | 1098-7143 1098-31484 PQRS_P0121 |
| Laboratory Test Performed Result Code System: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12- 01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"/] | @codeSystem | SHALL | 1098-7143 1098-31484 PQRS_P0122 |
| Laboratory Test Performed Result Value Set: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12- 01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"/] | @sdtc:valueSet | SHALL | 1098-7143 1098-31484 PQRS_P0012 |
| Laboratory Test Performed Not Done Flag: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12-01"/] | @negationInd | MAY | 1140-28077 |
| Laboratory Test Performed Not Done Reason Code: //observation[templated/@root="2.16.840.1.113883.10.2 0.24.3.38"][templated/@extension="2014-12- 01"][@negationInd="true"]/entryRelationship[@typeCode= "RSON"]/observation[templated/@root="2.16.840.1.1138 83.10.20.24.3.88"][templated/@extension="2014-12- 01"]/value[@xsi:type="CD"/] | @code | SHALL | PQRS_P0053 PQRS_P0054 PQRS_P0055 1140-11367 PQRS_P0123 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Laboratory Test Performed Not Done Reason Code System: <pre>//observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/</pre> | @codeSystem | SHALL | PQRS_P0053 PQRS_P0054 PQRS_P0055 1140-11367 PQRS_P0124 |
| Laboratory Test Performed Not Done Reason Value Set: <pre>//observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.38"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/</pre> | @sdct:valueSet | SHALL | PQRS_P0053 PQRS_P0054 PQRS_P0055 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27637).
 - a. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0119).
 - b. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0120).
 - c. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27638).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-11709).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-11710).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11711).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-11712).
 - i. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0176).
 - b. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:1140-11713).
4. **SHOULD** contain zero or one [0..1] **value**, which **SHOULD** be selected from CodeSystem SNOMED CT (urn:oid:2.16.840.1.113883.6.96) (CONF:1098-7143).
 - a. If Observation/value is a physical quantity (xsi:type="PQ"), the unit of measure **SHALL** be selected from ValueSet UnitsOfMeasureCaseSensitive 2.16.840.1.113883.1.11.12839 **DYNAMIC** (CONF:1098-31484).
 - b. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0121).
 - c. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0122).
 - d. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:PQRS_P0012).
5. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28077).
6. If Laboratory Test Performed is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0053) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0054).
- b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0055).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 1. This **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0123).
 2. This **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0124).
 3. This **value SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.9 Medication

5.4.9.1 Medication Active

Table 29 Medication Active Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|---|
| Medication Active Code: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/consumable/manufacturedProduct[templateId/@root="2.16.840.1.113883.10.20.22.4.23"][templateId/@extension="2014-06-09"]/manufacturedMaterial/code/ | @code | SHALL | 1098-7520 1098-16085 1098-7411 1098-7412 PQRS_P0125 |
| Medication Active Code System: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/consumable/manufacturedProduct[templateId/@root="2.16.840.1.113883.10.20.22.4.23"][templateId/@extension="2014-06-09"]/manufacturedMaterial/code/ | @codeSystem | SHALL | 1098-7520 1098-16085 1098-7411 1098-7412 PQRS_P0126 |
| Medication Active Value Set: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/consumable/manufacturedProduct[templateId/@root="2.16.840.1.113883.10.20.22.4.23"][templateId/@extension="2014-06-09"]/manufacturedMaterial/code/ | @sdtc:valueSet | SHALL | 1098-7520 1098-16085 1098-7411 1098-7412 PQRS_P0001 |
| Medication Active Status Code: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-12412 1140-12413 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-----------------------|-----------------|--|
| Medication Active Dose Quantity Value: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/doseQuantity/ | @value | SHALL | 1098-7516 |
| Medication Active Dose Quantity Unit: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/doseQuantity/ | @unit | SHOULD | 1098-7526 |
| Medication Active Single Administration Time: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/effectiveTime/ | @value | SHOULD SHALL | 1098-7508 1098-32775 1098-32890 |
| Medication Active Effective Start Date Time: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/effectiveTime/ | low | SHOULD SHALL | 1098-7508 1098-32776 1098-32890 |
| Medication Active Effective End Date Time: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/effectiveTime/ | high | MAY | 1098-7508 1098-32777 |
| Medication Active CMD Frequency: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/effectiveTime[@xsi:type="PIVL_TS" or "EIVL_TS"][@operator="A"]/ | period or event | SHOULD | 1098-7513 1098-9106 1098-28499 |
| Medication Active CMD Institution Specified: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/effectiveTime[@xsi:type="PIVL_TS"][@operator="A"]/ | @institutionSpecified | SHOULD | PQRS_P0043 |
| Medication Active CMD Refills: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/entryRelationship/supply[templateId/@root="2.16.840.1.113883.10.20.22.4.17"] [templateId/@extension="2014-06-09"] [@moodCode="INT"]/repeatNumber/ | @value | SHOULD | 1098-7543 1098-7547 1098-16089 1098-7428 1098-7434 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|--------|--|
| Medication Active CMD Doses: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.41"][templateId/@extension="2014-12-01"]/entryRelationship/supply[templateId/@root="2.16.840.1.113883.10.20.22.4.17"][templateId/@extension="2014-06-09"][@moodCode="INT"]/quantity/ | @value | SHOULD | 1098-7543 1098-7547 1098-16089 1098-7428 1098-7436 PQRS_P0047 |

1. **SHALL** contain exactly one [1..1] **consumable** (CONF:1098-7520).
 - a. This consumable **SHALL** contain exactly one [1..1] **Medication Information (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.23:2014-06-09) (CONF:1098-16085).
 - i. **SHALL** contain exactly one [1..1] **manufacturedMaterial** (CONF:1098-7411).
Note: A medication should be recorded as a pre-coordinated ingredient + strength + dose form (e.g., "metoprolol 25mg tablet", "amoxicillin 400mg/5mL suspension") where possible. This includes RxNorm codes whose Term Type is SCD (semantic clinical drug), SBD (semantic brand drug), GPCK (generic pack), BPCK (brand pack).
 - a. This manufacturedMaterial **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet **Medication Clinical Drug** urn:oid:2.16.840.1.113762.1.4.1010.4 **DYNAMIC** (CONF:1098-7412).
 - i. This **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0125).
 - ii. This **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0126).
 - iii. This **code SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0001).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-12412).
3. a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-12413).
4. **SHALL** contain exactly one [1..1] **doseQuantity** (CONF:1098-7516).
 - a. This doseQuantity **SHOULD** contain zero or one [0..1] **@unit**, which **SHALL** be selected from ValueSet **UnitsOfMeasureCaseSensitive** urn:oid:2.16.840.1.113883.1.11.12839 **DYNAMIC** (CONF:1098-7526).
5. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1098-7508) such that it
6. Note: This effectiveTime represents either the medication duration (i.e., the time the medication was started and stopped) or the single-administration timestamp.
 - a. **SHOULD** contain zero or one [0..1] **@value** (CONF:1098-32775). Note: indicates a single-administration timestamp
 - b. **SHOULD** contain zero or one [0..1] **low** (CONF:1098-32776). Note: indicates when medication started
 - c. **MAY** contain zero or one [0..1] **high** (CONF:1098-32777). Note: indicates when medication stopped

- d. This effectiveTime **SHALL** contain either a low or a @value but not both (CONF:1098-32890).
- 7. **SHOULD** contain zero or one [0..1] effectiveTime (CONF:1098-7513) such that it
 - Note: This effectiveTime represents the medication frequency (e.g., administration times per day).
 - a. **SHALL** contain exactly one [1..1] @operator="A" (CONF:1098-9106).
 - b. **SHALL** contain exactly one [1..1] @xsi:type="PIVL_TS" or "EIVL_TS" (CONF:1098-28499).
 - i. If @xsi:type="PIVL_TS" then **SHOULD** contain zero or one [0..1] @institutionSpecified (CONF:PQRS_P0043).
- 8. **MAY** contain zero or one [0..1] entryRelationship (CONF:1098-7543) such that it
 - a. **SHALL** contain exactly one [1..1] @typeCode="REFR" (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002 **STATIC**) (CONF:1098-7547).
 - b. **SHALL** contain exactly one [1..1] **Medication Supply Order (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.17:2014-06-09) (CONF:1098-16089).
 - i. **SHALL** contain exactly one [1..1] @moodCode="INT" (CodeSystem: ActMood urn:oid:2.16.840.1.113883.5.1001 **STATIC**) (CONF:1098-7428).
 In "INT" (intent) mood, the repeatNumber defines the number of allowed administrations. For example, a repeatNumber of "3" means that the substance can be administered up to 3 times. In "EVN" (event) mood, the repeatNumber is the number of occurrences. For example, a repeatNumber of "3" in a substance administration event means that the current administration is the 3rd in a series.
 - ii. **SHOULD** contain zero or one [0..1] repeatNumber (CONF:1098-7434).
 - iii. **SHOULD** contain exactly one [1..1] quantity (CONF:1098-7436).
 - a. **SHALL** contain exactly one [1..1] @value (CONF:PQRS_P0047).

5.4.9.2 Medication Administered

Table 30 Medication Administered Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|------------|
| Medication Administered Code: | @code | SHALL | 1140-12454 |
| //act[templateId/@root="2.16.840.1.113883.10.20.24.3.42"] | | | 1140-12455 |
| [[templateId/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="COMP"]/substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.22.4.16"] | | | 1140-12456 |
| [[templateId/@extension="2014-06-09"]/consumable/manufacturedProduct[templateId/@root="2.16.840.1.113883.10.20.22.4.23"] | | | 1140-12457 |
| [[templateId/@extension="2014-06-09"]/manufacturedMaterial/code/ | | | 1098-7520 |
| | | | 1098-16085 |
| | | | 1098-7411 |
| | | | 1098-7412 |
| | | | PQRS_P0127 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|--------|---|
| Medication Administered Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"][[templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="COMP"]/substanceAdministration[templated/@root="2.16.840.1.113883.10.20.22.4.16"][[templated/@extension="2014-06-09"]/consumable/manufacturedProduct[templated/@root="2.16.840.1.113883.10.20.22.4.23"][[templated/@extension="2014-06-09"]/manufacturedMaterial/code/ | @codeSystem | SHALL | 1140-12454 1140-12455 1140-12456 1140-12457 1098-7520 1098-16085 1098-7411 1098-7412 PQRS_P0128 |
| Medication Administered Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"][[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="COMP"]/substanceAdministration[templated/@root="2.16.840.1.113883.10.20.22.4.16"][[templated/@extension="2014-06-09"]/consumable/manufacturedProduct[templated/@root="2.16.840.1.113883.10.20.22.4.23"][[templated/@extension="2014-06-09"]/manufacturedMaterial/code/ | @sdct:valueSet | SHALL | 1140-12454 1140-12455 1140-12456 1140-12457 1098-7520 1098-16085 1098-7411 1098-7412 PQRS_P0002 |
| Medication Administered Status Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"][[templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-12452 1140-13241 |
| Medication Administered Effective Date Time: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"][[templated/@extension="2014-12-01"]/ | effectiveTime | SHALL | 1140-26714 |
| Medication Administered Dose Quantity Value: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"][[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="COMP"]/substanceAdministration[templated/@root="2.16.840.1.113883.10.20.22.4.16"][[templated/@extension="2014-06-09"]/doseQuantity/ | @value | SHALL | 1098-7516 |
| Medication Administered Dose Quantity Unit: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"][[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="COMP"]/substanceAdministration[templated/@root="2.16.840.1.113883.10.20.22.4.16"][[templated/@extension="2014-06-09"]/doseQuantity/ | @unit | SHOULD | 1098-7526 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Medication Administered Not Done Flag: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"] [[templated/@extension="2014-12-01"/] | @negationInd | MAY | 1140-28080 |
| Medication Administered Not Done Reason Code: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"] [[templated/@extension="2014-12-01"] [[@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"] [[templated/@extension="2014-12-01"]/value[@xsi:type="CD"/] | @code | SHALL | PQRS_P0020 PQRS_P0021 PQRS_P0022 1140-11367 PQRS_P0129 |
| Medication Administered Not Done Reason Code System: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"] [[templated/@extension="2014-12-01"] [[@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"] [[templated/@extension="2014-12-01"]/value[@xsi:type="CD"/] | @codeSystem | SHALL | PQRS_P0020 PQRS_P0021 PQRS_P0022 1140-11367 PQRS_P0130 |
| Medication Administered Not Done Reason Value Set: //act[templated/@root="2.16.840.1.113883.10.20.24.3.42"] [[templated/@extension="2014-12-01"] [[@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"] [[templated/@extension="2014-12-01"]/value[@xsi:type="CD"/] | @sdct:valueSet | SHALL | PQRS_P0020 PQRS_P0021 PQRS_P0022 1140-11367 1140-27657 |

