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Assessing the Feasibility of Meaningful Use Stage 2 Clinical Quality Measure Data Elements at the Massachusetts eHealth Collaborative

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Abstract

The Meaningful Use Stage 2 Clinical Quality Measures reference a wide variety of clinical data elements. This report describes the results of a study to determine which of those data elements are present in a large set of patient data collected by the Massachusetts eHealth Collaborative and describes the impact of missing data elements on the components of Clinical Quality Measures.

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Executive Summary

This report describes the results of a study to determine the presence or absence of each of the clinical codes used in MU2 Clinical Quality Measure (CQM) data elements using a large set of patient data (500k patient records covering 5M care events) collected by the Massachusetts eHealth Collaborative (MAeHC). The nature of the source CCD's was outpatient (ambulatory) patient encounters, not inpatient (acute) patient admissions.

The results were used to determine the impact on the MU2 CQMs at two levels:

- Clinical data elements were ranked according to the intersection of their component clinical codes and the codes present in the patient data
- CQM populations were classified according to the ranks of their component clinical data elements.

The results of this analysis were then used to determine which CQMs are likely to work well with the MAeHC patient data and which require data that is not present.

Key findings:

- The majority of the codes used in value sets referred to by the MU2 CQMs are not found in patient data. Very few of the SNOMED-CT (0.03%) and LOINC (2%) codes used in MU2 CQMs are found in the MAeHC patient data.
- Many value sets do not contain any codes that are present in the patient data: across all measures over half of the MU2 CQM value sets contain no codes found in the patient data. Such value sets are referred to as non-intersecting.
- There are many measure populations containing only non-intersecting value sets. Across all measures, nearly 60% of distinct denominators and 27% of numerators reference only data that is not present in the patient data. Such measures will, by definition, report 0/0 or 0/*n* results for the patient data used in this study.
- The results demonstrate that many of the current MU2 CQMs do not function well with existing EHR data. Their performance could be significantly improved by extending value sets to include code systems commonly used in EHR systems.

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1 Introduction

The Meaningful Use Stage 2 (MU2) Clinical Quality Measures (CQMs)[1] reference a wide variety of clinical data elements. To date there has been little study of the feasibility of these data elements in real patient data.

This report describes the results of a study to determine the presence or absence of each of the clinical codes used in MU2 CQM data elements using a large set of patient data collected by the Massachusetts eHealth Collaborative (MAeHC).

The results were analyzed at two levels:

- Clinical data elements were ranked according to the intersection of their component clinical codes and the codes present in the patient data
- CQM populations were classified according to the ranks of their component clinical data elements.

The results of the analysis were used to determine which CQMs are likely to work well with the MAeHC patient data and which require data that is not present.

1.1 MAeHC Data Sources

The patient data for this study was sourced from two systems (A and B):

A. An advanced institution-built system for inpatient and outpatient care comprising approximately 3.4M CCDs for 358k patients and 4.7k providers
B. A leading commercial product comprising approximately 1M CCDs and 650k HL7 lab results for 200k patients for 269 providers

The data was extracted from both systems as HL7 continuity of care documents (CCD) and then imported into the MAeHC data warehouse for analysis. In both cases the CCDs were outpatient-oriented so limited success with inpatient measures was expected.

2 Introduction to Clinical Quality Measures

A familiarity with the structure of MU2 CQMs is required in order to fully understand the results of this study. This section provides a brief introduction to that structure.

2.1 Clinical Data Elements

Clinical data elements are described using the National Quality Forum's (NQF) Quality Data Model (QDM)[2]. An example data element would be `"encounter performed, office visit"`. A data element consists of:

- Type – a high level categorization of the element, e.g. `encounter`
- Status – the state of the element, e.g. `performed`
- Value Set – a set of clinical codes from one or more clinical vocabularies that describe the specific subset of the type, e.g. `office visit`

2.2 Clinical Quality Measures

Clinical quality measures define populations of patients or clinical events using combinations of data elements, e.g. consider the following population that seeks to identify patients that received some form of smoking cessation assistance during an outpatient encounter:

```
"Intervention, Performed: Tobacco Use Cessation Counseling" DURING
"Encounter performed, office visit"
OR
"Medication, Order: Tobacco Use Cessation Pharmacotherapy" Procedure
performed, DURING "Encounter performed, office visit"
```

The above population references three data elements, an intervention, a medication and an encounter. The intervention and medication are temporally related to the encounter using the DURING operator such that they have to happen between the temporal bounds of an encounter. A patient record would need to include at least two of the data elements (an encounter plus either a medication or an intervention) for that patient to be included in the population.

2.3 Value Sets

A value set defines the specific set of clinical codes that satisfy the intent of a data element. E.g. an office visit encounter might be defined using value set that contains a combination of CPT and SNOMED codes. To state that a particular data element is present in a patient's data means that one or more of the constituent clinical codes is present in that patient's data.

3 Code Occurrence Results

The data extracted from the MAeHC data warehouse consisted of a count of unique patients that contain each code used in the MU2 CQMs. Table 1 shows a small extract of the code occurrence counts for the System B data.

Table 1: Sample Code Occurrence Counts

Element	Code System	Code	Patients
Physical Exam, Finding: Weight	LOINC	3141-9	173461
Physical Exam, Finding: Height	LOINC	8302-2	155451
Physical Exam, Finding: Systolic Blood Pressure	LOINC	8480-6	118274
Physical Exam, Finding: Diastolic Blood Pressure	LOINC	8462-4	118026

For many code sets, a graph of the patient count for a given code demonstrates a pronounced long tail. To illustrate, Figure 1 shows the count of unique System A patient records containing each ICD-9 code.

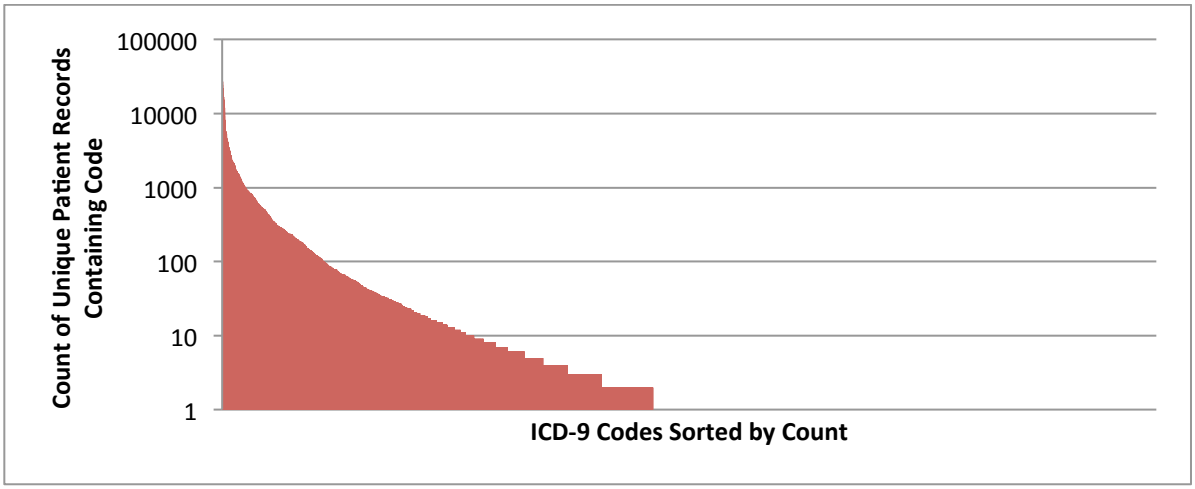


Figure 1: Count of unique System A patient records containing each ICD-9 code. Codes are sorted by count with the leftmost code being the most common and the rightmost the least common.

Over 41% (1450) of the 3460 ICD-9 codes that were found are present in 5 or less patient records, 17% (611) of the codes are found in only a single patient record. This is a surprising result given the large population of patients and considering that all of the providers are using the same EHR system and shows the diverse nature of clinical data.

3.1 System A

Figure 2 shows the code occurrence counts for each of the clinical vocabularies used by System A. Each bar represents the full set of codes used in the MU2 CQMs for a particular clinical vocabulary. The lower portion of the bar shows the proportion of those codes found in the System A patient records, the upper portion shows the proportion of those codes not found in the System A patient data. E.g. there are 27 CVX codes referenced by the MU2 CQMs. Of those 27, 11 were present in the System A data while the remaining 16 were absent.

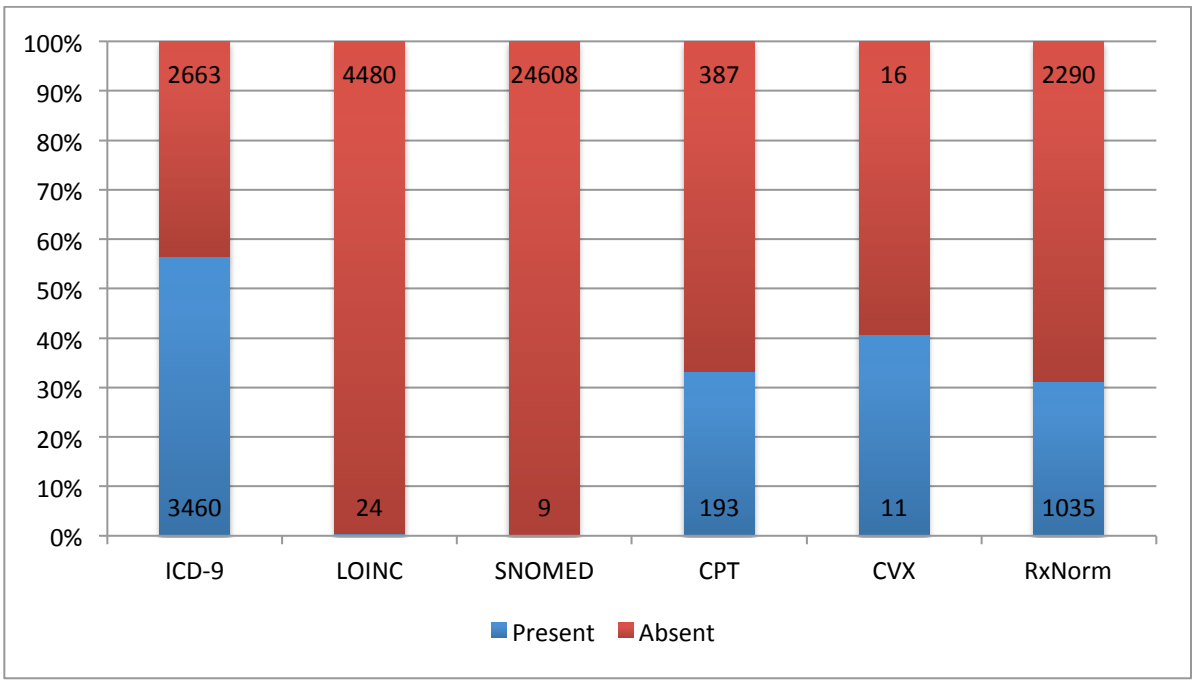


Figure 2: System A Code Occurrence. Each bar represents all of the codes from one of the code systems used in MU2. Blue segments of each bar show the percentage of codes that are present in the System A patient data.

Note the low numbers of LOINC and SNOMED-CT codes in the System A data compared to the other code sets, these have a significant impact on the value set and measure population intersection results later in this report.

While MU2 CQMs also include codes from ICD-10 and HCPCS, neither is shown here since those code sets are not used in either system.