1. **SHALL** contain at least one [1..*] **entryRelationship** (CONF:1140-12454) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-12455).
 - b. **SHALL** contain exactly one [1..1] **Medication Activity (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.16:2014-06-09) (CONF:1140-12456).
 - i. This substanceAdministration **SHALL** contain exactly one [1..1] **@moodCode="EVN"** (CodeSystem: ActMood urn:oid:2.16.840.1.113883.5.1001) (CONF:1140-12457).
 - ii. **SHALL** contain exactly one [1..1] **consumable** (CONF:1098-7520).
 - a. This consumable **SHALL** contain exactly one [1..1] **Medication Information (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.23:2014-06-09) (CONF:1098-16085).
 - i. **SHALL** contain exactly one [1..1] **manufacturedMaterial** (CONF:1098-7411).
Note: A medication should be recorded as a pre-coordinated ingredient + strength + dose form (e.g., "metoprolol 25mg tablet", "amoxicillin 400mg/5mL suspension") where possible. This includes RxNorm codes whose Term Type is SCD (semantic clinical drug), SBD (semantic brand drug), GPCK (generic pack), BPCCK (brand pack).

- i. This manufacturedMaterial **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet **Medication Clinical Drug** urn:oid:2.16.840.1.113762.1.4.1010.4 **DYNAMIC** (CONF:1098-7412).
 - 1. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0127).
 - 2. If negationInd!="true" then this **code SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0128).
 - 3. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:PQRS_P0002).
- 2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-12452).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-13241).

This effectiveTime should be used for capturing the actual medication administered time.

- 3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-26714).
- 4. **SHALL** contain exactly one [1..1] **doseQuantity** (CONF:1098-7516).
 - a. This doseQuantity **SHOULD** contain zero or one [0..1] **@unit**, which **SHALL** be selected from ValueSet **UnitsOfMeasureCaseSensitive** urn:oid:2.16.840.1.113883.1.11.12839 **DYNAMIC** (CONF:1098-7526).
- 5. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28080).
- 6. If Medication Administered is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0020) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0021).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0022).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - 1. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0129).
 - 2. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0130).
 - 3. This value **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27657).

5.4.9.3 Medication Allergy

Table 31 Medication Allergy Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Medication Allergy Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.44"][templateId/@extension="2014-12-01"]/participant/participantRole/playingEntity/code/ | @code | SHALL | 1140-27972 1140-27976 1140-27973 1140-27977 1140-27974 1140-27978 1140-27975 PQRS_P0131 |
| Medication Allergy Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.44"][templateId/@extension="2014-12-01"]/participant/participantRole/playingEntity/code/ | @codeSystem | SHALL | 1140-27972 1140-27976 1140-27973 1140-27977 1140-27974 1140-27978 1140-27975 PQRS_P0132 |
| Medication Allergy Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.44"][templateId/@extension="2014-12-01"]/participant/participantRole/playingEntity/code/ | @sdtc:valueSet | SHALL | 1140-27972 1140-27976 1140-27973 1140-27977 1140-27974 1140-27978 1140-27975 1140-27979 |
| Medication Allergy Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.44"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-19084 1908-19085 |
| Medication Allergy Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.44"][templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1098-7387 1098-31538 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|------|-------------------------|
| Medication Allergy Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.44"][templateId/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1098-7387 1098-31539 |

1. **SHALL** contain exactly one [1..1] **participant** (CONF:1140-27972) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CSM"** Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:1140-27976).
 - b. **SHALL** contain exactly one [1..1] **participantRole** (CONF:1140-27973).
 - i. This participantRole **SHALL** contain exactly one [1..1] **@classCode="MANU"** Manufactured product (CodeSystem: RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:1140-27977).
 - ii. This participantRole **SHALL** contain exactly one [1..1] **playingEntity** (CONF:1140-27974).
 - a. This playingEntity **SHALL** contain exactly one [1..1] **@classCode="MMAT"** Manufactured material (CodeSystem: EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:1140-27978).
 - b. This playingEntity **SHALL** contain exactly one [1..1] **code** (CONF:1140-27975).
 - i. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0131).
 - ii. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0132).
 - iii. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27979).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-19084).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:1098-19085).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1098-7387).

Note: If the allergy/intolerance is known to be resolved, but the date of resolution is not known, then the high element SHALL be present, and the nullFlavor attribute SHALL be set to "UNK".

 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1098-31538).

Note: The effectiveTime/low (a.k.a. "onset date") asserts when the allergy/intolerance became biologically active.
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1098-31539).

Note: The effectiveTime/high (a.k.a. "resolution date") asserts when the allergy/intolerance became biologically resolved.

5.4.9.4 Medication Dispensed

Table 32 Medication Dispensed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|--------|---|
| Medication Dispensed Code: //supply[templated/@root="2.16.840.1.113883.10.20.24.3.45"][templated/@extension="2014-12-01"]/product/manufacturedProduct[@classCode="MANU"][templated/@root="2.16.840.1.113883.10.20.22.4.23"][templated/@extension="2014-06-09"]/manufacturedMaterial/code/ | @code | SHALL | 1098-7459_P01 1098-15607 1098-7411 1098-7412 PQRS_P0133 |
| Medication Dispensed Code System: //supply[templated/@root="2.16.840.1.113883.10.20.24.3.45"][templated/@extension="2014-12-01"]/product/manufacturedProduct[@classCode="MANU"][templated/@root="2.16.840.1.113883.10.20.22.4.23"][templated/@extension="2014-06-09"]/manufacturedMaterial/code/ | @codeSystem | SHALL | 1098-7459_P01 1098-15607 1098-7411 1098-7412 PQRS_P0134 |
| Medication Dispensed Value Set: //supply[templated/@root="2.16.840.1.113883.10.20.24.3.45"][templated/@extension="2014-12-01"]/product/manufacturedProduct[@classCode="MANU"][templated/@root="2.16.840.1.113883.10.20.22.4.23"][templated/@extension="2014-06-09"]/manufacturedMaterial/code/ | @sdct:valueSet | SHALL | 1098-7459_P01 1098-15607 1098-7411 1098-7412 PQRS_P0003 |
| Medication Quantity Dispensed: //supply[templated/@root="2.16.840.1.113883.10.20.24.3.45"][templated/@extension="2014-12-01"]/ | quantity | SHOULD | 1098-7458 |
| Medication Dispensed Status Code: //supply[templated/@root="2.16.840.1.113883.10.20.24.3.45"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-19440 1140-19441 |
| Medication Dispensed Effective Date Time: //supply[templated/@root="2.16.840.1.113883.10.20.24.3.45"][templated/@extension="2014-12-01"]/effectiveTime/ | @value | SHALL | 1140-13856 |

1. **SHALL** contain exactly one [1..1] **product** (CONF:1098-7459_P01) such that it
 - a. **SHALL** contain exactly one [1..1] **Medication Information (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.23:2014-06-09) (CONF:1098-15607).
 - i. **SHALL** contain exactly one [1..1] **manufacturedMaterial** (CONF:1098-7411).
 Note: A medication should be recorded as a pre-coordinated ingredient + strength + dose form (e.g., "metoprolol 25mg tablet", "amoxicillin 400mg/5mL suspension") where

possible. This includes RxNorm codes whose Term Type is SCD (semantic clinical drug), SBD (semantic brand drug), GPCK (generic pack), BPCCK (brand pack).

- a. This manufacturedMaterial **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet **Medication Clinical Drug** urn:oid:2.16.840.1.113762.1.4.1010.4 **DYNAMIC** (CONF:1098-7412).
 - i. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0133).
 - ii. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0134).
 - iii. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:PQRS_P0003).
2. **SHOULD** contain zero or one [0..1] **quantity** (CONF:1098-7458).
3. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-19440).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-19441).
4. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-13856).

5.4.9.5 Medication Intolerance

Table 33 Medication Intolerance Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Medication Intolerance Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.46"][templateId/@extension="2014-12-01"]/participant[@typeCode="CSM"]/participantRole[@classCode="MANU"]/playingEntity[@classCode="MMAT"] /code/ | @code | SHALL | 1140-27980 1140-27984 1140-27981 1140-27985 1140-27982 1140-27986 1140-27983 PQRS_P0135 |
| Medication Intolerance Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.46"][templateId/@extension="2014-12-01"]/participant[@typeCode="CSM"]/participantRole[@classCode="MANU"]/playingEntity[@classCode="MMAT"] /code/ | @codeSystem | SHALL | 1140-27980 1140-27984 1140-27981 1140-27985 1140-27982 1140-27986 1140-27983 PQRS_P0136 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Medication Intolerance Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.46"][templateId/@extension="2014-12-01"]/participant[@typeCode="CSM"]/participantRole[@classCode="MANU"]/playingEntity[@classCode="MMAT"]/code/ | @sdtc:valueSet | SHALL | 1140-27980 1140-27984 1140-27981 1140-27985 1140-27982 1140-27986 1140-27983 1140-27987 |
| Medication Intolerance Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.46"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-19084 1098-19085 |
| Medication Intolerance Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.46"][templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1098-7387 1098-31538 |
| Medication Intolerance Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.46"][templateId/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1098-7387 1098-31539 |

1. **SHALL** contain exactly one [1..1] **participant** (CONF:1140-27980) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CSM"** Consumable (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:1140-27984).
 - b. **SHALL** contain exactly one [1..1] **participantRole** (CONF:1140-27981).
 - i. This participantRole **SHALL** contain exactly one [1..1] **@classCode="MANU"** Manufactured product (CodeSystem: RoleClass urn:oid:2.16.840.1.113883.5.110) (CONF:1140-27985).
 - ii. This participantRole **SHALL** contain exactly one [1..1] playingEntity (CONF:1140-27982).
 - i. This playingEntity **SHALL** contain exactly one [1..1] **@classCode="MMAT"** Manufactured material (CodeSystem: EntityClass urn:oid:2.16.840.1.113883.5.41) (CONF:1140-27986).
 - ii. This playingEntity **SHALL** contain exactly one [1..1] **code** (CONF:1140-27983).
 1. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0135).
 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0136).

3. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27987).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-19084).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:1098-19085).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1098-7387).

Note: If the allergy/intolerance is known to be resolved, but the date of resolution is not known, then the high element SHALL be present, and the nullFlavor attribute SHALL be set to "UNK".

 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1098-31538).

Note: The effectiveTime/low (a.k.a. "onset date") asserts when the allergy/intolerance became biologically active.
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1098-31539).

Note: The effectiveTime/high (a.k.a. "resolution date") asserts when the allergy/intolerance became biologically resolved.

5.4.9.6 Medication Order

Reason for placing a medication order and reason for a "Medication Order not done" are both represented using a Reason entryRelationship in the Medication Order template, however, as noted in Table 34 and conformance statements below, each is associated with a different set of constraints.

Table 34 Medication Order Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Medication Order Code: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"][templateId/@extension="2014-12-01"][@negationInd!="true"]/consumable/manufacturedProduct[templateId/@root="2.16.840.1.113883.10.20.22.4.23"][templateId/@extension="2014-06-09"]/manufacturedMaterial/code/ | @code | SHALL | 1098-32082 1098-32083 1098-7411 1098-7412 PQRS_P0137 |
| Medication Order Code System: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"][templateId/@extension="2014-12-01"][@negationInd!="true"]/consumable/manufacturedProduct[templateId/@root="2.16.840.1.113883.10.20.22.4.23"][templateId/@extension="2014-06-09"]/manufacturedMaterial/code/ | @codeSystem | SHALL | 1098-32082 1098-32083 1098-7411 1098-7412 PQRS_P0138 |
| Medication Order Value Set: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"][templateId/@extension="2014-12-01"]/consumable/manufacturedProduct[templateId/@root="2.16.840.1.113883.10.20.22.4.23"][templateId/@extension="2014-06-09"]/manufacturedMaterial/code/ | @sdtc:valueSet | SHALL | 1098-32082 1098-32083 1098-7411 1098-7412 PQRS_P0005 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-----------------------|--------|--|
| Medication Order Status Code: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-32087 1098-32088 |
| Medication Order Date Time: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/author[templated/@root="2.16.840.1.113883.10.20.22.4.2119"/ | time | SHALL | 1140-27745 1098-32046_P01 1098-31471 |
| Medication Order Effective Start Date Time: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-27740 1140-27742 PQRS_P0181 |
| Medication Order Effective End Date Time: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/effectiveTime/ | high | MAY | 1140-27740 1140-27743 |
| Medication Order CMD Frequency: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/effectiveTime[@xsi:type="PIVL_TS"/ | period | SHALL | 1140-27741 1140-27744 |
| Medication Order CMD Institution Specified: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/effectiveTime[@xsi:type="PIVL_TS"/ | @institutionSpecified | SHOULD | PQRS_P0045 |
| Medication Order Dose Quantity Value: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/doseQuantity/ | @value | MAY | 1098-32068 |
| Medication Order Dose Quantity Unit: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"]/doseQuantity/ | @unit | SHOULD | 1098-32133 |
| Medication Order Reason Status Code: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-28008 1140-11364 1140-11365 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Medication Order Reason Effective Start Date Time: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/effectiveTime/ | low | SHALL | 1140-28008 1140-11366 1140-27551 |
| Medication Order Reason Effective End Date Time: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/effectiveTime/ | high | MAY | 1140-28008 1140-11366 1140-27552 |
| Medication Order Reason Code: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | 1140-28008 1140-28009 1140-28010 1140-11367 PQRS_P0139 |
| Medication Order Reason Code System: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | 1140-28008 1140-28009 1140-28010 1140-11367 PQRS_P0140 |
| Medication Order Reason Value Set: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"][templated/@extension="2014-12-01"][@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | 1140-28008 1140-28009 1140-28010 1140-11367 1140-27657 |
| Medication Order CMD Refills: //substanceAdministration[templated/@root="2.16.840.1.113883.10.20.24.3.47"]/entryRelationship/supply[templated/@root="2.16.840.1.113883.10.20.24.3.99"]/repeatNumber/ | @value | MAY | 1140-12624 1098-32063 PQRS_P0048 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Medication Order CMD Doses: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"]/entryRelationship/supply[templateId/@root="2.16.840.1.113883.10.20.24.3.99/quantity/ | @value | MAY | 1140-12624 1098-32064 PQRS_P0049 |
| Medication Order Not Done Flag: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"][[templateId/@extension="2014-12-01"]/ | @negationInd | MAY | 1040-28084 |
| Medication Order Not Done Reason Code: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"][[templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][[templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | PQRS_P0024 PQRS_P0025 PQRS_P0026 1140-11367 PQRS_P0141 |
| Medication Order Not Done Reason Code System: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"][[templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][[templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | PQRS_P0024 PQRS_P0025 PQRS_P0026 1140-11367 PQRS_P0142 |
| Medication Order Not Done Reason Value Set: //substanceAdministration[templateId/@root="2.16.840.1.113883.10.20.24.3.47"][[templateId/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templateId/@root="2.16.840.1.113883.10.20.24.3.88"][[templateId/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | PQRS_P0024 PQRS_P0025 PQRS_P0026 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **consumable** (CONF:1098-32082).
 - a. This consumable **SHALL** contain exactly one [1..1] **Medication Information (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.22.4.23:2014-06-09) (CONF:1098-32083).
 - i. **SHALL** contain exactly one [1..1] **manufacturedMaterial** (CONF:1098-7411).

Note: A medication should be recorded as a pre-coordinated ingredient + strength + dose form (e.g., "metoprolol 25mg tablet", "amoxicillin 400mg/5mL suspension") where possible. This includes RxNorm codes whose Term Type is SCD (semantic clinical drug), SBD (semantic brand drug), GPCK (generic pack), BPCCK (brand pack).

 - a. This manufacturedMaterial **SHALL** contain exactly one [1..1] **code**, which **SHALL** be selected from ValueSet **Medication Clinical Drug** urn:oid:2.16.840.1.113762.1.4.1010.4 **DYNAMIC** (CONF:1098-7412).

- i. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0137).
 - ii. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0138).
 - iii. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0005).
- 2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-32087).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1098-32088).
- 3. **SHALL** contain exactly one [1..1] **Author Participation** (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1098-32046_P01).
 - a. **SHALL** contain exactly one [1..1] **time** (CONF:1098-31471).
- 4. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-27740) such that it
 - a. **SHALL** contain exactly one [1..1] **low** (CONF:1140-27742).
 - i. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0181).
 - b. **MAY** contain zero or one [0..1] **high** (CONF:1140-27743).
- 5. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-27741) such that it
 - a. **SHALL** contain exactly one [1..1] **period** (CONF:1140-27744).
 - b. **effectiveTime SHOULD** contain zero or one [0..1] **@institutionSpecified** (CONF:PQRS_P0045).
- 6. **MAY** contain zero or one [0..1] **doseQuantity** (CONF:1098-32068).
 - a. The doseQuantity, if present, **SHOULD** contain zero or one [0..1] **@unit**, which **SHALL** be selected from ValueSet **UnitsOfMeasureCaseSensitive** urn:oid:2.16.840.1.113883.1.11.12839 **DYNAMIC** (CONF:1098-32133).
- 7. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1140-28008) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** Has reason (CONF:1140-28009).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:1140-28010).
 - i. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-11364).
 - 1. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-11365).
 - ii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11366).
 - 1. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27551).
 - 2. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27552).
 - iii. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - 1. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0139).
 - 2. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0140).
 - 3. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).
- 8. **MAY** contain zero or one [0..1] **entryRelationship** (CONF:1140-12624) such that it

- a. **SHALL** contain exactly one [1..1] **@typeCode="COMP"** Component of (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-12626).
 - b. **SHALL** contain exactly one [1..1] **Medication Supply Request (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.99:2015-04-05) (CONF:1140-13842).
 - i. **MAY** contain zero or one [0..1] **repeatNumber** (CONF:1098-32063).
 - a. The **repeatNumber**, if present, **SHALL** contain exactly one [1..1] **@value** (CONF:PQRS_P0048).
 - ii. **MAY** contain zero or one [0..1] **quantity** (CONF:1098-32064).
 - a. The **quantity**, if present, **SHALL** contain exactly one [1..1] **@value** (CONF:PQRS_P0049).
9. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28084).
10. If Medication Order is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0024) such that it
- a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0025).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0026).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - ii. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0141).
 - iii. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0142).
 - iv. This value **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27657).

5.4.10 Patient Characteristic

5.4.10.1 Patient Characteristic Expired

Table 35 Patient Characteristic Expired Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-----------------------|-------|--------------------------|
| Patient Characteristic Expired Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.54"][templateId/@extension="2014-12-01"]/ | value[@xsi:type="CD"] | SHALL | 1098-14857 1098-15142 |
| Patient Characteristic Expired Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.54"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-14854 1098-19095 |
| Patient Characteristic Expired Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.54"][templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1098-14855 1098-14874 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|------|--------------------------|
| Patient Characteristic Expired Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.54"]/[templateId/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1098-14855 PQRS_P0007 |

1. **SHALL** contain exactly one [1..1] **value** with @xsi:type="CD" (CONF:1098-14857).
 - a. This value **SHALL** contain exactly one [1..1] **@code="419099009" Dead** (CodeSystem: SNOMED-CT 2.16.840.1.113883.6.96 **STATIC**) (CONF:1098-15142).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-14854).
 - a. This **statusCode SHALL** contain exactly one [1..1] **@code="completed" Completed** (CodeSystem: ActStatus 2.16.840.1.113883.5.14 **STATIC**) (CONF:1098-19095).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1098-14855).
 - a. This **effectiveTime SHALL** contain exactly one [1..1] **low** (CONF:1098-14874).
 - b. This **effectiveTime MAY** contain zero or one [0..1] **high** (CONF:PQRS_P0007).

5.4.10.2 Patient Characteristic Clinical Trial Participant

Table 36 Patient Characteristic Clinical Trial Participant Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--------------------------|
| Patient Characteristic Clinical Trial Participant Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.51"]/[templateId/@extension="2014-12-01"]/value[@xsi:type"CD"/] | @code | SHALL | 1140-16712 PQRS_P0143 |
| Patient Characteristic Clinical Trial Participant Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.51"]/[templateId/@extension="2014-12-01"]/value[@xsi:type"CD"/] | @codeSystem | SHALL | 1140-16712 PQRS_P0144 |
| Patient Characteristic Clinical Trial Participant Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.51"]/[templateId/@extension="2014-12-01"]/value[@xsi:type"CD"/] | @sdtc:valueSet | SHALL | 1140-16712 1140-27648 |
| Patient Characteristic Clinical Trial Participant Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.51"]/statusCode/[templateId/@extension="2014-12-01"/] | @code | SHALL | 1140-13042 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Patient Characteristic Clinical Trial Participant Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.51"]/[templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-12536 1140-27668 |
| Patient Characteristic Clinical Trial Participant Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.51"]/[templateId/@extension="2014-12-01"]/effectiveTime/high/ | @value | MAY | 1140-12536 1140-27669 |

1. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-16712).
 - a. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0143).
 - b. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0144).
 - c. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27648).
2. **SHALL** contain exactly one [1..1] **statusCode="active"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-13042).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-12536).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27668).
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27669).