3.2 System B

Figure 3 shows the code occurrence counts for each of the clinical vocabularies used by System B. As above, each bar represents the full set of codes used in the MU2 CQMs for a particular clinical vocabulary. The lower portion of the bar shows the proportion of those codes found in the System B patient records, the upper portion shows the proportion of those codes not found in the System B patient data

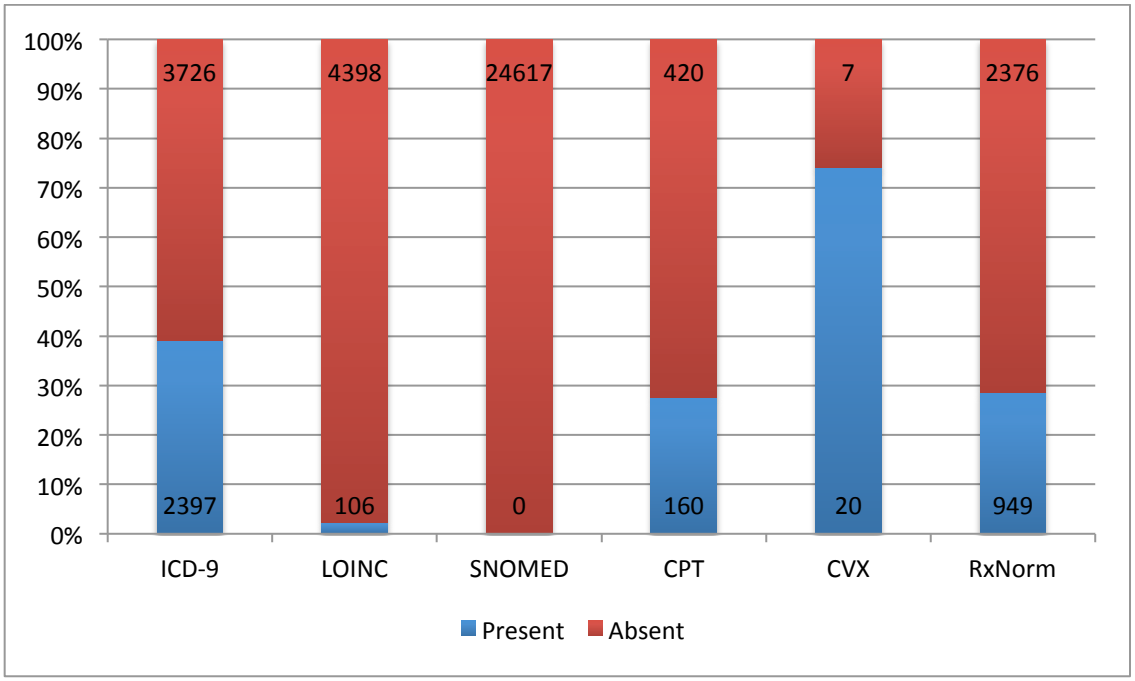


Figure 3: System B Code Occurrence. Each bar represents all of the codes from one of the code systems used in MU2. Blue segments of each bar show the percentage of codes that are present in the System B patient data.

Again, note the low number of LOINC and SNOMED codes present in the System B data. Compared to System A, there are fewer ICD-9 and RxNorm codes but a greater number of LOINC, CVX and CPT codes.

4 Value Set Intersection Results

As described in section 2, a value set contains one or more codes from one or more clinical vocabularies. Given the code occurrence results above it is possible to compute the intersection of each MU2 CQM value set with the patient data as follows:

$$I = \frac{P}{T}$$

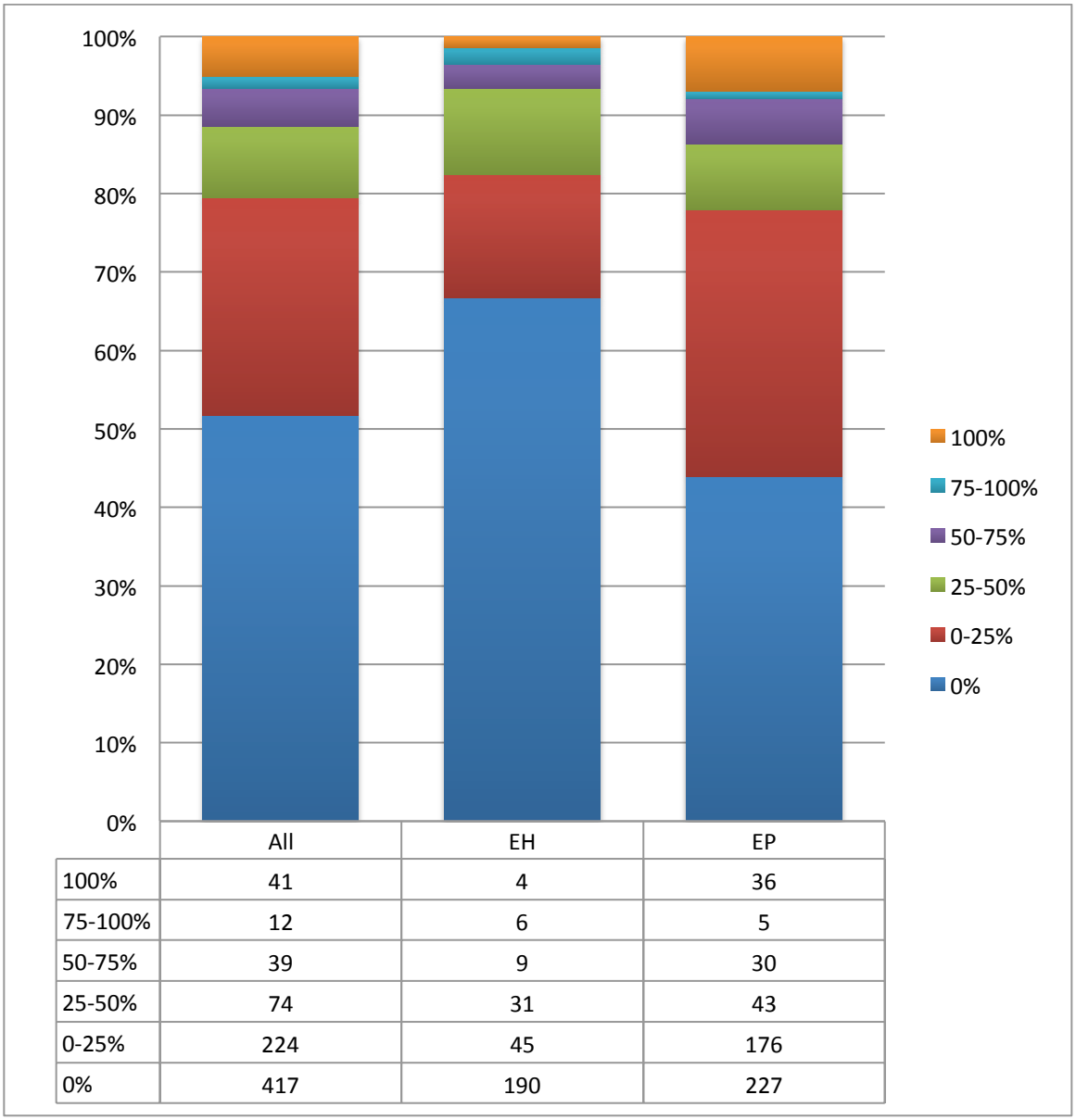
where I is the intersection, P represents the number of codes in the value set that are present in the data and T represents the total number of codes in the value set.

The following subsections show the results of this computation for System A, System B and the data from the two systems combined.

4.1 Combined System A and System B

Combining the data from both systems improves the likelihood of a value set intersecting with the patient data. Different systems use different code systems and/or codes for the same or equivalent clinical concepts, the union of data from multiple systems therefore provides a wider range of clinical codes and a higher probability of intersection with a value set.

Figure 4 shows the intersection of MU2 CQM value sets with the combined patient data from System A and System B.

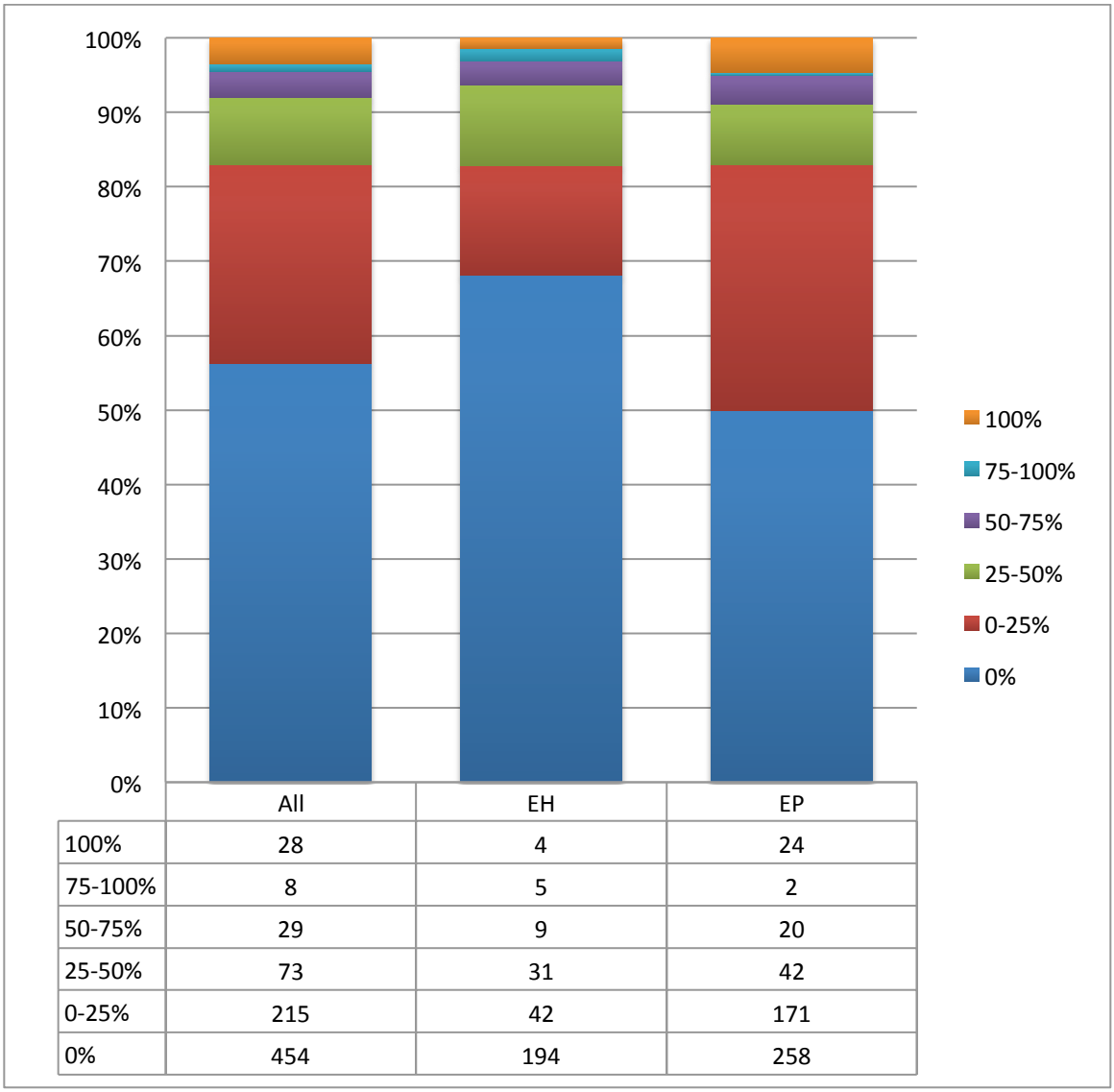


	All	EH	EP
100%	41	4	36
75-100%	12	6	5
50-75%	39	9	30
25-50%	74	31	43
0-25%	224	45	176
0%	417	190	227

Figure 4: Value set intersection for combined System A and System B data. Each bar represents the total number of value sets for either all measures (All), eligible hospital (EH) measures, or eligible provider (EP) measures. Each bar is subdivided to show the proportion of value sets with different levels of intersection.

4.2 System A

Figure 5 shows the intersection of MU2 CQM value sets with the patient data from System A.

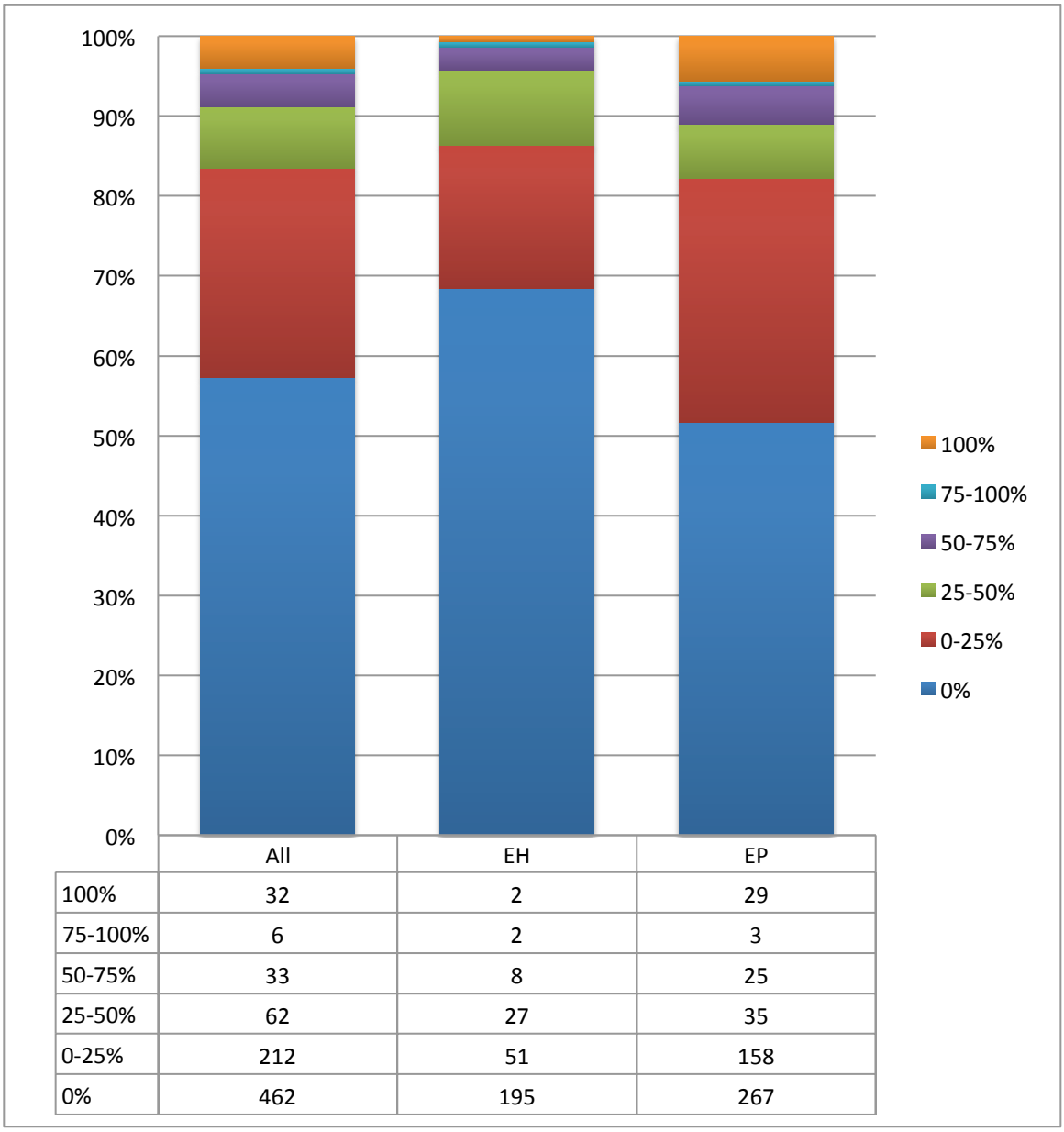


	All	EH	EP
100%	28	4	24
75-100%	8	5	2
50-75%	29	9	20
25-50%	73	31	42
0-25%	215	42	171
0%	454	194	258

Figure 5: Value set intersection for System A patient data. Each bar represents the total number of value sets for either all measures (All), eligible hospital (EH) measures, or eligible provider (EP) measures. Each bar is subdivided to show the proportion of value sets with different levels of intersection.

4.3 System B

Figure 6 shows the intersection of MU2 CQM value sets with the patient data from System B.



	All	EH	EP
100%	32	2	29
75-100%	6	2	3
50-75%	33	8	25
25-50%	62	27	35
0-25%	212	51	158
0%	462	195	267

Figure 6: Value set intersection for System B data. Each bar represents the total number of value sets for either all measures (All), eligible hospital (EH) measures, or eligible provider (EP) measures. Each bar is subdivided to show the proportion of value sets with different levels of intersection.

4.4 Discussion

Value sets with 0% intersection are the main concern; a value set with any non-zero intersection is functional since a particular system may only use a single code for a given clinical concept. The results show that a significant proportion of the MU2 value sets demonstrate 0% intersection with the patient data.

All three value set intersection graphs (Figure 4, Figure 5 and Figure 6) exhibit similar characteristics:

- EH value set intersection is consistently worse than EP, which is somewhat expected given the outpatient (ambulatory) nature of the source CCD's.
- A significant proportion of value sets have no intersection with the patient data, i.e. none of the codes in those value sets are present in the patient data. E.g. for the combined data, over 40% (227) of the EP value sets have no intersection with the patient data. Few value sets have greater than 50% intersection with the patient data

Combining the data from System A and System B does not dramatically improve value set intersection. E.g. over all measures, System A has 454 value sets with no intersection, System B has 462 and combined there are 417, an overall drop of 4% in the number of non-intersecting value sets. This indicates that System A and System B use largely the same set of codes. It would be interesting to add in data from additional systems to see how the number of non-intersecting value sets drops further.

Reasons for non-intersection of values sets vary. Investigation of the 227 non-intersecting EP value sets (see Figure 4) for the combined System A and System B data reveals the breakdown shown in Figure 7.

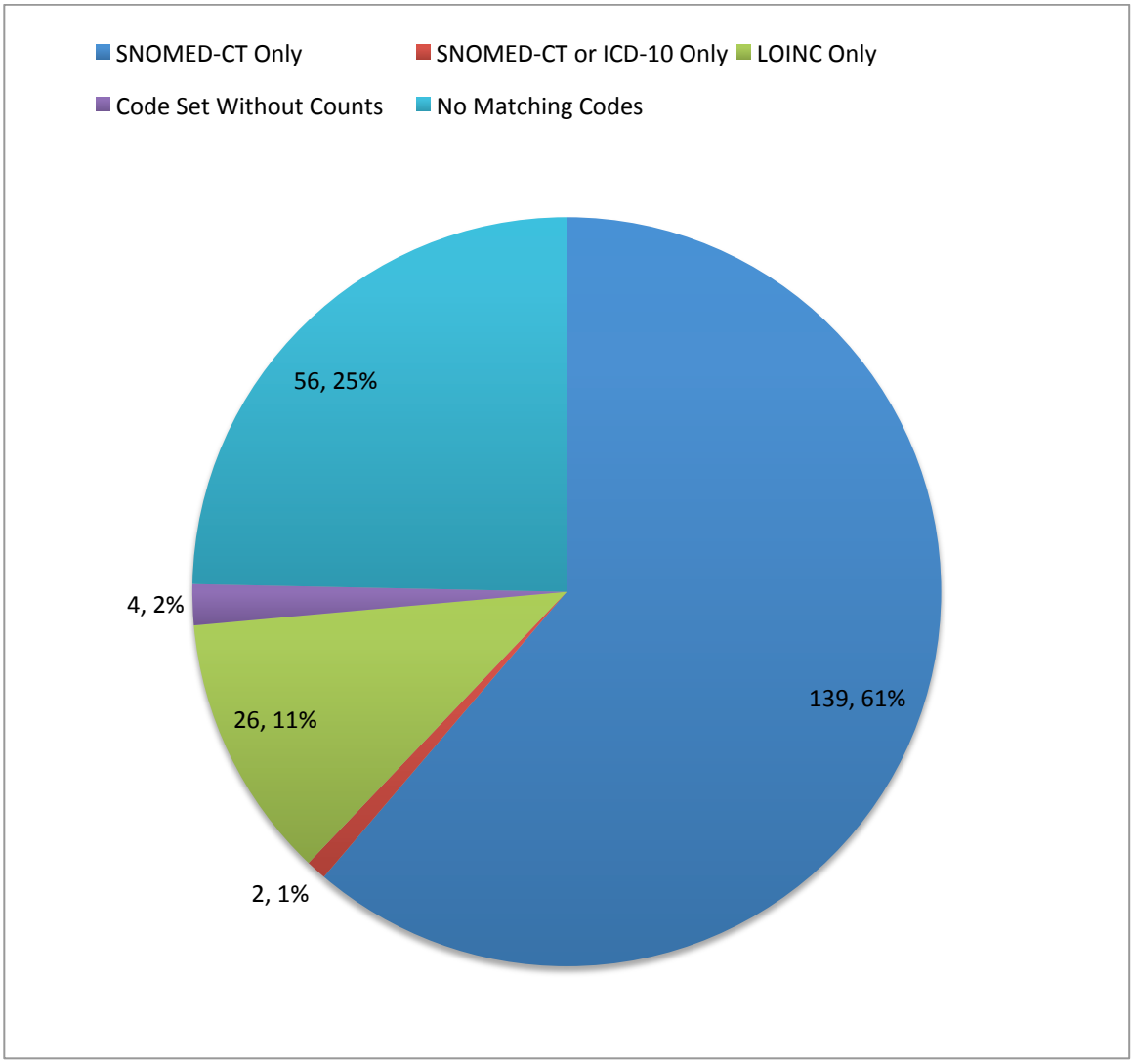


Figure 7: Reasons for non-intersecting EP value sets against combined System A and System B patient data

Referring back to Figure 2 and Figure 3, note the small numbers of SNOMED and LOINC codes found in the patient data, also note that neither System A nor System B use ICD-10; 73% of the non-intersecting value sets include only codes from these three code systems. The remaining 27% of non-intersecting value sets either

- Use a code set for which code counts were not extracted (2%)
- Use code sets that are reasonably well represented in the patient data but do not include codes from those code sets that were present in the patient data (25%)

Appendix A lists all non-intersecting value sets for the combined System A and System B patient data.

5 Measure Population Results

As described in section 2, measure populations define subsets of patients or events that match logical and temporal relationships between one or more data elements. Each data element uses a value set to define the specific set of clinical codes that define the intent of that data element. Assessing the full impact of non-intersecting value sets on measure populations is a complex problem due to the logical and temporal relationships between data elements. However it is easy to classify measure populations purely in relation to the data elements (and hence value sets) they refer to and that is the simpler approach adopted here.

Measure populations are classified according to the combined intersection of the value sets they refer to with patient data. For simplicity, measure populations are classified into two categories:

- Intersecting: at least one of the value sets referred to by the measure population has a non-zero-intersection with the patient data
- Non-intersecting: all of the value sets referred to by the measure population has zero intersection with the patient data

Note that this classification sets a low bar for inclusion in the intersecting category; a population classified as intersecting may still report a zero result when computing the measure due to logical and temporal constraints in the population. E.g. consider the following population definition:

```
"Encounter Performed, Nurse Visit"
AND
"Medication Active, Warfarin"
```

This population requires both an encounter and a medication but it would be classified as intersecting even if only the `"Nurse Visit"` value set has a non-zero intersection. No attempt was made to adjust or correlate relationships between elements required for identifying a population or for any other component of the CQM's. This analysis treats each value set as a separate and discrete instance with no relationships to other elements of the CQM's.

5.1 Combined System A and System B

Figure 8 shows the classification of all measure populations for the combined System A and System B patient data.

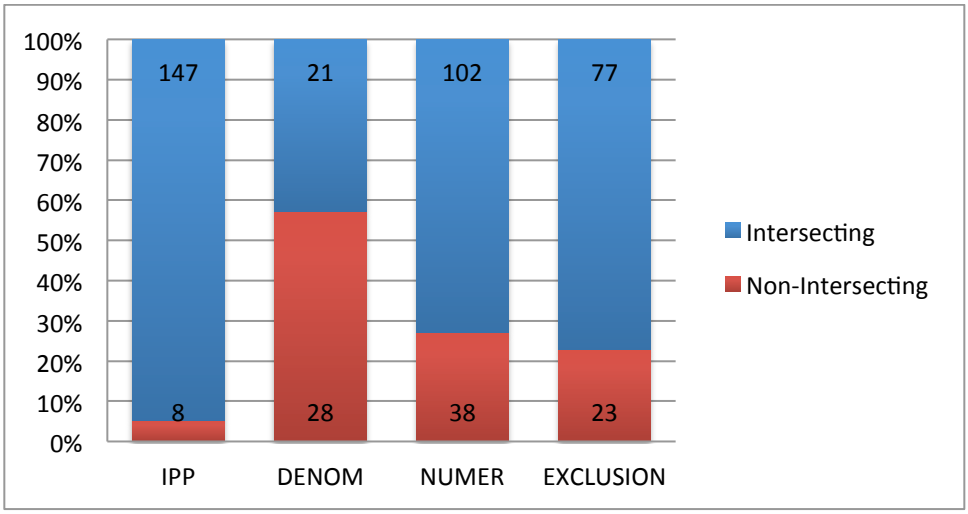


Figure 8: All measure population intersection for combined System A and System B patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

Note that the total numbers of IPP, DENOM etc. populations differ since measures can include one or more of each population. For the same reason, the total number of populations of a given type can exceed the number of CQMs. Empty populations are not included in the data. E.g. denominators that just refer to the initial patient population are excluded, this is common in the MU2 CQMs resulting in a relatively low number of denominators when compared to numerators. Additional initial patient populations are also often included for stratification purposes; hence the larger number of those compared to the other population types.

Given the low bar for inclusion in the intersecting category, it is surprising how many populations fall into the non-intersecting category, Appendix B contains the full list.

Figure 9 and Figure 10 show the measure population classification for EH and EP measures separately.