5.4.10.3 Patient Characteristic Payer

Table 37 Patient Characteristic Payer Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|------------------------|
| Payer Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.55"]/value[@xsi:type="CD"]/ | @code | SHALL | 67-16710 PQRS_P0145 |
| Payer Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.55"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | 67-16710 PQRS_P0146 |
| Payer Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.55"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | 67-16710 PQRS_P0006 |
| Payer Effective Start Date: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.55"]/effectiveTime/low/ | @value | SHALL | 67-26933 67-26934 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|--------|----------------------|
| Payer Effective End Date: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.55"]/effectiveTime/high/ | @value | SHOULD | 67-26933 67-26935 |

1. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"**, where the code **SHALL** be selected from ValueSet **Payer** urn:oid:2.16.840.1.114222.4.11.3591 **DYNAMIC** (CONF:67-16710).
 - a. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0145).
 - b. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0146).
 - c. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0006).
2. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:67-26933).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:67-26934).
 - b. This effectiveTime **SHOULD** contain zero or one [0..1] **high** (CONF:67-26935).

5.4.10.4 Patient Characteristic Observation Assertion

Table 38 Patient Characteristic Observation Assertion Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Patient Observation Assertion Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.103"][templateId/@extension="2014-12-01"]/value/ | @code | SHALL | 1140-16541 PQRS_P0147 |
| Patient Observation Assertion Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.103"][templateId/@extension="2014-12-01"]/value/ | @codeSystem | SHALL | 1140-16541 PQRS_P0148 |
| Patient Observation Assertion Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.103"][templateId/@extension="2014-12-01"]/value/ | @sdtc:valueSet | SHALL | 1140-16541 1140-27672 |
| Patient Observation Assertion Status Code : //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.103"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-16539 |
| Patient Observation Assertion Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.103"][templateId/@extension="2014-12-01"]/low/ | @value | SHALL | 1140-16540 1140-27670 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|------|--------------------------|
| Patient Observation Assertion Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.103"][templateId/@extension="2014-12-01"]/high/ | @value | MAY | 1140-16540 1140-27671 |

1. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-16541).
 - a. This value SHALL contain exactly one [1..1] **@code** (CONF:PQRS_P0147).
 - b. This value SHALL contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0148).
 - c. This value SHALL contain exactly one [1..1] **@sdhc:valueSet** (CONF:1140-27672).
2. **SHALL** contain exactly one [1..1] **statusCode="completed"** Completed (CONF:1140-16539).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-16540).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-27670).
 - b. This effectiveTime **MAY** contain zero or one [0..1] **high** (CONF:1140-27671).

5.4.11 Physical Exam

5.4.11.1 Physical Exam Performed

Table 39 Physical Exam Performed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Physical Exam Performed Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.59"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-27651 PQRS_P0149 |
| Physical Exam Performed Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.59"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-2765 PQRS_P0150 |
| Physical Exam Performed Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.59"][templateId/@extension="2014-12-01"]/code/ | @sdhc:valueSet | SHALL | 1140-27651 1140-27652 |
| Physical Exam Performed Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.59"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-12649 1140-12650 |
| Physical Exam Performed Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.59"][templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-12651 1140-12652 PQRS_P0177 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Physical Exam Performed Effective End Date Time: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"]/effectiveTime/ | high | SHALL | 1140-12651 1140-12653 |
| Physical Exam Performed Result: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"]/ | value | SHALL | 1098-16846 |
| Physical Exam Performed Result Code: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/ | @code | SHALL | 1098-16846 PQRS_P0151 |
| Physical Exam Performed Result Code System: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/ | @codeSystem | SHALL | 1098-16846 PQRS_P0152 |
| Physical Exam Performed Result Value Set: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/ | @sdct:valueSet | SHALL | 1098-16846 PQRS_P0013 |
| Physical Exam Performed Not Done Flag: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"]/ | @negationInd | MAY | 1140-28093 |
| Physical Exam Performed Not Done Reason Code: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="REASON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"]/[templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | PQRS_P0068 PQRS_P0069 1140-11367 PQRS_P0153 |
| Physical Exam Performed Not Done Reason Code System: //observation[templated/@root="2.16.840.1.113883.10.20.24.3.59"]/[templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="REASON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"]/[templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | PQRS_P0068 PQRS_P0069 1140-11367 PQRS_P0154 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|--------------------|-------|--|
| Physical Exam Performed Not Done Reason Value Set: //observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.59"][[templatelD/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.88"][[templatelD/@extension="2014-12-01"]/value[@xsi:type="@xsi:type="CD"/]] | @sdtc:valu eSet | SHALL | PQRS_P0068 PQRS_P0069 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27651).
 - a. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0149).
 - b. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0150).
 - c. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27652).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-12649).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-12650).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-12651).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-12652).
 - i. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0177).
 - b. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:1140-12653).
4. **SHALL** contain exactly one [1..1] **value** (CONF:1098-16846).
 - a. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value** **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0151).
 - b. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value** **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0152).
 - c. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value** **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0013).
5. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28093).
6. If Physical Exam Performed is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0068) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0069).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0070).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 1. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0153).
 2. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0154).
 3. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.12 Procedure

5.4.12.1 Procedure Intolerance

Table 40 Procedure Intolerance Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|--------|--|
| Procedure Intolerance Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.62"][templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="CAUS"][@inversionInd="true"]/procedure[templateId/@root="2.16.840.1.113883.10.20.24.3.64"][templateId/@extension="2014-12-01"]/code/ | @code | SHALL | 1140-11601 1140-11602 1140-11603 1140-27148 1140-27309 PQRS_P0155 |
| Procedure Intolerance Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.62"][templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="CAUS"][@inversionInd="true"]/procedure[templateId/@root="2.16.840.1.113883.10.20.24.3.64"][templateId/@extension="2014-12-01"]/code/ | @codeSystem | SHALL | 1140-11601 1140-11602 1140-11603 1140-27148 1140-27309 PQRS_P0156 |
| Procedure Intolerance Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.62"][templateId/@extension="2014-12-01"]/entryRelationship[@typeCode="CAUS"][@inversionInd="true"]/procedure[templateId/@root="2.16.840.1.113883.10.20.24.3.64"][templateId/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-11601 1140-11602 1140-11603 1140-27148 1140-27309 1140-27310 |
| Procedure Intolerance Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.62"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-16387 1140-16388 |
| Procedure Intolerance Effective Start Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.62"][templateId/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-16389 1140-16390 PQRS_P0178 |
| Procedure Intolerance Effective End Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.62"][templateId/@extension="2014-12-01"]/effectiveTime/ | high | SHOULD | 1140-16389 1140-16391 |

1. **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:1140-11601) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="CAUS"** (CodeSystem: HL7ParticipationType urn:oid:2.16.840.1.113883.5.90) (CONF:1140-11602).
 - b. **SHALL** contain exactly one [1..1] **@inversionInd="true"** (CONF:1140-11603).

- c. **SHALL** contain exactly one [1..1] **Procedure Performed (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.64:2014-12-01) (CONF:1140-27148).
 - i. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27309).
 - 1. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0155).
 - 2. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0156).
 - 3. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27310).
- 2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-16387).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-16388).
- 3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-16389).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-16390).
 - i. This **low** **SHALL** contain exactly one [1..1] **@value** (CONF:PQRS_P0178).
 - b. This effectiveTime **SHOULD** contain zero or one [0..1] **high** (CONF:1140-16391).

5.4.12.2 Procedure Order

Table 41 Procedure Order Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Procedure Order Code: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.63"][templated/@extension="2014-12-01"]/code/ | @code | SHALL | 1140-27324 PQRS_P0157 |
| Procedure Order Code System: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.63"][templated/@extension="2014-12-01"]/code/ | @codeSystem | SHALL | 1140-27324 PQRS_P0158 |
| Procedure Order Value Set: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.63"][templated/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-27324 1140-27330 |
| Procedure Order Status Code: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.63"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1098-30446 1098-31978 |
| Procedure Order Date Time: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.63"][templated/@extension="2014-12-01"]/author[templated/@root="2.16.840.1.113883.10.20.24.119"]/ | time | SHALL | 1140-27346 1098-31471 |

- 1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27324).
 - a. This code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0157).
 - b. This code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0158).
 - c. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27330).

2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-30446).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="active"** Active (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1098-31978).
3. **SHALL** contain exactly one [1..1] **AUTHOR PARTICIPATION** (identifier: urn:oid:2.16.840.1.113883.10.20.22.4.119) (CONF:1140-27346).
 - a. **SHALL** contain exactly one [1..1] **time** (CONF:1098-31471).

5.4.12.3 Procedure Performed

Table 42 Procedure Performed Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--|
| Procedure Performed Code: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-27309 PQRS_P0159 |
| Procedure Performed Code System: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-27309 PQRS_P0160 |
| Procedure Performed Value Set: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-27309 1140-27310 |
| Procedure Performed Status Code: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 1140-27305 1140-27367 |
| Procedure Performed Start Date Time: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"]/effectiveTime/low/ | @value | SHALL | 1140-11669 1140-11670 PQRS_P0179 |
| Procedure Performed End Date Time: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"]/effectiveTime/high/ | @value | SHALL | 1140-11669 1140-11671 PQRS_P0180 |
| Procedure Performed Result: //procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.87"][templated/@extension="2014-12-01"]/ | value | SHALL | 1140-27315 1140-27316 1140-27317 1140-16701 1140-16702 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Procedure Performed Result Code: <pre>//procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"]/[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.87"][[templated/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/</pre> | @code | SHALL | 1140-27315 1140-27316 1140-27317 1140-16701 PQRS_P0161 |
| Procedure Performed Result Code System: <pre>//procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"]/[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.87"][[templated/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/</pre> | @codeSystem | SHALL | 1140-27315 1140-27316 1140-27317 1140-16701 PQRS_P0162 |
| Procedure Performed Result Value Set: <pre>//procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"]/[templated/@extension="2014-12-01"]/entryRelationship[@typeCode="REFR"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.87"][[templated/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"]/</pre> | @sdtc:valueSet | SHALL | 1140-27315 1140-27316 1140-27317 1140-16701 PQRS_P0015 |
| Procedure Performed Result Status Code: <pre>//observation[templated/@root="2.16.840.1.113883.10.20.24.3.64"][[@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][[templated/@extension="2014-12-01"]/statusCode/</pre> | @code | SHALL | 1140-27315 1140-27316 1140-27317 1098-7134 1098-14849 |
| Procedure Performed Result Effective Date Time: <pre>//observation[templated/@root="2.16.840.1.113883.10.20.24.3.64"][[@negationInd!="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][[templated/@extension="2014-12-01"]/</pre> | effectiveTime | SHALL | 1140-27315 1140-27316 1140-27317 1098-7140 |
| Procedure Performed Not Done Flag: <pre>//procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][[templated/@extension="2014-12-01"]/</pre> | @negationInd | MAY | 1040-28098 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Procedure Performed Not Done Reason Code: <pre>//procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/</pre> | @code | SHALL | PQRS_P0059 PQRS_P0060 PQRS_P0061 1140-11367 PQRS_P0163 |
| Procedure Performed Not Done Reason Code System: <pre>//procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/</pre> | @codeSystem | SHALL | PQRS_P0059 PQRS_P0060 PQRS_P0061 1140-11367 PQRS_P0164 |
| Procedure Performed Not Done Reason Value Set: <pre>//procedure[templated/@root="2.16.840.1.113883.10.20.24.3.64"][templated/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templated/@root="2.16.840.1.113883.10.20.24.3.88"][templated/@extension="2014-12-01"]/value[@xsi:type="CD"]/</pre> | @sdct:valueSet | SHALL | PQRS_P0059 PQRS_P0060 PQRS_P0061 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27309).
 - a. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0159).
 - b. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0160).
 - c. This code **SHALL** contain exactly one [1..1] **@sdct:valueSet** (CONF:1140-27310).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1140-27305).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14) (CONF:1140-27367).
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1140-11669).
 - a. This effectiveTime **SHALL** contain exactly one [1..1] **low** (CONF:1140-11670).
 - i. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0179).
 - b. This effectiveTime **SHALL** contain exactly one [1..1] **high** (CONF:1140-11671).
 - i. This **low** SHALL contain exactly one [1..1] **@value** (CONF:PQRS_P0180).
4. **MAY** contain zero or more [0..*] **entryRelationship** (CONF:1140-27315) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="REFR"** Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:1140-27316).
 - b. **SHALL** contain exactly one [1..1] **Result (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.87:2014-12-01) (CONF:1140-27317).
 - i. **SHALL** contain exactly one [1..1] **value** (CONF:1140-16701).

1. If **xsi:type="PQ"**, then @units shall be drawn from Unified Code for Units of Measure (UCUM) 2.16.840.1.113883.6.8 code system. Additional constraint is dependent on criteria in the corresponding eMeasure (CONF:1140-16702).
 2. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0161).
 3. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0162).
 4. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0015).
- ii. **SHALL** contain exactly one [1..1] **statusCode** (CONF:1098-7134).
 1. This statusCode **SHALL** contain exactly one [1..1] **@code**, which **SHALL** be selected from ValueSet **Result Status** urn:oid:2.16.840.1.113883.11.20.9.39 **STATIC** 2013-08-09 (CONF:1098-14849).
 - iii. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:1098-7140).
 Note: Represents the biologically relevant time of the measurement (e.g., the time a blood pressure reading is obtained, the time the blood sample was obtained for a chemistry test).
4. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28098).
 5. If Procedure Performed is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0059) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0060).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0061).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 1. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0163).
 2. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0164).
 3. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

5.4.13 Risk Category

5.4.13.1 Risk Category Assessment

Table 43 Risk Category Assessment Constraints

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|--|-------------------|-------|--------------------------|
| Risk Category Assessment Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @code | SHALL | 1140-27660 PQRS_P0165 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--------------------------|
| Risk Category Assessment Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"][@negationInd!="true"]/code/ | @codeSystem | SHALL | 1140-27660 PQRS_P0166 |
| Risk Category Assessment Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"]/code/ | @sdtc:valueSet | SHALL | 1140-27660 1140-27661 |
| Risk Category Assessment Status Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"]/statusCode/ | @code | SHALL | 81-14444 81-19088 |
| Risk Category Assessment Effective Date Time: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"/ | effectiveTime | SHALL | 81-14445 |
| Risk Category Assessment Value: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"]/value | @value | SHALL | 81-14450 PQRS_P0039 |
| Risk Category Assessment Value Code: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"/ | @code | SHALL | 81-14450 PQRS_P0167 |
| Risk Category Assessment Value Code System: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"/ | @codeSystem | SHALL | 81-14450 PQRS_P0168 |
| Risk Category Assessment Value Value Set: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"]/value[@xsi:type="CD" or @xsi:type="CE" or @xsi:type="CO" or @xsi:type="CV"/ | @sdtc:valueSet | SHALL | 81-14450 PQRS_P0016 |
| Risk Category Assessment Not Done Flag: //observation[templateId/@root="2.16.840.1.113883.10.20.24.3.69"][templateId/@extension="2014-12-01"/ | @negationInd | MAY | 1140-28106 |

| Parameter Name: XPath | Attribute/Element | Verb | CONF# |
|---|-------------------|-------|--|
| Risk Category Assessment Not Done Reason Code: //observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.69"][templatelD/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.88"][templatelD/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @code | SHALL | PQRS_P0062 PQRS_P0063 PQRS_P0064 1140-11367 PQRS_P0169 |
| Risk Category Assessment Not Done Reason Code System: //observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.69"][templatelD/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.88"][templatelD/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @codeSystem | SHALL | PQRS_P0062 PQRS_P0063 PQRS_P0064 1140-11367 PQRS_P0170 |
| Risk Category Assessment Not Done Reason Value Set: //observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.69"][templatelD/@extension="2014-12-01"][@negationInd="true"]/entryRelationship[@typeCode="RSON"]/observation[templatelD/@root="2.16.840.1.113883.10.20.24.3.88"][templatelD/@extension="2014-12-01"]/value[@xsi:type="CD"]/ | @sdtc:valueSet | SHALL | PQRS_P0062 PQRS_P0063 PQRS_P0064 1140-11367 1140-27657 |

1. **SHALL** contain exactly one [1..1] **code** (CONF:1140-27660).
 - a. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0165).
 - b. If negationInd!="true" then this code **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0166).
 - c. This code **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27661).
2. **SHALL** contain exactly one [1..1] **statusCode** (CONF:81-14444).
 - a. This statusCode **SHALL** contain exactly one [1..1] **@code="completed"** Completed (CodeSystem: ActStatus urn:oid:2.16.840.1.113883.5.14 **STATIC**) (CONF:81-19088).
Represents clinically effective time of the measurement, which may be when the measurement was performed (e.g., a BP measurement), or may be when sample was taken (and measured some time afterwards)
3. **SHALL** contain exactly one [1..1] **effectiveTime** (CONF:81-14445).
4. **SHALL** contain exactly one [1..1] **value** (CONF:81-14450).
 - a. If **xsi:type="PQ"**, then **value SHALL** contain exactly one [1..1] **@value** (CONF:PQRS_P0039).
 - b. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0167).
 - c. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0168).

- d. If **xsi:type="CD"** or **xsi:type="CE"** or **xsi:type="CO"** or **xsi:type="CV"**, then this **value SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:PQRS_P0016).
- 5. **MAY** contain zero or one [0..1] **@negationInd** (CONF:1140-28106).
- 6. If Risk Category Assessment is not done (**negationInd="true"**) **SHALL** contain exactly one [1..1] **entryRelationship** (CONF:PQRS_P0062) such that it
 - a. **SHALL** contain exactly one [1..1] **@typeCode="RSON"** (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002) (CONF:PQRS_P0063).
 - b. **SHALL** contain exactly one [1..1] **Reason (V2)** (identifier: urn:hl7ii:2.16.840.1.113883.10.20.24.3.88:2014-12-01) (CONF:PQRS_P0064).
 - i. **SHALL** contain exactly one [1..1] **value** with **@xsi:type="CD"** (CONF:1140-11367).
 - 1. This value **SHALL** contain exactly one [1..1] **@code** (CONF:PQRS_P0169).
 - 2. This value **SHALL** contain exactly one [1..1] **@codeSystem** (CONF:PQRS_P0170).
 - 3. This value **SHALL** contain exactly one [1..1] **@sdtc:valueSet** (CONF:1140-27657).

6. PART B – QRDA-III DSTU R1 Supplementary Implementation Guide for Eligible Professional Programs

The following sections provide information pertain to the Part B – QRDA-III DSTU R1 Supplementary Implementation Guide for Eligible Professional Programs of the 2016 CMS QRDA IG.

6.1 Template Changes

The template name and conformance number for each change is listed along with the text of the original (2016 CMS QRDA IG, Version 1.0, 07/08/2015), the text of the update (Appendix, 02/26/2016), and the rationale for the change.

Table 44 QRDA-III Template Changes to 2016 CMS QRDA IG

| Template | Conf. # | Version 1.0 (07/08/15) | Appendix (02/26/16) | Rationale |
|---|---------|--|--|--|
| 8.3.9 Reporting Parameters Act (CMS EP) | 711293 | This high SHALL contain exactly one [1..1] @value="20161231" (CONF:711293). Note: For Program Year 2016, the reporting parameter start date SHALL be "20161231". | This high SHALL contain exactly one [1..1] @value="20161231" (CONF:711293). Note: For Program Year 2016, the reporting parameter end date SHALL be "20161231". | No change to the constraint. Corrected the typo in the Note. It should be reporting parameter end date. |

6.2 Measure Population Codes Value Set Update

HL7 has deprecated the ObservationPopulationInclusion value set (2.16.840.1.113883.1.11.20369), which is superseded by the new value set PopulationInclusionObservationType

(2.16.840.1.113883.1.11.20476). As shown in Table 45, the new value set draws codes from the ActCode code system instead of the ObservationValue code system. The [eCQM Specifications for Eligible Professionals Update June 2015](#) are specified based on the Health Quality Measures Format (HQMF) R2.1, which use the codes from the new PopulationInclusionObservationType value set. As a result, all eCQM specifications from the June 2015 Update use the code Initial Population (IPOP) to indicate initial population.

However, the base HL7 QRDA-III R1 standard still uses the deprecated value set and still references the code IPP (Initial Patient Population), therefore, for the 2016 Reporting Period, the deprecated ObservationPopulationInclusion value set should continue to be used for reporting in QRDA-III according to the conformance statements specified in the 2016 CMS QRDA IG Part B. For example, Use of code IPP from the ObservationValue code system is expected, and submissions will be rejected if IPOP from the ActCode code system is used in QRDA-III files for the 2016 Reporting Period.

Table 45 ObservationPopulationInclusion Value Set vs. PopulationInclusionObservationType Value Set

| | Deprecated Value Set | New Value Set |
|----------------|---|---|
| Value Set Name | ObservationPopulationInclusion (OID: 2.16.840.1.113883.1.11.20369) | PopulationInclusionObservationType (OID: 2.16.840.1.113883.1.11.20476) |
| Code System | ObservationValue (OID: 2.16.840.1.113883.5.1063) | ActCode (OID: 2.16.840.1.113883.5.4) |
| Codes | IPP (Initial Patient Population), DENOM, NUMER, etc. | IPOP (Initial Population), DENOM, NUMER, etc. |

6.3 eCQM Specifications for Eligible Professionals Update June 2015 UUID List

The following tables list the Version Specific Measure Identifier for each eCQM included in the [eCQM Specifications for Eligible Professionals Update June 2015](#), and the population identifiers for all population criteria within each of the eCQM. If an EP eCQM specifies Reporting Stratification, identifiers of reporting strata are also listed for that eCQM. **All UUIDs are case insensitive.**

Table 46 UUID List for eCQMs EP Update June 2015: Proportion Measures without Reporting Stratification