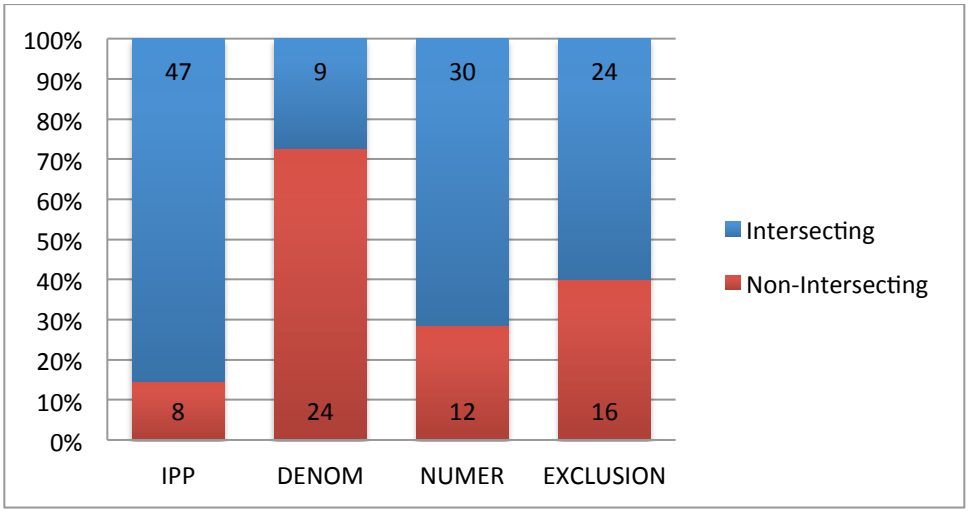


Figure 9: EH measure population intersection for combined System A and System B patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

Figure 9 shows that the majority of non-intersecting initial patient population (8/8) and denominators (24/28) are found in the EH measures.

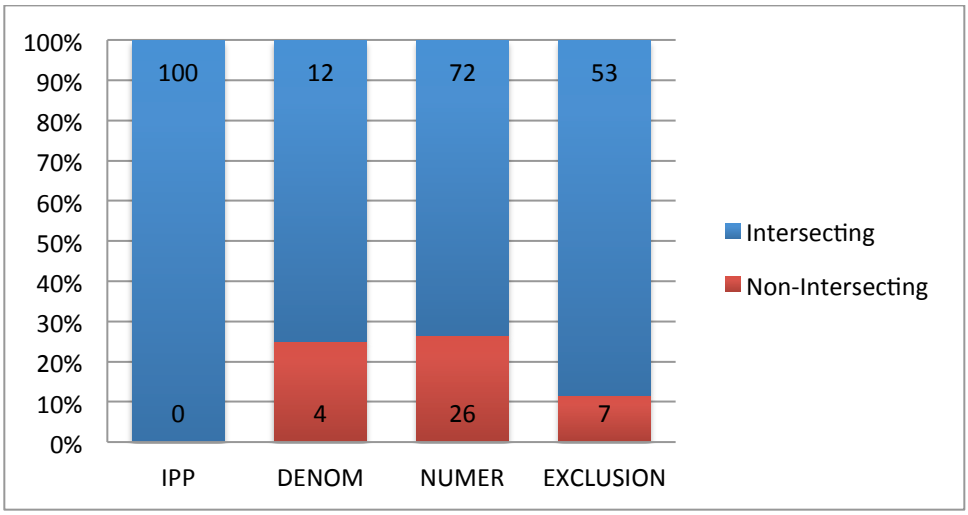


Figure 10: EP measure population intersection for combined System A and System B patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

Figure 10 shows that the majority of all non-intersecting numerators (26/38) are found in the EP measures.

For both EH and EP, none of the data required by greater than 25% of the numerators is present in the combined patient data from System A and System B. This means that more than 25% of the measures will report a 0 result for both EP and EH using this data set.

5.2 System A

Figure 11 shows the classification of all measure populations for the System A patient data.

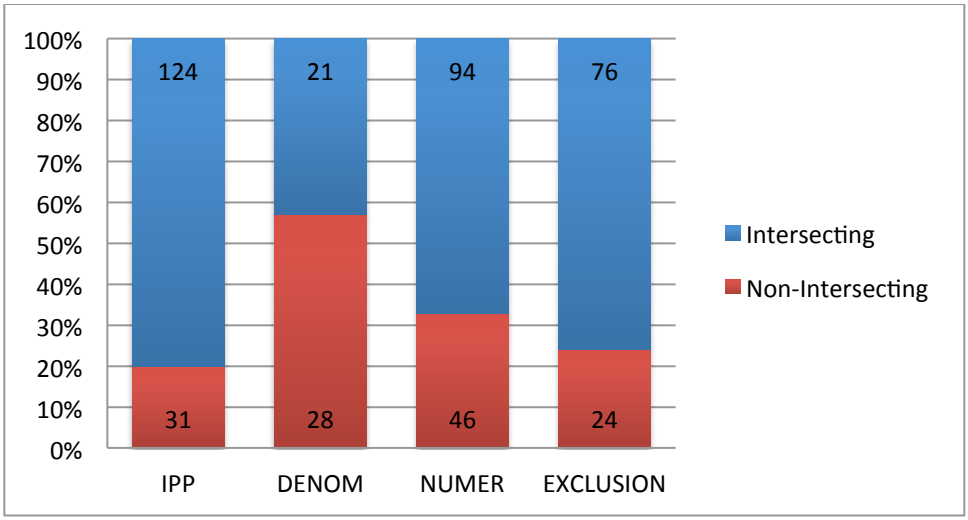


Figure 11: All measure population intersection for System A patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

As might be expected the number of non-intersecting populations increases overall when compared to the combined System A and System B patient data. However the overall distribution of non-intersecting measure populations remains roughly equivalent with greater than 50% of denominators and greater than 25% of numerators having no intersection.

Figure 12 and Figure 13 show the measure population classification for EH and EP measures separately.

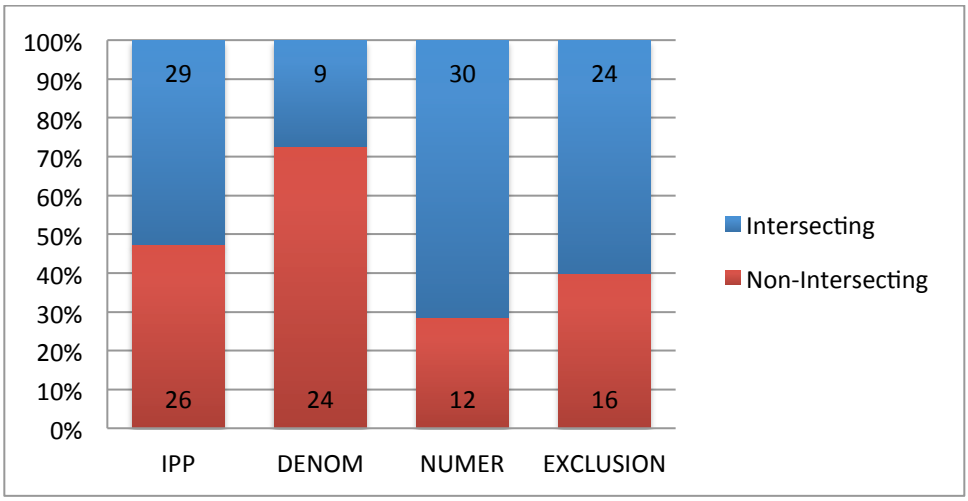


Figure 12: EH measure population intersection for System A patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

As was the case for the combined data, the majority of non-intersecting initial patient populations (26/31) and denominators (24/28) are found in the EH measures.

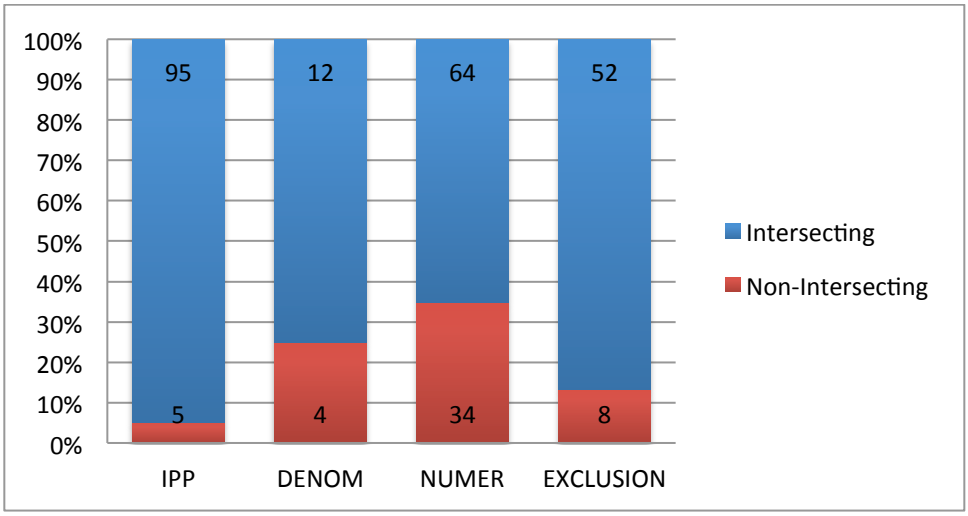


Figure 13: EP measure population intersection for System A patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

Figure 13 shows that the majority of the non-intersecting numerators (34/46) are found in the EP measures.

5.3 System B

Figure 14 shows the classification of all measure populations for the System B patient data.

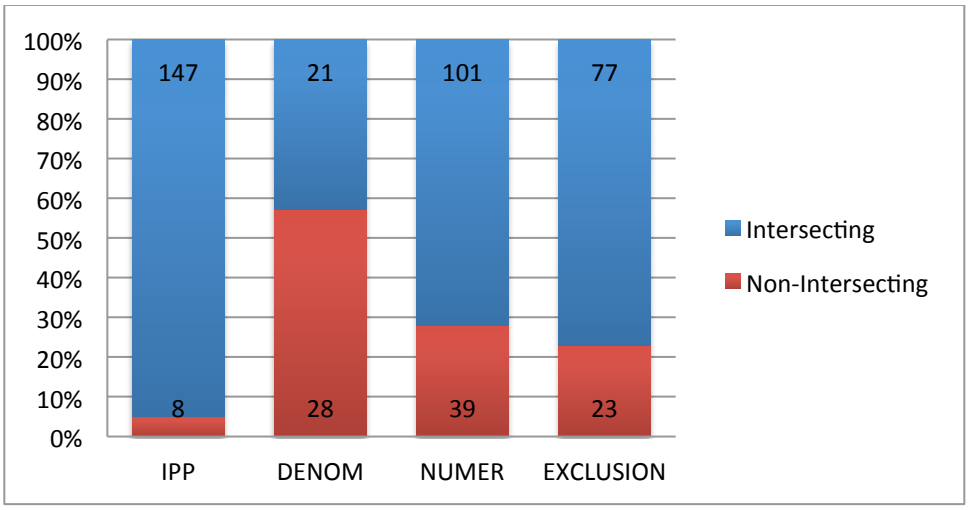


Figure 14: All measure population intersection for System B patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

As seen for the System A patient data, the number of non-intersecting populations increases overall when compared to the combined System A and System B patient data. However the overall distribution of non-intersecting measure populations remains roughly equivalent with greater than 50% of denominators and greater than 25% of numerators having no intersection.

Figure 15 and Figure 16 show the measure population classification for EH and EP measures separately.

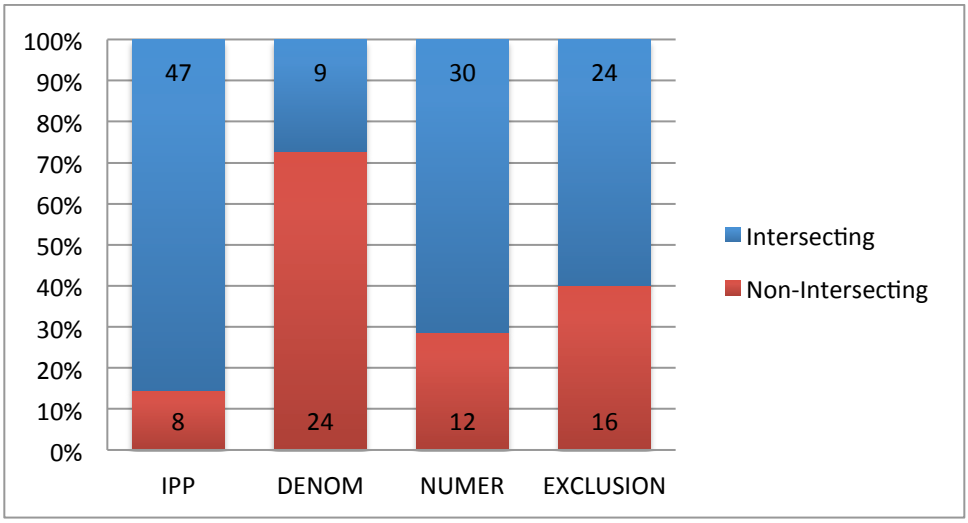


Figure 15: EH measure population intersection for System B patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

As was the case for the combined data, the majority of non-intersecting initial patient populations (8/8) and denominators (24/28) are found in the EH measures.

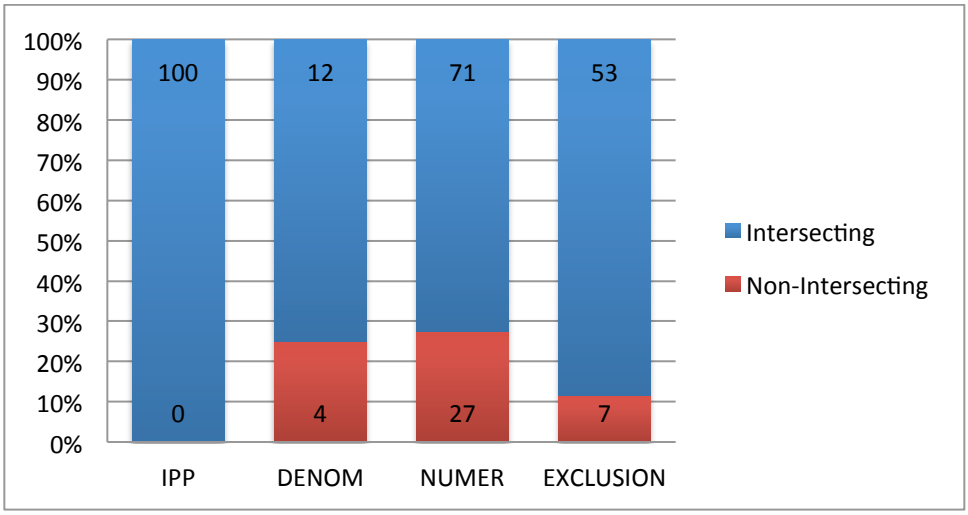


Figure 16: EP measure population intersection for System B patient data. Each bar represents the total number of populations of a particular type, the red colored portion of a bar indicates those populations that are non-intersecting.

As found for the combined data and System A data alone, the majority of the non-intersecting numerators (27/39) are found in the EP measures.

6 Conclusion

The majority of the codes used in value sets referred to by the MU2 CQMs are not found in patient data in System A or System B. There are two exceptions: ICD-9 (57% present in System A) and CVX (75% present in System B). Very few of the SNOMED (0.03%) and LOINC (2%) codes used in MU2 CQMs are found in the patient data.

In isolation, only finding a minority of the codes would not necessarily be a problem: value sets may contain many codes and, provided one of those codes is present in the patient data, the corresponding data element will be also be satisfied. Unfortunately the value set intersection results show that many value sets contain no codes actually present in the patient data: across all measures over half of the MU2 CQM value sets contain no codes found in either System A or System B. The primary reason for non-intersecting value sets is choice of code sets: 73% of the non-intersecting value sets include only some combination of SNOMED-CT, LOINC and ICD-10 codes, all of which are scarce in the patient data.

The non-intersecting value sets are not distributed evenly across all measure populations where their impact would be lessened. Instead there are many measure populations containing only non-intersecting value sets. Across all measures, nearly 60% of distinct denominators[1] and 27% of numerators reference only data that is not present in either System A or System B patient records. Such measures will, by definition, report 0/0 or 0/*n* results for the System A and System B patient data.

These results demonstrate that many of the current MU2 CQMs do not function well with existing EHR data. Their performance could be significantly improved by extending value sets to include code systems commonly used in EHR systems. Further research will be required to

[1] Distinct denominators are those that introduce additional constraints over and above the initial patient population.

determine the additional impact of the logical and temporal constraints between data elements that are present in the CQMs, the results presented here show the best-case based purely on data availability.

7 References

[1] Centers for Medicare and Medicaid Services. (2013, April 1). *2014 Clinical Quality Measures* [Online]. Available: http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/2014_ClinicalQualityMeasures.html

[2] National Quality Forum. (2013). *Quality Data Model* [Online]. Available: http://www.qualityforum.org/QualityDataModel.aspx

Appendix A Non-Intersecting Value Sets

Table 2: Non-intersecting value sets for combined System A and System B patient data

Value Set Identifier	Value Set Name
1.3.6.1.4.1.33895.1.3.0.45	Hospital Measures-Comfort Measures Only Intervention
2.16.840.1.113883.3.117.1.7.1.131	Asthma Management Plan
2.16.840.1.113883.3.117.1.7.1.132	Discharged to Rehabilitation Facility
2.16.840.1.113883.3.117.1.7.1.133	Parental Refusal
2.16.840.1.113883.3.117.1.7.1.134	Oral Factor Xa Inhibitor
2.16.840.1.113883.3.117.1.7.1.136	Perforation of Uterus
2.16.840.1.113883.3.117.1.7.1.137	Uterine Window
2.16.840.1.113883.3.117.1.7.1.138	Uterine Rupture
2.16.840.1.113883.3.117.1.7.1.139	Aspirin Allergen
2.16.840.1.113883.3.117.1.7.1.14	Principal
2.16.840.1.113883.3.117.1.7.1.18	Medical Reasons
2.16.840.1.113883.3.117.1.7.1.2	SCIP Major Surgical Procedure
2.16.840.1.113883.3.117.1.7.1.203	Atrial Ablation
2.16.840.1.113883.3.117.1.7.1.205	Direct Thrombin Inhibitor
2.16.840.1.113883.3.117.1.7.1.207	Discharged to Health Care Facility for Hospice Care
2.16.840.1.113883.3.117.1.7.1.209	Discharged to Home for Hospice Care
2.16.840.1.113883.3.117.1.7.1.214	Intermittent pneumatic compression devices (IPC)
2.16.840.1.113883.3.117.1.7.1.218	Unfractionated Heparin
2.16.840.1.113883.3.117.1.7.1.221	Rehabilitation Services
2.16.840.1.113883.3.117.1.7.1.222	Intravenous route
2.16.840.1.113883.3.117.1.7.1.223	Subcutaneous route
2.16.840.1.113883.3.117.1.7.1.226	Thrombolytic (t-PA) Therapy
2.16.840.1.113883.3.117.1.7.1.23	Inpatient Encounter
2.16.840.1.113883.3.117.1.7.1.230	Venous foot pumps (VFP)
2.16.840.1.113883.3.117.1.7.1.25	Single Live Birth
2.16.840.1.113883.3.117.1.7.1.253	Clinical Pathway Protocol
2.16.840.1.113883.3.117.1.7.1.254	General or Neuraxial Anesthesia
2.16.840.1.113883.3.117.1.7.1.255	General Surgery
2.16.840.1.113883.3.117.1.7.1.256	Graduated compression stockings (GCS)
2.16.840.1.113883.3.117.1.7.1.257	Gynecological Surgery
2.16.840.1.113883.3.117.1.7.1.258	Hip Fracture Surgery
2.16.840.1.113883.3.117.1.7.1.259	Hip Replacement Surgery
2.16.840.1.113883.3.117.1.7.1.260	Intracranial Neurosurgery
2.16.840.1.113883.3.117.1.7.1.261	Knee Replacement Surgery
2.16.840.1.113883.3.117.1.7.1.269	National Institute of Health Stroke Scale
2.16.840.1.113883.3.117.1.7.1.27	Dietary Intake Other than Breast Milk

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.117.1.7.1.272	Urological Surgery
2.16.840.1.113883.3.117.1.7.1.276	VTE Diagnostic Test
2.16.840.1.113883.3.117.1.7.1.277	VTE Suspected
2.16.840.1.113883.3.117.1.7.1.278	Treatment Adjusted by Protocol
2.16.840.1.113883.3.117.1.7.1.281	Active Labor
2.16.840.1.113883.3.117.1.7.1.282	Cesarean Section
2.16.840.1.113883.3.117.1.7.1.287	Gestational Age 37-38 weeks
2.16.840.1.113883.3.117.1.7.1.288	Medical Induction of Labor
2.16.840.1.113883.3.117.1.7.1.29	Liveborn Born In Hospital
2.16.840.1.113883.3.117.1.7.1.292	Emergency Department Visit
2.16.840.1.113883.3.117.1.7.1.293	Emergency Department Visit
2.16.840.1.113883.3.117.1.7.1.295	Decision to Admit to Hospital Inpatient
2.16.840.1.113883.3.117.1.7.1.30	Breast Milk
2.16.840.1.113883.3.117.1.7.1.300	Spontaneous Rupture of Membranes
2.16.840.1.113883.3.117.1.7.1.301	Medication Compliance Education
2.16.840.1.113883.3.117.1.7.1.302	Vitamin K Dietary Management
2.16.840.1.113883.3.117.1.7.1.303	Follow-up Monitoring
2.16.840.1.113883.3.117.1.7.1.304	Adverse Drug Reactions Education
2.16.840.1.113883.3.117.1.7.1.305	ICU Admission or Transfer
2.16.840.1.113883.3.117.1.7.1.307	Gestational Age Unknown
2.16.840.1.113883.3.117.1.7.1.308	Left Against Medical Advice
2.16.840.1.113883.3.117.1.7.1.309	Patient Expired
2.16.840.1.113883.3.117.1.7.1.357	VTE Risk Assessment
2.16.840.1.113883.3.117.1.7.1.377	Activation of Emergency Medical System Education
2.16.840.1.113883.3.117.1.7.1.378	Instructions for Follow Up After Discharge
2.16.840.1.113883.3.117.1.7.1.379	Prescribed Medications Education
2.16.840.1.113883.3.117.1.7.1.38	Parenteral Infusion
2.16.840.1.113883.3.117.1.7.1.380	Risk Factors Education
2.16.840.1.113883.3.117.1.7.1.381	Warning Signs and Symptoms Education
2.16.840.1.113883.3.117.1.7.1.399	Neurologic Symptoms of Stroke
2.16.840.1.113883.3.117.1.7.1.400	Low Risk
2.16.840.1.113883.3.117.1.7.1.401	Delivery Procedures
2.16.840.1.113883.3.117.1.7.1.402	Gestational Age <37 weeks
2.16.840.1.113883.3.117.1.7.1.403	Gestational Age >38 weeks
2.16.840.1.113883.3.117.1.7.1.407	VTE Confirmed
2.16.840.1.113883.3.117.1.7.1.412	Medical Contraindication
2.16.840.1.113883.3.117.1.7.1.413	Recommendation not to change diet
2.16.840.1.113883.3.117.1.7.1.414	Drug Interactions Education
2.16.840.1.113883.3.117.1.7.1.415	Written Information Given
2.16.840.1.113883.3.117.1.7.1.416	INR Monitoring Education
2.16.840.1.113883.3.117.1.7.1.417	Baseline State

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.117.1.7.1.421	Classical Cesarean Section
2.16.840.1.113883.3.117.1.7.1.422	Myomectomy
2.16.840.1.113883.3.117.1.7.1.423	Statin Allergen
2.16.840.1.113883.3.117.1.7.1.424	Non-Elective Inpatient Encounter
2.16.840.1.113883.3.117.1.7.1.473	Medical Reason
2.16.840.1.113883.3.117.1.7.1.70	Birth
2.16.840.1.113883.3.117.1.7.1.75	Neonatal Intensive Care Unit (NICU)
2.16.840.1.113883.3.117.1.7.1.82	Discharge To Home Or Police Custody
2.16.840.1.113883.3.117.1.7.1.84	Maternal Reason
2.16.840.1.113883.3.117.1.7.1.86	Patient Expired
2.16.840.1.113883.3.117.1.7.1.87	Discharge To Another Hospital
2.16.840.1.113883.3.117.1.7.1.93	Patient Refusal
2.16.840.1.113883.3.117.2.7.1.14	Principal Diagnosis
2.16.840.1.113883.3.526.2.1076	Palliative Care
2.16.840.1.113883.3.526.2.311	Patient Reason
2.16.840.1.113883.3.526.2.313	Medical Reason
2.16.840.1.113883.3.526.2.643	Clinical Trial Participant
2.16.840.1.113883.3.526.2.8001	Hospital Measures - Principal
2.16.840.1.113883.3.526.2.900	Hospital Measures-Encounter ED
2.16.840.1.113883.3.666.5.1058	Hospital Measures-Beta lactams for allergy determination
2.16.840.1.113883.3.666.5.1072	Hospital measures-Route oral
2.16.840.1.113883.3.666.5.1083	Hospital Measures-ICU Locations
2.16.840.1.113883.3.666.5.1084	Hospital Measures-Non-ICU Locations
2.16.840.1.113883.3.666.5.1086	Hospital measures-Pacemaker or implantable defibrillator device
2.16.840.1.113883.3.666.5.1106	Left Against Medical Advice
2.16.840.1.113883.3.666.5.1108	Hospital measures-Route IV
2.16.840.1.113883.3.666.5.1109	Hospital Measures-Route IV/IM
2.16.840.1.113883.3.666.5.1111	Hospital measures-Route IV, oral or IM
2.16.840.1.113883.3.666.5.1112	Hospital Measures-Route IV or PO
2.16.840.1.113883.3.666.5.1130	Hospital Measures-Urethra
2.16.840.1.113883.3.666.5.1145	Hospital Measures - Hold
2.16.840.1.113883.3.666.5.1151	Hospital Measures-Aortic balloon pump insertion
2.16.840.1.113883.3.666.5.1571	Hemolytic Disease Group
2.16.840.1.113883.3.666.5.1573	Hydrops Group
2.16.840.1.113883.3.666.5.1574	Drug Withdrawal Syndrome Group
2.16.840.1.113883.3.666.5.1582	Arterial or Umbilical Venous Cath Group
2.16.840.1.113883.3.666.5.1583	TPN Procedure Group
2.16.840.1.113883.3.666.5.1584	Gastrostomy Group
2.16.840.1.113883.3.666.5.1585	Gavage Feeding Group