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID |
|-----------|--------------------------------------|---|---|--|---|--------------------------------------|
| CMS117 v4 | 40280381-4be2-53b3-014c-056c3662131d | 4781DC5A-E702-4CC0-A1E4-895FBC306503 | C4EE1460-6A64-4CCA-8AA3-1AFCB9675043 | None | DC228E93-BE7D-4263-A60C-F926FC8CCFE4 | None |
| CMS122 v4 | 40280381-4b9a-3825-014b-e0a9409212a3 | 2FB78131-56EC-4D61-8451-0A1BA7E6A0D9 | 3D52925B-0D9B-466D-A181-68E984FA0634 | None | 3967BACE-89A2-4089-AB0E-CD7BA00650BF | None |
| CMS123 v4 | 40280381-4c18-79df-014c-2e72bd870d38 | 0A7F8C0E-A7F7-4064-9852-C56708D7E290 | 48764B33-6FA5-4418-B131-06D9A9012FB2 | 69A433BA-2D35-4D76-AD20-F35CDDCE55DD | 0E69D381-A7E7-4063-BA85-C5859B7B3A12 | None |
| CMS124 v4 | 40280381-4b9a-3825-014b-e05f923d1119 | D6B28D5E-B5F0-4982-9570-A68AC1954D59 | 8C2DBA1C-6EED-47EB-9513-57F42F1B5F65 | D638BDD6-1C53-46CE-B998-AF22A75A9DEF | 326FFFBC-7C5F-4761-B27A-472CD9CFADB1 | None |
| CMS125 v4 | 40280381-4b9a-3825-014b-e10b1e0a13db | B97FD9D4-BC34-45C5-854A-2BCB28AEF762 | 27EF7314-D85A-4FD2-AAC1-08517E9807BC | 28704390-AEB3-47E5-9691-67F112BC3234 | 2520997A-816E-4780-823F-578A15CD78BE | None |
| CMS127 v4 | 40280381-4be2-53b3-014c-0f589c1a1c39 | 8948681A-1B82-4634-B223-2C1139505C82 | 5C9B1703-06DD-4968-A267-2C35F7D8F40A | None | CD5629AB-09F9-4E26-B93B-8D670667B946 | None |
| CMS128 v4 | 40280381-4de7-db4d-014d-e80fb801009e | IPP 1 1CA33EC9-9B38-4FB9-A655-E903C7AE35DD | Denominator 1 A91B4874-832A-45A4-BA90-16B913FA75F9 | Denominator Exclusions 1 6032F3D5-6884-4FC7-B664-D7AB2608ECA8 | Numerator 1 D07E488E-A236-46A2-9698-86F74B9215AF | Denominator Exceptions 1 None |
| | | IPP 2 25E873FC-1BB4-444B-8A87-E4E3ACE414C3 | Denominator 2 4201A791-7A47-4B0A-A118-71E4A643361A | Denominator Exclusions 2 6A0F91DF-9D5F-424E-9FD2-6716E7094C46 | Numerator 2 40723BE2-8A74-4C23-B68F-8C1F60055036 | Denominator Exceptions 2 None |
| CMS129 v5 | 40280381-4be2-53b3-014b-e5e7f0db01ce | 1F136C5C-E0FE-4370-B872-1631F1F359D1 | EA79130D-4538-4087-A213-921E32D8A59D | None | DC91E60A-F924-4549-8B63-F2EE63782236 | DC2D0B45-57CC-4C34-9F7C-556354EF0225 |
| CMS130 v4 | 40280381-4b9a-3825-014b-e0bc5efd12f0 | 26B02BDE-2E98-4811-8DB7-604FA53D82E3 | 14037749-68BD-4A08-9BF7-5E35CE8CB68D | 69AC8C5E-CBFD-430C-9C9F-8B6CA55192DE | 33296303-8108-44D9-B523-1FBB74834064 | None |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID |
|-----------|--------------------------------------|---|---|--|---|--------------------------------------|
| CMS131 v4 | 40280381-4b9a-3825-014b-e0a0ec991268 | 4BA62172-1B58-4884-BD38-33E958D70E41 | 06832DB7-41F5-4E22-B54E-44637282D632 | None | A6C440B1-9DD4-4C3F-BC08-EE774CDEB04D | None |
| CMS132 v4 | 40280381-4b9a-3825-014b-dbe6bbcd0f63 | B752473C-5DC0-4D28-8312-FAEFEA408510 | 792E42BE-816B-4A63-A274-1635D37F80BD | B19762ED-650B-4154-804A-F07212C1BFD6 | 8838A6E6-7F06-453D-B124-384B185D1C3F | None |
| CMS133 v4 | 40280381-4c18-79df-014c-2091382800a9 | E0D0D057-C7E9-4CF9-9960-F6134AA1EEAB | 13807977-CAD1-46A6-84B0-4285E13756F4 | 002B5226-FE08-47CD-8308-5BCFDBE4795F | FDDB6DC0-94AB-47A6-AF29-FDC9FC010592 | None |
| CMS134 v4 | 40280381-4be2-53b3-014c-0a64db7e1750 | 915B5229-317F-4283-851D-0A0C965C9BD1 | F99A28D7-228F-4374-BD1E-8A1BF3F97A9B | None | 4B1984A4-2E38-412C-AFE7-A396D656EA20 | None |
| CMS135 v4 | 40280381-4b9a-3825-014b-e156e741144b | 4A5A8791-FBB2-4A3A-A66B-7B2F72942C0C | 70F64263-A982-4C44-B2EC-11844FF69F51 | None | EF9FAFA2-0902-4006-8E9F-E0C7502EFCE3 | 03AE0C18-57E6-4C32-9614-B0E6825EEF6E |
| CMS136 v5 | 40280381-4de7-db4d-014d-e8910d540228 | IPP 1 02ECF48F-AED5-46D0-BB06-5D56C59A305A | Denominator 1 B87CD5A6-17B3-4A7E-B220-BCB262DE748E | Denominator Exclusions 1 49BA9108-0CCF-41E3-8AF7-F99642FAE1A8 | Numerator 1 8ACEF21B-D440-4707-9EDF-9ED9A5E41991 | Denominator Exceptions 1 None |
| | | IPP 2 BE90E902-AF65-4915-B112-6A9D57D0412A | Denominator 2 F7C7379B-9BC5-4EA9-BE04-18B774F92C95 | Denominator Exclusions 2 6178F48F-2EC2-4381-A449-8C8BBC04F0EE | Numerator 2 989F89FB-0796-4617-B561-6375BE24BF23 | Denominator Exceptions 2 None |
| CMS138 v4 | 40280381-4c18-79df-014c-2dfa25f60c0e | 7A8A1DE0-5324-4124-ABF0-8FE9BAEA7B47 | 669EA368-3E8D-4D79-8D72-FFD8DF700559 | None | 9ED6FBEC-69EE-4408-997E-1D9B6EFA5B6C | EA731B59-089B-42DD-8853-C5AC995A5729 |
| CMS139 v4 | 40280381-4be2-53b3-014b-ebaf72d707c4 | FF1E2FC5-0B73-4445-9569-03C0ABE2AB5F | CA735FB5-C251-413E-9A53-01C78DC3D071 | None | B3A7081A-E8DC-4BE1-9C99-3FE7D6432BA4 | E1CC7907-731C-4C08-908B-9172F35AA44E |
| CMS140 v4 | 40280381-4b9a-3825-014b-c16d387006ee | 94C3CD3F-0D91-43C4-BDF3-7CEED8D9454F | 50E4F670-014F-4F53-ABCE-3075295219EB | None | 4895695A-181A-4F79-A9DE-1AA6B4B62C0A | 0D4B7188-2487-4EDF-91C4-E154C71F7728 |
| CMS141 v5 | 40280381-4b9a-3825-014b-c184a62f0704 | A3D07003-21C6-4812-830B-F031166B0EFB | E7DA8AE3-E69D-4C7B-B596-E0A1D2F58B70 | None | CF26D337-62B1-4259-85B0-412596734AC5 | B778F629-F52C-4F9A-B811-B45C7CEF5DF4 |
| CMS142 v4 | 40280381-4be2-53b3-014c-04948c45115e | 4B7469AC-D68A-456D-B3BB-11D1774BEEA9 | 01BDAB3C-A242-4C23-884A-C18FE5188DB4 | None | 65FAADF6-7EAE-4988-AC98-60735C17496E | 5789DC72-348A-4F71-90AD-16CA8E4030AB |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID |
|-----------|--------------------------------------|--|--|---|--|---|
| CMS143 v4 | 40280381-4b9a-3825-014b-cbaaf7620b3c | C3D39BAA-ADC3-49AB-B9A1-99EAE5D40866 | 4520AF66-04A4-4736-9FF3-0E2CE7F80891 | None | F68F309F-DCDA-4468-AB72-024FB6ABAB66 | D5AFA48C-6E72-448D-876A-D5695C888186 |
| CMS144 v4 | 40280381-4b9a-3825-014b-e0c7ac461325 | C6A10EE6-155B-4271-AAE1-17AFC235B9D7 | 6CD99047-227C-4185-93C7-6FC02ED24B5F | None | 69922F4F-1C2E-43CB-B6C5-8942D446282B | C9497273-437E-4F9D-99B6-6F99D2A7C832 |
| CMS145 v4 | 40280381-4de7-db4d-014d-e8833c8401f7 | <u>IPP 1</u> 7F4E10E0-279D-4052-8A62-6BC5F1548185 | <u>Denominator 1</u> 73E6B1F0-C0CA-4D3D-81A9-AFDA1C691DB6 | <u>Denominator Exclusions 1</u> None | <u>Numerator 1</u> B2965D55-32CB-4D95-A776-A83584F4E313 | <u>Denominator Exceptions 1</u> 17F70DCB-E5B9-49A1-AA0D-CA32FAB17E9C |
| | | <u>IPP 2</u> D2F254D0-A41D-462B-A44E-484C0EFBE1E5 | <u>Denominator 2</u> 8B048E9E-3F50-48DC-A010-8A59257FC74B | <u>Denominator Exclusions 2</u> None | <u>Numerator 2</u> C3172FFA-F2B5-4F74-9560-05D1C76080F9 | <u>Denominator Exceptions 2</u> 490D615B-1498-4BBF-8257-CA6029334960 |
| CMS146 v4 | 40280381-4b9a-3825-014b-e0999f911223 | C2335667-39BA-4553-830B-27B37B3606DE | AC05E071-55D0-45B5-BA6F-D5C66668EC50 | 0253DBE2-A195-4006-ADD2-53B8A6099D0A | 6E4D0C61-04FA-46B2-9B3E-40C38A87B5AB | None |
| CMS147 v5 | 40280381-4be2-53b3-014c-13f567921f71 | 0204FA9F-0205-4883-8D36-2207D6CF926C | DC9C0525-D25C-4EC9-8818-23BEF3688150 | None | CF15BE5D-C071-426D-89D5-3AC83CB2D129 | 39502C95-BA44-42A0-9E4C-3433BB3F2752 |
| CMS148 v4 | 40280381-4b9a-3825-014b-e0b49cd612d2 | C82F53A3-3CFA-4647-B285-852474EE97CE | 299677D2-D52E-4930-B908-5C2282C804B5 | None | 1BB18412-A0B1-412A-976F-BB41BD3BE516 | None |
| CMS149 v4 | 40280381-4b9a-3825-014b-dbd811090f3d | 047A977E-7163-4286-8D78-D2FCC087BDB8 | 0D59D313-70A6-41C4-9CFF-5EEDF881C7AD | None | FE377ED0-01C9-41FF-8BF8-164F3D4CD8FA | 824025F0-4E35-490A-B812-46460023C941 |
| CMS154 v4 | 40280381-4b9a-3825-014b-c27ee384089e | 556FD028-2290-47F9-A163-83B9DB9DD935 | 6C03418E-161D-4F1E-8143-92948CE8A1C8 | B20C781F-235D-4C48-88EE-19ABFF2D0BCD | C5232252-17FA-416B-96D1-669E71877084 | None |
| CMS156 v4 | 40280381-4de7-db4d-014d-e86c831201c7 | <u>IPP 1</u> 1AE2BC96-8D6E-43BC-997D-A7C5A44923C5 | <u>Denominator 1</u> C4F68104-C987-45FC-B45A-9D92D1B61810 | <u>Denominator Exclusions 1</u> None | <u>Numerator 1</u> 256E5CA3-C176-4B3D-9549-17687475F8C1 | <u>Denominator Exceptions 1</u> None |
| | | <u>IPP 2</u> D63330A3-5B34-46DE-8965-D0AFFA640B34 | <u>Denominator 2</u> 56253E6F-3C0E-417D-8673-C66E5130FBB2 | <u>Denominator Exclusions 2</u> None | <u>Numerator 2</u> A58AA0BB-6C42-4FCF-AF42-776908B2A847 | <u>Denominator Exceptions 2</u> None |
| CMS157 v4 | 40280381-4b9a-3825-014b-bd61148f05c9 | CC7E2F42-504C-4C8B-BBFE-B6DB0612B6A4 | FCABC394-C505-4F3D-8198-A7AE0E849D63 | None | 39B35A64-F6E9-40A8-9F70-45E7559B3514 | None |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID |
|-----------|--------------------------------------|---|---|--|---|--------------------------------------|
| CMS158 v4 | 40280381-4b9a-3825-014b-cbf6b87d0bb6 | 20EEB8DD-81CC-4314-B896-92BA26777CEA | 43923617-2864-4580-B54F-787FEF351176 | None | B71E4A2E-B653-4CE7-B4AF-4246A43A7751 | 1571D44B-7EF5-4CE0-A12B-FE87E0AFD6CC |
| CMS159 v4 | 40280381-4b9a-3825-014b-c1a59e160733 | 44375627-5B70-478B-8396-C0ABB4E90B2C | 9EBB1F0D-0545-4BC9-9AC6-4597FAC6008D | BFF0D4E5-D657-4BB4-93B0-6D3E2E075946 | 491942DC-2EFC-4E9D-97AF-CC9B0B987598 | None |
| CMS160 v4 | 40280381-4de7-db4d-014d-e932bb6c02d0 | IPP 1 E13512DB-2613-4951-AE10-704E0639F327 | Denominator 1 115844E8-D34A-48BB-A526-117EF4FDD09C | Denominator Exclusions 1 9B45E630-CE05-41E3-BA3B-7FE6CFE92772 | Numerator 1 59A538B2-0A8B-4669-BB4D-B730365B93B8 | Denominator Exceptions 1 None |