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.666.5.1586	Cardiopulmonary Resuscitation Group
2.16.840.1.113883.3.666.5.1589	Respiratory Procedures Group
2.16.840.1.113883.3.666.5.1592	Neurologic Procedure Group
2.16.840.1.113883.3.666.5.1593	Hyperbilirubinemia Group
2.16.840.1.113883.3.666.5.1594	Phototherapy Procedure Group
2.16.840.1.113883.3.666.5.1618	Neonatal Death SM-CT
2.16.840.1.113883.3.666.5.1741	Hospital measures-Pacemaker or implantable defibrillator insertion procedure
2.16.840.1.113883.3.666.5.1743	Hospital measures-Joint Commission evidence of a surgical procedure requiring general or neuraxial anesthesia
2.16.840.1.113883.3.666.5.1816	Hospital measures-Knee arthroplasty
2.16.840.1.113883.3.666.5.1921	Hospital Measures-Caesarean Section
2.16.840.1.113883.3.666.5.2128	IV Positive Inotropic and Vasopressor Agents
2.16.840.1.113883.3.666.5.2129	Paralytic Agents
2.16.840.1.113883.3.666.5.2192	Hospital Measures-Wound Care
2.16.840.1.113883.3.666.5.2197	Hospital Measures-Prolonged QT Interval
2.16.840.1.113883.3.666.5.2202	Hospital Measures-Nursing Home or Ext Fac Transfer
2.16.840.1.113883.3.666.5.2203	Hospital Measures-IV Tigecycline
2.16.840.1.113883.3.666.5.2205	Hospital Measures-Francisella Tularensis or Yersinia pestis
2.16.840.1.113883.3.666.5.2254	Hospital measures - Request of physician
2.16.840.1.113883.3.666.5.2275	Hospital Measures-Cardiac Valve Surgery
2.16.840.1.113883.3.666.5.2278	Hospital Measures-MRSA Colonization or Infection
2.16.840.1.113883.3.666.5.2282	Hospital measures-Hemodialysis or peritoneal dialysis
2.16.840.1.113883.3.666.5.2289	Hospital measures-Acute care hospital encounter
2.16.840.1.113883.3.666.5.2310	Hospital Measures-SCIP Urological/Perineal procedures with potential need of indwelling catheters
2.16.840.1.113883.3.666.5.2313	Hospital Measures-SCIP urinary diversion procedures
2.16.840.1.113883.3.666.5.2348	Hospital Measures-Immunocompromised Therapies
2.16.840.1.113883.3.666.5.2365	Hospital Measures-Radiologic Finding-Normal SM-CT
2.16.840.1.113883.3.666.5.3001	Encounter Inpatient
2.16.840.1.113883.3.666.5.3002	Hospital Measures - Comfort Measure Only Intervention
2.16.840.1.113883.3.666.5.3003	Medical Reasons AMI
2.16.840.1.113883.3.666.5.3004	Patient Reasons AMI
2.16.840.1.113883.3.666.5.3005	System Reasons AMI
2.16.840.1.113883.3.666.5.3006	Hospital Measures-ED Locations
2.16.840.1.113883.3.666.5.3007	Hospital Measures - Inpatient Hospice Care
2.16.840.1.113883.3.666.5.3008	Hospital Measures - Home Hospice Care

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.666.5.3010	Hospital Measures - Principal
2.16.840.1.113883.3.666.5.3013	Hospital Measures-Acute care hospital
2.16.840.1.113883.3.666.5.3015	Hospital Measures-Ventricular Assist Device placement
2.16.840.1.113883.3.666.5.3018	Hospital Measures-ECG Impression
2.16.840.1.113883.3.666.5.307	Encounter Inpatient
2.16.840.1.113883.3.666.5.625	Hospital Measures-Encounter Inpatient
2.16.840.1.113883.3.666.5.647	Inpatient Hospice Care
2.16.840.1.113883.3.666.5.648	Home Hospice Care
2.16.840.1.113883.3.666.5.678	Hospital Measures-Chest xray SM-CT
2.16.840.1.113883.3.666.5.680	Hospital Measures-CT scan including chest
2.16.840.1.113883.3.666.5.684	Hospital Measures-Acute care hospital
2.16.840.1.113883.3.666.5.687	Hospital Measures-Ambulatory surgical center
2.16.840.1.113883.3.666.5.694	Hospital measures-CABG
2.16.840.1.113883.3.666.5.701	Hospital measures-Other Cardiac Surgery
2.16.840.1.113883.3.666.5.703	Hospital measures-Hip arthroplasty
2.16.840.1.113883.3.666.5.705	Hospital measures- Colon surgery
2.16.840.1.113883.3.666.5.710	Hospital measures-Abdominal hysterectomy
2.16.840.1.113883.3.666.5.712	Hospital measures-Vaginal hysterectomy
2.16.840.1.113883.3.666.5.713	Hospital measures-Vascular surgery
2.16.840.1.113883.3.666.5.719	Hospital Measures-Chronic Wound Care
2.16.840.1.113883.3.666.5.725	Hospital Measures-IV Ertapenem
2.16.840.1.113883.3.666.5.736	Hospital Measures-Fibrinolytic Therapy
2.16.840.1.113883.3.666.5.737	Hospital Measures-PCI
2.16.840.1.113883.3.666.5.747	Hospital Measures-Endotrachael intubation
2.16.840.1.113883.3.666.5.773	Hospital Measures-Bronchiectasis
2.16.840.1.113883.3.666.5.781	Hospital Measures-Tracheostomy care
2.16.840.1.113883.3.666.5.782	Hospital Measures-Ventilator care
2.16.840.1.113883.3.666.5.820	Hospital Measures-Indwelling urinary catheter
2.16.840.1.113883.3.666.5.822	Hospital Measures-SCIP urinary diversion
2.16.840.1.113883.3.666.5.825	Hospital Measures-Intermittent Catheterization
2.16.840.1.113883.3.666.5.827	Hospital Measures-Suprapubic catheter
2.16.840.1.113883.3.666.5.900	Hospital Measures - Encounter ED
2.16.840.1.113883.3.67.1.101.1.78	Patient Expired
2.16.840.1.113883.3.67.1.101.950	Hospital Measures-Hospital outpatient department
2.16.840.1.114222.4.1.214079.1.1.1	Livebirth
2.16.840.1.114222.4.1.214079.1.1.2	Hearing Examination
2.16.840.1.114222.4.1.214079.1.1.3	Newborn Hearing Screen Left
2.16.840.1.114222.4.1.214079.1.1.4	Newborn Hearing Screen Right
2.16.840.1.114222.4.1.214079.1.1.6	Pass Or Refer
2.16.840.1.114222.4.1.214079.1.1.7	Medical Reasons

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.1257.1.1616	BH Counseling for depression
2.16.840.1.113883.3.464.1003.101.12.1006	Discharge Services - Hospital Inpatient Same Day Discharge
2.16.840.1.113883.3.464.1003.101.12.1010	Emergency Department Visit
2.16.840.1.113883.3.464.1003.101.12.1039	Discharge Services- Observation Care
2.16.840.1.113883.3.464.1003.101.12.1046	Referral
2.16.840.1.113883.3.464.1003.101.12.1048	Face-to-Face Interaction
2.16.840.1.113883.3.464.1003.101.12.1059	Detoxification Visit
2.16.840.1.113883.3.464.1003.101.12.1060	Inpatient Encounter
2.16.840.1.113883.3.464.1003.102.12.1023	Persistent Asthma
2.16.840.1.113883.3.464.1003.103.12.1010	Gestational Diabetes
2.16.840.1.113883.3.464.1003.103.12.1013	Visual Exam of Foot
2.16.840.1.113883.3.464.1003.103.12.1014	Sensory Exam of Foot
2.16.840.1.113883.3.464.1003.103.12.1015	Pulse Exam of Foot
2.16.840.1.113883.3.464.1003.104.12.1002	Coronary Artery Bypass Graft
2.16.840.1.113883.3.464.1003.104.12.1015	Complete Lipid Panel
2.16.840.1.113883.3.464.1003.104.12.1018	Computed Value INR percent TTR
2.16.840.1.113883.3.464.1003.106.12.1005	Alcohol and Drug Dependence Treatment
2.16.840.1.113883.3.464.1003.108.12.1018	Mammogram
2.16.840.1.113883.3.464.1003.109.12.1002	Renal Transplant
2.16.840.1.113883.3.464.1003.109.12.1012	Kidney Transplant
2.16.840.1.113883.3.464.1003.109.12.1013	Dialysis Services
2.16.840.1.113883.3.464.1003.109.12.1	ESRD Monthly Outpatient Services

Value Set Identifier	Value Set Name
014	
2.16.840.1.113883.3.464.1003.109.12.1 015	Other Services Related to Dialysis
2.16.840.1.113883.3.464.1003.109.12.1 016	Dialysis Education
2.16.840.1.113883.3.464.1003.109.12.1 019	Macroalbumin Test
2.16.840.1.113883.3.464.1003.110.12.1 024	Hepatitis A
2.16.840.1.113883.3.464.1003.110.12.1 028	History of Pneumococcal Vaccine
2.16.840.1.113883.3.464.1003.110.12.1 032	Mumps
2.16.840.1.113883.3.464.1003.110.12.1 034	Pneumococcal Vaccine Administered
2.16.840.1.113883.3.464.1003.110.12.1 037	Rubella
2.16.840.1.113883.3.464.1003.110.12.1 039	Varicella Zoster
2.16.840.1.113883.3.464.1003.110.12.1 049	Genital Herpes
2.16.840.1.113883.3.464.1003.110.12.1 053	Measles
2.16.840.1.113883.3.464.1003.110.12.1 054	Seropositive
2.16.840.1.113883.3.464.1003.111.12.1 013	Maternal Post Partum Depression Care
2.16.840.1.113883.3.464.1003.111.12.1 014	Maternal Post Partum Depression Screening
2.16.840.1.113883.3.464.1003.112.12.1 001	Gonococcal Infections and Venereal Diseases
2.16.840.1.113883.3.464.1003.112.12.1 002	Syphilis
2.16.840.1.113883.3.464.1003.112.12.1 003	Chlamydia
2.16.840.1.113883.3.464.1003.113.12.1 033	X-Ray of Lower Spine
2.16.840.1.113883.3.464.1003.113.12.1 034	MRI of Lower Spine
2.16.840.1.113883.3.464.1003.113.12.1 035	CT Scan of Lower Spine
2.16.840.1.113883.3.464.1003.114.12.1	Encephalopathy

Value Set Identifier	Value Set Name
007	
2.16.840.1.113883.3.464.1003.115.12.1088	Retinal or Dilated Eye Exam
2.16.840.1.113883.3.464.1003.118.12.1009	Patient not ambulatory
2.16.840.1.113883.3.464.1003.118.12.1028	Falls Screening
2.16.840.1.113883.3.464.1003.118.12.1029	Functional Status Assessment for Hip Replacement
2.16.840.1.113883.3.464.1003.118.12.1030	Functional Status Assessment for Knee Replacement
2.16.840.1.113883.3.464.1003.118.12.1031	Functional Status Assessment for Heart Failure
2.16.840.1.113883.3.464.1003.118.12.1035	Counseling for Physical Activity
2.16.840.1.113883.3.464.1003.121.12.1006	Consultant Report
2.16.840.1.113883.3.464.1003.121.12.1012	BMI percentile
2.16.840.1.113883.3.464.1003.121.12.1013	Delta systolic blood pressure
2.16.840.1.113883.3.464.1003.121.12.1016	Positive Finding
2.16.840.1.113883.3.464.1003.122.12.1003	Ambulatory
2.16.840.1.113883.3.464.1003.125.12.1002	Fluoride Varnish Application for Children
2.16.840.1.113883.3.464.1003.125.12.1003	Clinical Oral Evaluation
2.16.840.1.113883.3.464.1003.195.12.1002	Negative Finding
2.16.840.1.113883.3.464.1003.196.12.1202	Dapsone and pyrimethamine
2.16.840.1.113883.3.464.1003.196.12.1222	Rotavirus Vaccine (2 dose schedule)
2.16.840.1.113883.3.464.1003.198.12.1005	Bilateral Mastectomy
2.16.840.1.113883.3.464.1003.198.12.1006	Primary THA Procedure
2.16.840.1.113883.3.464.1003.198.12.1007	Primary TKA Procedure
2.16.840.1.113883.3.464.1003.198.12.1	Total Colectomy