| | | IPP 2 FDE3C0AE-4027-42DE-BB39-B1549A88FDC7 | Denominator 2 793CF4FC-5925-4A49-B276-B92591585C28 | Denominator Exclusions 2 0D490757-07DE-4CEF-A246-3BA60AB637D0 | Numerator 2 C6E16990-A2D6-4F9E-98A0-2D4B8670A592 | Denominator Exceptions 2 None |
| | | IPP 3 BF99D08F-F72D-4383-8AFA-5C0B463ECB75 | Denominator 3 8B941526-C130-4B81-ACD5-5B108CDBF38B | Denominator Exclusions 3 CDD9F634-6DD3-4A90-AE4D-C6D8C9536953 | Numerator 3 D0B8AE96-84C0-4127-BCA2-29D4F49B463D | Denominator Exceptions 3 None |
| CMS161 v4 | 40280381-4b9a-3825-014b-c1fde24a07d4 | 197E74C9-FB84-4A8C-84D9-12300AD81E8D | C2A521C9-4C34-4EDB-A767-D07478064EE0 | None | C2EFF441-E7C1-41A3-9EAF-D3C5847D3DA4 | None |
| CMS163 v4 | 40280381-4cc2-8ffd-014c-d8450c9a0848 | BF274A7C-1932-4B84-851A-A1DA9F4A1FA5 | 73E7622B-5197-4221-A4FD-F46DED2ED01E | None | C553D686-F728-434B-953E-1CCD8D8DDEC6 | None |
| CMS164 v4 | 40280381-4b9a-3825-014b-c2899fcf08b9 | 94316DAF-5451-4B13-BD5D-6E72BE285857 | A442564E-BD90-4B7F-AB2A-9A8A5900DC12 | None | 4572D733-225D-4173-804C-C19162C6DB9D | None |
| CMS165 v4 | 40280381-4b9a-3825-014b-c290abf408ca | 5B6CE307-89B8-4C0D-9A58-AA344093019B | B2C6ACF2-07E5-45B9-B1C9-3ADB3A693F96 | B07E4A3B-68F7-4B5C-AE88-92AE38870044 | 3F385926-FFB0-40C9-B916-37827482C31E | None |
| CMS166 v5 | 40280381-4b9a-3825-014b-e07d028011c2 | 925F4B31-C91C-4972-8056-2F3E9C302B42 | DEDFE35C-637D-471C-8E69-1F19BC9E3070 | 8C6E4F97-2175-4987-A6FF-CD0117BC5081 | B9FC3172-123A-4D14-B4B9-CF4CECB9BB16 | None |
| CMS167 v4 | 40280381-4c18-79df-014c-20a0e46900c0 | 7155F098-3D41-44B5-AC3A-65BA00C3093C | B983156C-1092-4331-A35A-69E375BD5400 | None | 62DE0A25-2910-4C57-B3F9-4EB434C40A77 | 2DA5A07A-8435-4246-9680-1170BAEF9D6D |
| CMS169 v4 | 40280381-4cc2-8ffd-014c-d841bbd9082d | AB56D0AC-738F-4B8D-A282-5649B8E5CA78 | BCF22B75-F40E-43C1-A278-1AE32CFE4785 | None | A458DC68-412F-4A35-A947-4A393453FA58 | None |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID |
|-----------|--------------------------------------|--|--|---|--|---|
| CMS177 v4 | 40280381-4c72-51df-014c-75b00a130105 | A23EFB99-D693-4224-A108-4803B614B44F | 5ECB3EC5-6FF8-4F2E-8961-9563ECAC05E8 | None | F877F246-FD2E-4035-B4E1-4DF1618E191F | None |
| CMS182 v5 | 40280381-4de7-db4d-014d-e861ea2d01a1 | <u>IPP 1</u> B2C8C825-2462-4FD0-B08C-FF7776C91617 | <u>Denominator 1</u> E05BF244-8112-4E53-A4A4-9C486F362394 | <u>Denominator Exclusions 1</u> None | <u>Numerator 1</u> CEFBD582-FE7B-4B2B-A97E-DC38BA10B7DB | <u>Denominator Exceptions 1</u> None |
| | | <u>IPP2</u> 732202D0-7475-4491-BA4E-AEF3A6953F15 | <u>Denominator 2</u> D11CBD66-9923-430C-8229-EA49CA3B9A1C | <u>Denominator Exclusions 2</u> None | <u>Numerator 2</u> 42C96EEA-274C-41CA-9B62-A9B214E5AC44 | <u>Denominator Exceptions 2</u> None |
| CMS22 v4 | 40280381-4be2-53b3-014b-ebfcb19508cb | E7939A0C-6C9D-4470-B526-D6C92AC34C4E | CB71635D-7209-453C-9C93-2F37664C7027 | 3982C59F-E544-4A83-A212-969093E4D5E9 | 1810655F-2CE6-4C23-92A4-1992DB230014 | E2E2BCE3-C884-4372-95F6-20B339D3FA9A |
| CMS2 v5 | 40280381-4b9a-3825-014b-c11ae59d069b | DF383DD5-CEB7-4DE8-855B-092D0F9B5E6F | 2F12D229-0073-44F1-843E-90476720EFF4 | D73F03FF-C72D-41C9-A61B-EA7D22CA2A91 | 647CF3B2-6423-48A6-AC2B-5D0A4AB74BCF | E1E06DD3-6369-4682-AD2F-BAAF063B0A8A |
| CMS50 v4 | 40280381-4c5d-0de2-014c-70a4a2690d14 | 4E4827C7-3264-4A13-83BD-D87C795B520E | 408098C9-2549-41DF-BC89-5D9997ECD56A | None | 713FE7B4-6C31-4115-9F3F-454C97BDF56E | None |
| CMS52 v4 | 40280381-4de7-db4d-014d-e8404b8a0178 | <u>IPP 1</u> 18DC0627-FD33-4878-BAE0-A9F637588D17 | <u>Denominator 1</u> AEE6BA20-B8DD-4E50-9107-83979637F8BC | <u>Denominator Exclusions 1</u> None | <u>Numerator 1</u> A631FAFA-8BE6-407A-A5EE-EE340D946A28 | <u>Denominator Exceptions 1</u> 08A86F2B-156F-4C51-8070-2D146BE55534 |
| | | <u>IPP 2</u> 938FAAA0-FD7F-439C-8F74-010624077F46 | <u>Denominator 2</u> 1311D63D-93E8-4C4D-9D5C-EFA4D33867A9 | <u>Denominator Exclusions 2</u> None | <u>Numerator 2</u> 6CFF945C-7E61-453D-9414-1E72B000584E | <u>Denominator Exceptions 2</u> 4018F9FE-6714-47A8-A413-B9ABD723B62F |
| | | <u>IPP 3</u> 5B03886D-E4DD-4F41-87E1-CA5051DF9962 | <u>Denominator 3</u> 35594B07-647C-44C2-AA87-B357EF2E6368 | <u>Denominator Exclusions 3</u> None | <u>Numerator 3</u> A2EFFD33-ED3C-413A-91E7-B3A9A3949896 | <u>Denominator Exceptions 3</u> None |
| CMS56 v4 | 40280381-4be2-53b3-014b-e5f6100801ed | E5D0EFAC-5698-4C54-B2E6-7343E854FCC2 | D01AE357-A9ED-449A-84DD-ED2EEE39776E | 441A6DAA-E2A8-424F-BBB6-4CD52F8C8C77 | B1C0D025-089D-41CA-A886-3AD023A478B6 | None |
| CMS61 v5 | 40280381-4de7-db4d-014d-e95f07e30324 | <u>IPP 1</u> 3F287DF9-C80E-4160-820E-D6289283520B | <u>Denominator 1</u> 2A474E76-2BBC-4781-9670-424F72E25DC3 | <u>Denominator Exclusions 1</u> CC698B09-1123-4867-8EC7-F26D3FF36C9D | <u>Numerator 1</u> 1D31D3F8-E800-4369-945C-A9D7FB71C61D | <u>Denominator Exceptions 1</u> B331330B-B6F5-4552-B98E-0241CA5A7D91 |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID |
|----------|--------------------------------------|--|--|---|--|---|
| | | <u>IPP 2</u> EB3C303F-1169-4926-9C78-DC12205C7304 | <u>Denominator 2</u> E68A966A-A8F4-4CF7-9CBF-B9A74CBDE2C3 | <u>Denominator Exclusions 2</u> E3550879-AA83-499B-861D-22489BF4F349 | <u>Numerator 2</u> 50E406EE-7931-4F42-B1A0-81F828B57B7F | <u>Denominator Exceptions 2</u> CB6E5BC8-927B-4CE1-80BB-3EED0F267614 |
| | | <u>IPP 3</u> D7EC4B97-9C92-46FA-9994-F60B0C793BE7 | <u>Denominator 3</u> F2843721-03AE-41EF-A394-53223F6015C2 | <u>Denominator Exclusions 3</u> 370FAF33-63D2-4D4D-A543-29A9F5CB089C | <u>Numerator 3</u> 5E22B1E4-8C8C-4E63-9ECC-E3616877E33B | <u>Denominator Exceptions 3</u> 3F2E0C98-2708-4D9E-8A8E-09C5B159E271 |
| CMS62 v4 | 40280381-4b9a-3825-014b-cbbddd080b57 | 59BFAD43-DA89-4A93-8517-57B1D26E4D76 | EE76163E-E047-4762-86AC-5555FA3BBF29 | None | 5D0CAF47-1258-43F8-A4FB-463A350AFDDE | None |
| CMS64 v5 | 40280381-4de7-db4d-014d-e9482dd402ed | <u>IPP 1</u> 16825725-1DFE-4A86-9298-444AD93A9C01 | <u>Denominator 1</u> 746CC758-A6A6-4277-8D7A-95924069B366 | <u>Denominator Exclusions 1</u> CC7CBD6C-1C66-48FE-B02D-9711E5E4C889 | <u>Numerator 1</u> B2F474D2-0CE9-474B-848D-5C81E3337CEE | <u>Denominator Exceptions 1</u> None |
| | | <u>IPP 2</u> A57A6949-7FD9-447B-B3AB-85DD11F27A42 | <u>Denominator 2</u> 23670265-2587-429C-BAC5-778E2A48A6D2 | <u>Denominator Exclusions 2</u> 827D1505-8FB6-4F5F-899C-18768C1701D1 | <u>Numerator 2</u> 3A094CBF-5AB9-47BD-AED2-F9A905BE7706 | <u>Denominator Exceptions 2</u> None |
| | | <u>IPP 3</u> F3C047D3-527F-4398-886F-A6A29867AF01 | <u>Denominator 3</u> D9D2745D-0D79-40CA-BC9F-CCC09C84A34D | <u>Denominator Exclusions 3</u> 59E701C4-9D89-40BD-8CAA-4CA6ED454D38 | <u>Numerator 3</u> D93CCB4A-C42A-4197-80D0-3FCC3A46CB2A | <u>Denominator Exceptions 3</u> None |
| CMS65 v5 | 40280381-4cc2-8ffd-014c-c7a21fda042c | 9678F138-E830-4C19-A01E-56FE869204F2 | D5FE985A-1A97-4B8B-ADA2-6EE957D30E36 | 99D98E96-23AA-40C4-8ABC-14D515495EE8 | 13A043BC-2F26-4B5D-9845-2F4F4CDF8D74 | None |
| CMS66 v4 | 40280381-4b9a-3825-014b-e06944e51139 | 59BF8D2E-61CA-45CF-8A1B-C15568A795F0 | 337661D8-8269-4D32-B043-DF79D18C4D89 | 6F6F1150-2A80-4CE1-8F71-4833F8D8E67A | 604F3C60-99FC-4C4B-B224-6A22D74E84E7 | None |
| CMS68 v5 | 40280381-4be2-53b3-014c-040de60d10e1 | A2D34316-B568-4B88-8B3F-B3F23E9ACECB | 3C7AD04C-20C3-4A2F-8295-8E0050C7797A | None | 5BE1E00A-EB11-47A4-AD45-E9AA964DB3F4 | 95EFE5F9-225F-4A5C-80CC-1552A56BCAAB |
| CMS69 v4 | 40280381-4de7-db4d-014d-e8de93d4027d | <u>IPP 1</u> 96087D4B-3589-42F1-99AE-41728C695035 | <u>Denominator 1</u> B3C3E087-5E09-429B-B08D-D657E4FAA2A9 | <u>Denominator Exclusions 1</u> 9B4C903A-3B7F-4423-98BD-BC7F1DF340E1 | <u>Numerator 1</u> ACA1F706-4E21-4C8E-990A-3EB3D85ADDF7 | <u>Denominator Exceptions 1</u> None |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID |
|----------|--------------------------------------|--|--|---|--|---|
| | | <u>IPP 2</u> 7E2EF784-43F6-4DD8-AECA-DE493FDB658B | <u>Denominator 2</u> 152AC320-38F2-4BC7-A038-75AD8719D4E5 | <u>Denominator Exclusions 2</u> EFE6669E-056A-4C0C-B169-F7B773C84836 | <u>Numerator 2</u> 80A876C7-C0AD-4870-A5C2-042C90BD5511 | <u>Denominator Exceptions 2</u> None |
| CMS75 v4 | 40280381-4b9a-3825-014b-c2730e6f088c | A2100BAA-6BFA-4222-8725-6E6F18EE2EA6 | 1F07E554-4E9D-46FB-AE0F-2629590136A8 | None | 42CDB789-F5C5-4076-A787-3BBD851010B1 | None |
| CMS77 v4 | 40280381-4be2-53b3-014b-ebcbaefc082e | CCBC588E-AF31-4A51-A93F-A23D48BDF4CB | CBA64AE5-E070-471F-B107-10CB10FF55CB | None | 924CAF4A-7C35-46E5-BB6E-72AA8E7284A4 | None |
| CMS82 v3 | 40280381-4cc2-8ffd-014c-d82cc95c07ce | A5C5DFC1-7997-40F9-B75D-FE93E1D38793 | F2D71E46-9C67-450F-A4B0-0C5750EAC7AF | None | 8547E9B5-523B-40FD-A5EC-76564DA78BF5 | None |
| CMS90 v4 | 40280381-4be2-53b3-014b-e5d4e6160186 | 5AA8064D-E192-464D-93F5-518A287A0EE2 | 453DC731-A932-41BB-97FA-E0F0AAF43AA8 | DFD2019F-4676-4028-A9BF-B8F940FB3C4C | D7CD59CD-ED0A-4C9E-902A-3BAC8F78BB76 | None |

Table 47 UUID List for eCQMs EP Update June 2015: Proportion Measures with Reporting Stratification

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID | Reporting Stratification |
|-----------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------|--|
| CMS126 v4 | 40280381-4b9a-3825-014b-bd9841640641 | E7A04B8B-C312-45C2-8292-87B7C17609FA | 0CB238F1-F908-49D8-9AAB-CBFE76F9F201 | 36EAF820-6043-4967-B88A-291FA7C7F9D6 | D8F2BE79-8E09-4999-872F-6E6C5A6CC685 | None | <u>Reporting Stratum 1</u> 9D805264-B084-4A61-8056-340FB6562FF1 <u>Reporting Stratum 2</u> 3B4B9F37-666E-4238-95E8-81AB82F259C6 <u>Reporting Stratum 3</u> B2C9777D-822F-4CAA-A9BC-98D388FC4544 <u>Reporting Stratum 4</u> 1024B126-4F30-415A-993C-8CA54752BC2C |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID | Reporting Stratification |
|-----------|--------------------------------------|--|--|---|--|---|--|
| CMS137 v4 | 40280381-4de7-db4d-014d-e88b64750209 | <u>IPP 1</u> 2FA8E945-7C1A-4B0C-B328-35EACDE36E50 <u>IPP 2</u> 08A2199E-E819-416F-A30B-CDBF47122EE7 | <u>Denominator 1</u> 3D4EDC81-E59F-463B-BB2A-A1F8D37F151C <u>Denominator 2</u> 5F1B4A02-57D6-4BF7-A6F0-D7738B396715 | <u>Denominator Exclusions 1</u> 037F2F4C-80E2-4C85-BDF8-F189DDAB3046 <u>Denominator Exclusions 2</u> A57990A2-2DA4-4326-825E-8A55735E516F | <u>Numerator 1</u> CB7FD92D-198C-438D-B054-6B0D23ADE892 <u>Numerator 2</u> 94430396-FE98-44DA-8C78-7FEB7146DF8C | <u>Denominator Exceptions 1</u> None <u>Denominator Exceptions 2</u> None | <u>Reporting Stratum 1</u> 4A689213-558D-4B54-8C28-9FE1FBDD3B87 <u>Reporting Stratum 2</u> F1808D0E-28BB-47BC-9EDF-656D592A79CE |
| CMS153 v4 | 40280381-4b9a-3825-014b-dc0a24b30faa | 2645D2CB-710C-4748-B871-A2968AD0ACEF | 9978D424-48E7-48AC-BC36-DD68BFE9E56C | 420FBBEE-3312-4793-9874-71CF56631D8C | BFADD7FB-BE49-4FEC-9A1B-1FF82D02DA97 | None | <u>Reporting Stratum 1</u> 7398F106-ACC4-4CC3-BE5A-E7F939E8D562 <u>Reporting Stratum 2</u> 33A7DA86-1326-4A38-B8F8-51088EAA7836 |
| CMS155 v4 | 40280381-4de7-db4d-014d-e877328b01dd | <u>IPP 1</u> 43485E66-D85C-47C2-B060-4C2817273715 <u>IPP 2</u> 3E5F7D75-D250-4601-ABD3-C8E0062E46C0 <u>IPP 3</u> 21C36A9E-94E7-42AB-8399-529F2417E700 | <u>Denominator 1</u> BA9A4346-A85C-4D61-BF40-F36AFAFDB5F0 <u>Denominator 2</u> 11A39220-961C-4062-A7AA-C757D4B6ADB6 <u>Denominator 3</u> B8C826E2-1A6C-4604-9309-C9573886A76C | <u>Denominator Exclusions 1</u> CA825D6F-6CD4-49D1-A755-DE6465091008 <u>Denominator Exclusions 2</u> 7F657C7A-0300-4A7C-89A8-A4DC31607763 <u>Denominator Exclusions 3</u> ABAFAEA9-D7CA-4C1E-966E-80A51F724CA8 | <u>Numerator 1</u> CFBF5DC5-10C3-40E1-B410-33B65482C164 <u>Numerator 2</u> 2DF56FA5-03B8-4C9F-9CBD-C2E0BF385C3A <u>Numerator 3</u> A39964C3-03F3-44F5-9BF4-8FC4C35F91F6 | <u>Denominator Exceptions 1</u> None <u>Denominator Exceptions 2</u> None <u>Denominator Exceptions 3</u> None | <u>Reporting Stratum 1</u> B8D65BA2-79F9-4B01-83F5-90392705A86A <u>Reporting Stratum 2</u> ADA0B14F-2DD6-4384-A079-55FC51BA83D4 |

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Denominator Population ID | Denominator Exclusions ID | Numerator ID | Denominator Exceptions ID | Reporting Stratification |
|----------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------|--------------------------------------|---------------------------|--|
| CMS74 v5 | 40280381-4b9a-3825-014b-c2609c45085d | BFD3F3C5-C1E3-4F23-8731-A4DE09BD8CB6 | 8FC13D2C-56BE-4A4D-BD97-D1BA6F877844 | None | 64236B90-F8D0-4FBD-A160-43A59FE069E4 | None | <u>Reporting Stratum 1</u> 2187E0E1-0058-4422-BCF4-D7A3AAB2B111 <u>Reporting Stratum 2</u> 8CE12B3B-A50C-4703-93DA-5CB67F306445 <u>Reporting Stratum 3</u> BAED1065-F5CF-4002-9692-22A4F9288138 |

Table 48 UUID List for eCQMs EP Update June 2015: Continuous Variable Measure

| eCQM | Version Specific Measure ID | Initial Patient Population ID | Measure Population |
|----------|--------------------------------------|--------------------------------------|--------------------------------------|
| CMS179v4 | 40280381-4c72-51df-014c-76d330d60481 | 00B251FA-1ECC-442F-B1F3-FC5EF17E8292 | 9D230CCD-7702-4F0E-937A-9EE221966111 |