Value Set Identifier	Value Set Name
019	
2.16.840.1.113883.3.464.1003.198.12.1020	Unilateral Mastectomy
2.16.840.1.113883.3.464.1003.198.12.1030	Rubella Antigen Test
2.16.840.1.113883.3.464.1003.198.12.1031	Hepatitis B Antigen Test
2.16.840.1.113883.3.464.1003.198.12.1034	X-Ray Study (all inclusive)
2.16.840.1.113883.3.464.1003.199.12.1021	Anaphylactic Reaction to Rotavirus Vaccine
2.16.840.1.113883.3.464.1003.199.12.1022	Anaphylactic Reaction to Influenza Vaccine
2.16.840.1.113883.3.464.1003.199.12.1023	Anaphylactic Reaction to Inactivated Polio Vaccine (IPV)
2.16.840.1.113883.3.464.1003.199.12.1024	Anaphylactic Reaction to Neomycin
2.16.840.1.113883.3.464.1003.199.12.1025	Anaphylactic Reaction to Polymyxin
2.16.840.1.113883.3.464.1003.199.12.1026	Anaphylactic Reaction to Hepatitis A Vaccine
2.16.840.1.113883.3.464.1003.199.12.1027	Anaphylactic Reaction to Pneumococcal Conjugate Vaccine
2.16.840.1.113883.3.464.1003.199.12.1028	Anaphylactic Reaction to Streptomycin
2.16.840.1.113883.3.464.1003.199.12.1029	Anaphylactic Reaction to Hepatitis B Vaccine
2.16.840.1.113883.3.464.1003.199.12.1030	Anaphylactic Reaction to Hemophilus Influenza B (HiB) Vaccine
2.16.840.1.113883.3.464.1003.199.12.1031	Anaphylactic Reaction to DTaP Vaccine
2.16.840.1.113883.3.464.1003.199.12.1032	Anaphylactic Reaction to Common Baker's Yeast
2.16.840.1.113883.3.526.3.1003	Proteinuria
2.16.840.1.113883.3.526.3.1006	Standardized Tools for Assessment of Cognition
2.16.840.1.113883.3.526.3.1007	Medical Reason
2.16.840.1.113883.3.526.3.1008	Patient Reason
2.16.840.1.113883.3.526.3.1009	System Reason
2.16.840.1.113883.3.526.3.1012	Patient Provider Interaction
2.16.840.1.113883.3.526.3.1016	Psych Visit - Individual Inpatient Psychotherapy
2.16.840.1.113883.3.526.3.1017	Psych Visit - Individual Inpatient Interactive Psychotherapy

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.526.3.1024	Palliative Care
2.16.840.1.113883.3.526.3.1025	Severe Dementia
2.16.840.1.113883.3.526.3.1026	Radiation Treatment Management
2.16.840.1.113883.3.526.3.1028	Standardized Pain Assessment Tool
2.16.840.1.113883.3.526.3.1083	Hemodialysis
2.16.840.1.113883.3.526.3.1084	Peritoneal Dialysis
2.16.840.1.113883.3.526.3.1090	Moderate or Severe LVSD
2.16.840.1.113883.3.526.3.1091	Left ventricular systolic dysfunction
2.16.840.1.113883.3.526.3.1092	moderate or severe
2.16.840.1.113883.3.526.3.1098	Clinical Staging Procedure
2.16.840.1.113883.3.526.3.1125	Clinical Trial Participant
2.16.840.1.113883.3.526.3.1134	Ejection Fraction
2.16.840.1.113883.3.526.3.1140	Patient reason for ACE inhibitor or ARB decline
2.16.840.1.113883.3.526.3.1141	Psychoanalysis
2.16.840.1.113883.3.526.3.1151	Renal Failure Due to ACE Inhibitor
2.16.840.1.113883.3.526.3.1164	Breast Cancer Primary Tumor Size T1a
2.16.840.1.113883.3.526.3.1177	Allergy to Beta Blocker Therapy
2.16.840.1.113883.3.526.3.1178	Intolerance to Beta Blocker Therapy
2.16.840.1.113883.3.526.3.1185	Previous Receipt of Influenza Vaccine
2.16.840.1.113883.3.526.3.1193	Cardiac Pacer
2.16.840.1.113883.3.526.3.1197	Breast Cancer Primary Tumor Size T1mi
2.16.840.1.113883.3.526.3.1211	Allergy to ACE inhibitor or ARB
2.16.840.1.113883.3.526.3.1212	Intolerance to ACE inhibitor or ARB
2.16.840.1.113883.3.526.3.1240	Annual Wellness Visit
2.16.840.1.113883.3.526.3.1251	Macular Exam
2.16.840.1.113883.3.526.3.1253	Allergy to eggs
2.16.840.1.113883.3.526.3.1255	Influenza Vaccination Declined
2.16.840.1.113883.3.526.3.1256	Allergy to Influenza Vaccine
2.16.840.1.113883.3.526.3.1257	Intolerance to Influenza Vaccine
2.16.840.1.113883.3.526.3.1259	Limited Life Expectancy
2.16.840.1.113883.3.526.3.1270	Breast Cancer Primary Tumor Size T1b
2.16.840.1.113883.3.526.3.1278	Tobacco Use Screening
2.16.840.1.113883.3.526.3.1279	ECOG Performance Status-Poor
2.16.840.1.113883.3.526.3.1280	Allergy to Antineoplastic Therapy
2.16.840.1.113883.3.526.3.1283	Level of Severity of Retinopathy Findings
2.16.840.1.113883.3.526.3.1284	Macular Edema Findings Absent
2.16.840.1.113883.3.526.3.1286	Macular Edema Findings Absent
2.16.840.1.113883.3.526.3.1287	Intolerance to Antineoplastic Therapy
2.16.840.1.113883.3.526.3.1288	Chemotherapy for Colon Cancer - capecitabine
2.16.840.1.113883.3.526.3.1292	Colon Cancer Primary Tumor Size T1
2.16.840.1.113883.3.526.3.1293	Colon Cancer Primary Tumor Size T2

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.526.3.1294	Colon Cancer Primary Tumor Size T3
2.16.840.1.113883.3.526.3.1295	Colon Cancer Primary Tumor Size T4a
2.16.840.1.113883.3.526.3.1296	Colon Cancer Primary Tumor Size T4b
2.16.840.1.113883.3.526.3.1297	Colon Cancer Regional Lymph Node Status N1
2.16.840.1.113883.3.526.3.1298	Colon Cancer Regional Lymph Node Status N1c
2.16.840.1.113883.3.526.3.1299	Colon Cancer Regional Lymph Node Status N2
2.16.840.1.113883.3.526.3.1300	Colon Cancer Regional Lymph Node Status N2a
2.16.840.1.113883.3.526.3.1301	Colon Cancer Regional Lymph Node Status N2b
2.16.840.1.113883.3.526.3.1302	Breast Distant Metastasis Status M0
2.16.840.1.113883.3.526.3.1303	Breast Cancer ER or PR Positive
2.16.840.1.113883.3.526.3.1304	Breast Cancer Primary Tumor Size T0
2.16.840.1.113883.3.526.3.1305	Breast Cancer Primary Tumor Size T1
2.16.840.1.113883.3.526.3.1306	Breast Cancer Primary Tumor Size T1c
2.16.840.1.113883.3.526.3.1307	Breast Cancer Primary Tumor Size T2
2.16.840.1.113883.3.526.3.1308	Breast Cancer Primary Tumor Size T3
2.16.840.1.113883.3.526.3.1309	Breast Cancer Primary Tumor Size T4
2.16.840.1.113883.3.526.3.1310	Breast Cancer Regional Lymph Node Status N0
2.16.840.1.113883.3.526.3.1311	Breast Cancer Regional Lymph Node Status pN1a
2.16.840.1.113883.3.526.3.1312	Breast Cancer Regional Lymph Node Status pN1mi
2.16.840.1.113883.3.526.3.1313	Breast Cancer Regional Lymph Node Status N2
2.16.840.1.113883.3.526.3.1314	Breast Cancer Regional Lymph Node Status N3
2.16.840.1.113883.3.526.3.1317	Allergy to Tamoxifen or Aromatase Inhibitor Therapy
2.16.840.1.113883.3.526.3.1318	Intolerance to Tamoxifen or Aromatase Inhibitor Therapy
2.16.840.1.113883.3.526.3.1320	Macular Edema Findings Present
2.16.840.1.113883.3.526.3.1323	Macular Edema Findings Present
2.16.840.1.113883.3.526.3.1324	Level of Severity of Retinopathy Findings
2.16.840.1.113883.3.526.3.1325	Prostate Cancer Primary Tumor Size T1c
2.16.840.1.113883.3.526.3.1326	Prostate Cancer Primary Tumor Size T2a
2.16.840.1.113883.3.526.3.1327	Colon Cancer Regional Lymph Node Status N1a
2.16.840.1.113883.3.526.3.1328	Colon Cancer Regional Lymph Node Status N1b
2.16.840.1.113883.3.526.3.1329	Breast Cancer Regional Lymph Node Status N1
2.16.840.1.113883.3.526.3.1330	Breast Cancer Regional Lymph Node Status pN1b
2.16.840.1.113883.3.526.3.1331	Breast Cancer Regional Lymph Node Status pN1c
2.16.840.1.113883.3.526.3.1332	Cognitive Assessment
2.16.840.1.113883.3.526.3.1333	Cup to Disc Ratio
2.16.840.1.113883.3.526.3.1334	Optic Disc Exam for Structural Abnormalities
2.16.840.1.113883.3.526.3.1337	Colon Distant Metastasis Status M0
2.16.840.1.113883.3.526.3.1339	Radiation Therapy II
2.16.840.1.113883.3.526.3.1408	Aspiration and Injection Procedures
2.16.840.1.113883.3.526.3.1411	Cataract Surgery

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.526.3.1412	Cataract, Congenital
2.16.840.1.113883.3.526.3.1419	Corneal Opacity and other Disorders of Cornea
2.16.840.1.113883.3.526.3.1420	Cysts of Iris, Ciliary Body, and Anterior Chamber
2.16.840.1.113883.3.526.3.1422	Excision of Adhesions
2.16.840.1.113883.3.526.3.1425	High Hyperopia
2.16.840.1.113883.3.526.3.1429	Lens Procedure
2.16.840.1.113883.3.526.3.1431	Paracentesis Procedures
2.16.840.1.113883.3.526.3.1433	Posterior Lenticonus
2.16.840.1.113883.3.526.3.1434	Prior Pars Plana Vitrectomy
2.16.840.1.113883.3.526.3.1436	Removal Procedures
2.16.840.1.113883.3.526.3.1440	Scleral Procedures
2.16.840.1.113883.3.526.3.1452	Choroidal Hemorrhage and Rupture
2.16.840.1.113883.3.526.3.1462	Hereditary Choroidal Dystrophies
2.16.840.1.113883.3.526.3.1470	Other Corneal Deformities
2.16.840.1.113883.3.526.3.1483	Visual acuity 20/40 or Better
2.16.840.1.113883.3.526.3.1484	Suicide Risk Assessment
2.16.840.1.113883.3.526.3.1494	Reason Documented
2.16.840.1.113883.3.526.3.320	Bone Scan
2.16.840.1.113883.3.526.3.397	Gleason Score
2.16.840.1.113883.3.526.3.471	Bilateral Oophorectomy
2.16.840.1.113883.3.560.100.1	Male
2.16.840.1.113883.3.560.100.2	Female
2.16.840.1.113883.3.600.1.1498	Above Normal Medications
2.16.840.1.113883.3.600.1.1502	Medical or Other reason not done
2.16.840.1.113883.3.600.1.1503	Patient Reason Refused
2.16.840.1.113883.3.600.1.1527	Above Normal Referrals
2.16.840.1.113883.3.600.1.1529	Below Normal Referrals
2.16.840.1.113883.3.600.1.2040	BMI LOINC calculation
2.16.840.1.113883.3.600.1.462	Current Medications Documented SNMD
2.16.840.1.113883.3.600.1474	Rescreen BP Within 1 Year
2.16.840.1.113883.3.600.1475	Referral to Alternative Provider / Primary Care Provider
2.16.840.1.113883.3.600.1483	Electrocardiogram (ECG)
2.16.840.1.113883.3.600.1508	Lifestyle Recommendation
2.16.840.1.113883.3.600.1510	Weight Reduction Recommended
2.16.840.1.113883.3.600.1521	Medical reason
2.16.840.1.113883.3.600.1537	Rescreen BP within 4 weeks
2.16.840.1.113883.3.600.1542	Additional evaluation for depression - adolescent
2.16.840.1.113883.3.600.1545	Additional evaluation for depression - adult
2.16.840.1.113883.3.600.1557	Family History CHD
2.16.840.1.113883.3.600.1561	Framingham coronary heart disease 10 year risk

Value Set Identifier	Value Set Name
2.16.840.1.113883.3.600.1564	Patient Request
2.16.840.1.113883.3.600.2012	Blood Pressure Measured
2.16.840.1.113883.3.600.467	Follow-up for depression - adolescent
2.16.840.1.113883.3.600.468	Follow-up for depression - adult
2.16.840.1.113883.3.600.537	Referral for Depression Adolescent
2.16.840.1.113883.3.600.538	Referral for Depression Adult
2.16.840.1.113883.3.600.559	Suicide Risk Assessment
2.16.840.1.113883.3.600.791	Patient Reason refused
2.16.840.1.113883.3.600.792	Medical reason contraindicated
2.16.840.1.113883.3.600.793	Positive Depression Screening
2.16.840.1.113883.3.600.794	Negative Depression Screening
2.16.840.1.113883.3.600.823	Moderation of ETOH Consumption Recommendation
2.16.840.1.113883.3.67.1.101.1.278	Delivery
2.16.840.1.113883.3.67.1.101.11.721	Deceased
2.16.840.1.113883.3.67.1.101.11.722	Nursing Home
2.16.840.1.113883.3.67.1.101.11.723	PHQ-9 Tool
2.16.840.1.113883.3.67.1.101.11.724	principal
2.16.840.1.113883.3.67.1.101.11.725	Residence

Appendix B Non-Intersecting Populations

Table 3: Non-intersecting measure populations for combined System A and System B patient data

Measure Name	Population	NQF ID	CMS ID	Type
Primary PCI Received Within 90 Minutes of Hospital Arrival	denominator	163	CMS53v2	eh
Primary PCI Received Within 90 Minutes of Hospital Arrival	exclusions	163	CMS53v2	eh
Primary PCI Received Within 90 Minutes of Hospital Arrival	numerator	163	CMS53v2	eh
Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival	denominator	164	CMS60v2	eh
Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival	exclusions	164	CMS60v2	eh
Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival	numerator	164	CMS60v2	eh
Home Management Plan of Care (HMPC) Document Given to Patient/Caregiver	denominator	338	CMS26v1	eh
Home Management Plan of Care (HMPC) Document Given to Patient/Caregiver	numerator	338	CMS26v1	eh
Intensive Care Unit Venous	denominator	372	CMS190v2	eh

Measure Name	Population	NQF ID	CMS ID	Type
Thromboembolism Prophylaxis				
Intensive Care Unit Venous Thromboembolism Prophylaxis	exclusions	372	CMS190v2	eh
Venous Thromboembolism Patients with Anticoagulation Overlap Therapy	exclusions	373	CMS73v2	eh
Venous Thromboembolism Patients Receiving Unfractionated Heparin with Dosages/Platelet Count Monitoring by Protocol or Nomogram	denominator	374	CMS109v2	eh
Venous Thromboembolism Patients Receiving Unfractionated Heparin with Dosages/Platelet Count Monitoring by Protocol or Nomogram	exclusions	374	CMS109v2	eh
Venous Thromboembolism Discharge Instructions	numerator	375	CMS110v2	eh
Incidence of Potentially-Preventable Venous Thromboembolism	denominator	376	CMS114v2	eh
Discharged on Antithrombotic Therapy	exclusions	435	CMS104v2	eh
Anticoagulation Therapy for Atrial Fibrillation/Flutter	exclusions	436	CMS71v3	eh
Thrombolytic Therapy	exclusions	437	CMS91v3	eh
Thrombolytic Therapy	numerator	437	CMS91v3	eh
Antithrombotic Therapy By End of Hospital Day 2	exclusions	438	CMS72v2	eh
Discharged on Statin Medication	exclusions	439	CMS105v2	eh
Stroke Education	denominator	440	CMS107v2	eh
Stroke Education	exclusions	440	CMS107v2	eh
Stroke Education	numerator	440	CMS107v2	eh
Assessed for Rehabilitation	exclusions	441	CMS102v2	eh
Assessed for Rehabilitation	numerator	441	CMS102v2	eh
Urinary catheter removed on Postoperative Day 1 (POD 1) or Postoperative Day 2 (POD 2) with day of surgery being day zero	denominator	453	CMS178v3	eh
Urinary catheter removed on Postoperative Day 1 (POD 1) or Postoperative Day 2 (POD 2) with day of surgery being day zero	numerator	453	CMS178v3	eh
Elective Delivery	numerator	469	CMS113v2	eh
Exclusive Breast Milk Feeding	exclusions	480	CMS9v2	eh
Exclusive Breast Milk Feeding	numerator	480	CMS9v2	eh
Exclusive Breast Milk Feeding	exclusions	480	CMS9v2	eh
Exclusive Breast Milk Feeding	numerator	480	CMS9v2	eh
Median Time from ED Arrival to ED	population	495	CMS55v2	eh

Measure Name	Population	NQF ID	CMS ID	Type
Departure for Admitted ED Patients				
Median Time from ED Arrival to ED Departure for Admitted ED Patients	population	495	CMS55v2	eh
Median Time from ED Arrival to ED Departure for Discharged ED Patients	population	496	CMS32v3	eh
Median Time from ED Arrival to ED Departure for Discharged ED Patients	population	496	CMS32v3	eh
Median Time from ED Arrival to ED Departure for Discharged ED Patients	population	496	CMS32v3	eh
Median Admit Decision Time to ED Departure Time for Admitted Patients	population	497	CMS111v2	eh
Median Admit Decision Time to ED Departure Time for Admitted Patients	population	497	CMS111v2	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision	denominator	527	CMS171v3	eh
Prophylactic Antibiotic Selection for Surgical Patients	denominator	528	CMS172v3	eh
Prophylactic Antibiotic Selection for Surgical Patients	denominator	528	CMS172v3	eh
Prophylactic Antibiotic Selection for Surgical Patients	denominator	528	CMS172v3	eh
Prophylactic Antibiotic Selection for Surgical Patients	denominator	528	CMS172v3	eh
Prophylactic Antibiotic Selection for Surgical Patients	denominator	528	CMS172v3	eh
Prophylactic Antibiotic Selection for Surgical Patients	denominator	528	CMS172v3	eh
Prophylactic Antibiotic Selection for Surgical	denominator	528	CMS172v3	eh

Measure Name	Population	NQF ID	CMS ID	Type
Patients				
Prophylactic Antibiotic Selection for Surgical Patients	denominator	528	CMS172v3	eh
Statin Prescribed at Discharge	exclusions	639	CMS30v3	eh
Hearing Screening Prior To Hospital Discharge (EHDI-1a)	all	1354	CMS31v2	eh
Hearing Screening Prior To Hospital Discharge (EHDI-1a)	exclusions	1354	CMS31v2	eh
Hearing Screening Prior To Hospital Discharge (EHDI-1a)	numerator	1354	CMS31v2	eh
Hearing Screening Prior To Hospital Discharge (EHDI-1a)	population	1354	CMS31v2	eh
Weight Assessment and Counseling for Nutrition and Physical Activity for Children and Adolescents	numerator	24	CMS155v1	ep
Weight Assessment and Counseling for Nutrition and Physical Activity for Children and Adolescents	numerator	24	CMS155v1	ep
Weight Assessment and Counseling for Nutrition and Physical Activity for Children and Adolescents	numerator	24	CMS155v1	ep
Breast Cancer Screening	exclusions	31	CMS125v1	ep
Breast Cancer Screening	numerator	31	CMS125v1	ep
Diabetes: Eye Exam	exclusions	55	CMS131v1	ep
Diabetes: Eye Exam	numerator	55	CMS131v1	ep
Diabetes: Foot Exam	exclusions	56	CMS123v1	ep
Diabetes: Foot Exam	numerator	56	CMS123v1	ep
Diabetes: Hemoglobin A1c Poor Control	exclusions	59	CMS122v1	ep
Hemoglobin A1c Test for Pediatric Patients	exclusions	60	CMS148v1	ep
Diabetes: Urine Protein Screening	exclusions	62	CMS134v1	ep
Diabetes: Low Density Lipoprotein (LDL) Management	exclusions	64	CMS163v1	ep
Coronary Artery Disease (CAD): Beta-Blocker Therapyâ€”Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)	denominator	70	CMS145v1	ep
Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	denominator	81	CMS135v1	ep
Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	denominator	83	CMS144v1	ep

Measure Name	Population	NQF ID	CMS ID	Type
Primary Open Angle Glaucoma (POAG): Optic Nerve Evaluation	numerator	86	CMS143v1	ep
Diabetic Retinopathy: Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy	numerator	88	CMS167v1	ep
Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care	denominator	89	CMS142v1	ep
Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care	numerator	89	CMS142v1	ep
Falls: Screening for Future Fall Risk	numerator	101	CMS139v1	ep
Major Depressive Disorder (MDD): Suicide Risk Assessment	numerator	104	CMS161v1	ep
Oncology: Medical and Radiation â€“ Pain Intensity Quantified	numerator	384	CMS157v1	ep
Cataracts: 20/40 or Better Visual Acuity within 90 Days Following Cataract Surgery	numerator	565	CMS133v1	ep
Depression Remission at Twelve Months	numerator	710	CMS159v1	ep
Depression Utilization of the PHQ-9 Tool	numerator	712	CMS160v1	ep
Depression Utilization of the PHQ-9 Tool	numerator	712	CMS160v1	ep
Depression Utilization of the PHQ-9 Tool	numerator	712	CMS160v1	ep
Child and Adolescent Major Depressive Disorder (MDD): Suicide Risk Assessment	numerator	1365	CMS177v1	ep
Closing the referral loop: receipt of specialist report	numerator	ClosingReferralLoop	CMS50v1	ep
Dementia: Cognitive Assessment	numerator	DementiaCognitive	CMS149v1	ep
Functional Status Assessment for Hip Replacement	numerator	FSAHip	CMS56v1	ep
Functional Status Assessment for Knee Replacement	numerator	FSAKnee	CMS66v1	ep
Primary Caries Prevention Intervention as Offered by Primary Care Providers, including Dentists	numerator	PrimaryCariesPrevention	CMS74v2	ep
Primary Caries Prevention Intervention as Offered by Primary Care Providers, including Dentists	numerator	PrimaryCariesPrevention	CMS74v2	ep
Primary Caries Prevention Intervention as Offered by Primary Care Providers,	numerator	PrimaryCariesPr	CMS74v2	ep

Measure Name	Population	NQF ID	CMS ID	Type
including Dentists		evention		
Primary Caries Prevention Intervention as Offered by Primary Care Providers, including Dentists	numerator	Primary CariesPr evention	CMS74v2	ep

Appendix C Abbreviations

MU2	Meaningful Use Stage 2.
CQM	Clinical Quality Measure.
CCD	Continuity of Care Document, an HL7 V3 XML document format for transferring patient data in transitions of care.
HL7	Health Level 7, a standards body involved in the definition of health-related information standards.
NQF	National Quality Forum.
QDM	Quality Data Model – an information model for clinical quality data developed by NQF.
SNOMED-CT	Systematized Nomenclature Of Medicine Clinical Terms – a clinical vocabulary used in MU2 CQMs.
LOINC	Logical Observation Identifiers Names and Codes – a clinical vocabulary used in MU2 CQMs.
CPT	Current Procedural Terminology – a clinical vocabulary used in MU2 CQMs.
CVX	Vaccination codes – a clinical vocabulary used in MU2 CQMs.
ICD-9	International Classification of Diseases, version 9 – a clinical vocabulary used in MU2 CQMs.
ICD-10	International Classification of Diseases, version 10 – a clinical vocabulary used in MU2 CQMs.
RxNorm	Medication codes – a clinical vocabulary used in MU2 CQMs.

HCPCS	Healthcare Common Procedure Coding System – a clinical vocabulary used in MU2 CQMs.
EHR	Electronic Health Record.
EH	Meaningful Use Eligible Hospital
EP	Meaningful Use Eligible Provider
IPP	Initial patient population – a CQM population identifier
DENOM	Denominator – a CQM population identifier
NUMER	Numerator – a CQM population identifier