2021: Implementing the Hybrid Hospital-Wide Readmission Measure (HHWR)

February 24, 2021

Agenda

1. Provide an overview of the Hybrid HWR measure requirements for the CMS IQR program
2. Explain what a hybrid measure is and how it's calculated
3. Review the steps to implement the hybrid measure
4. Q&A

Kristen Beatson
VP of Electronic Measures

medisolv

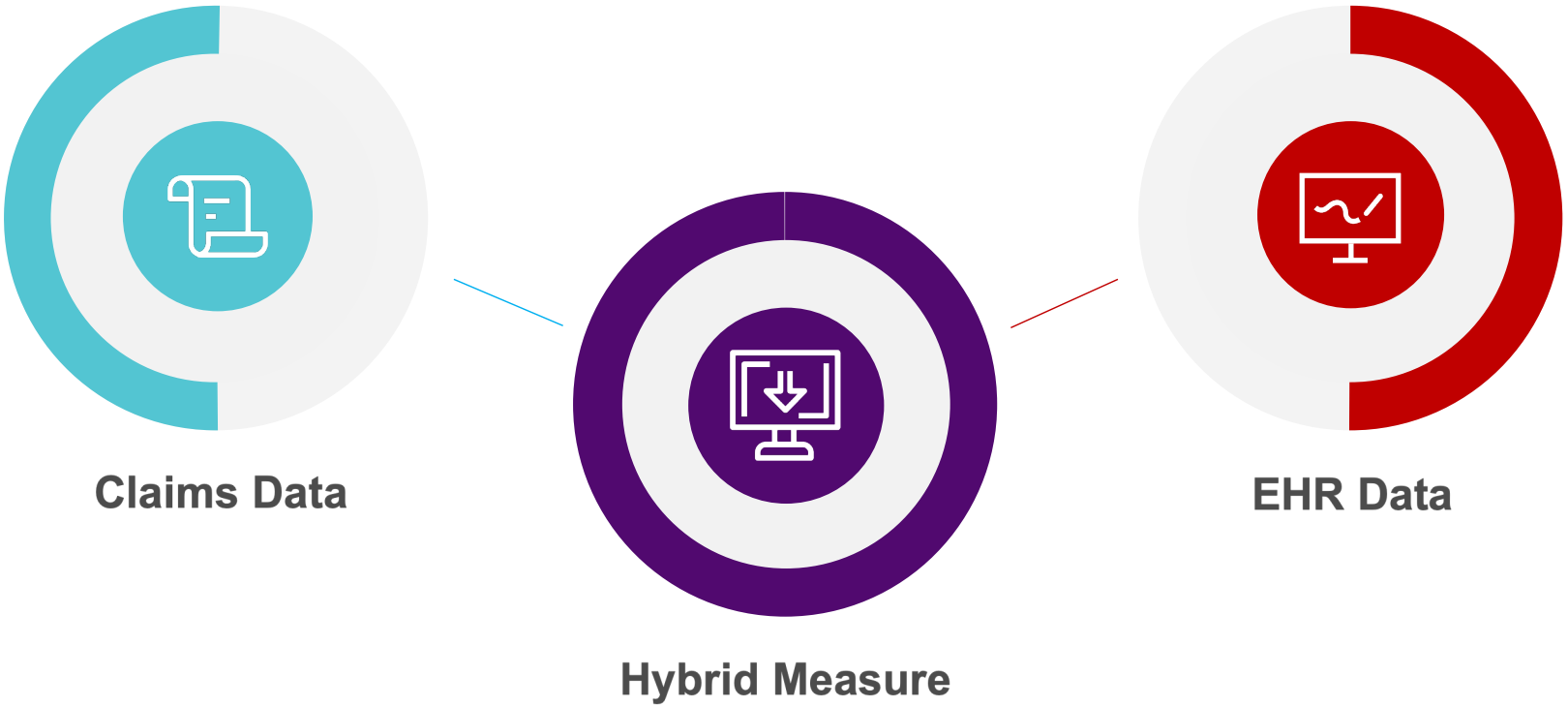
HHWR Measure Reporting Requirements

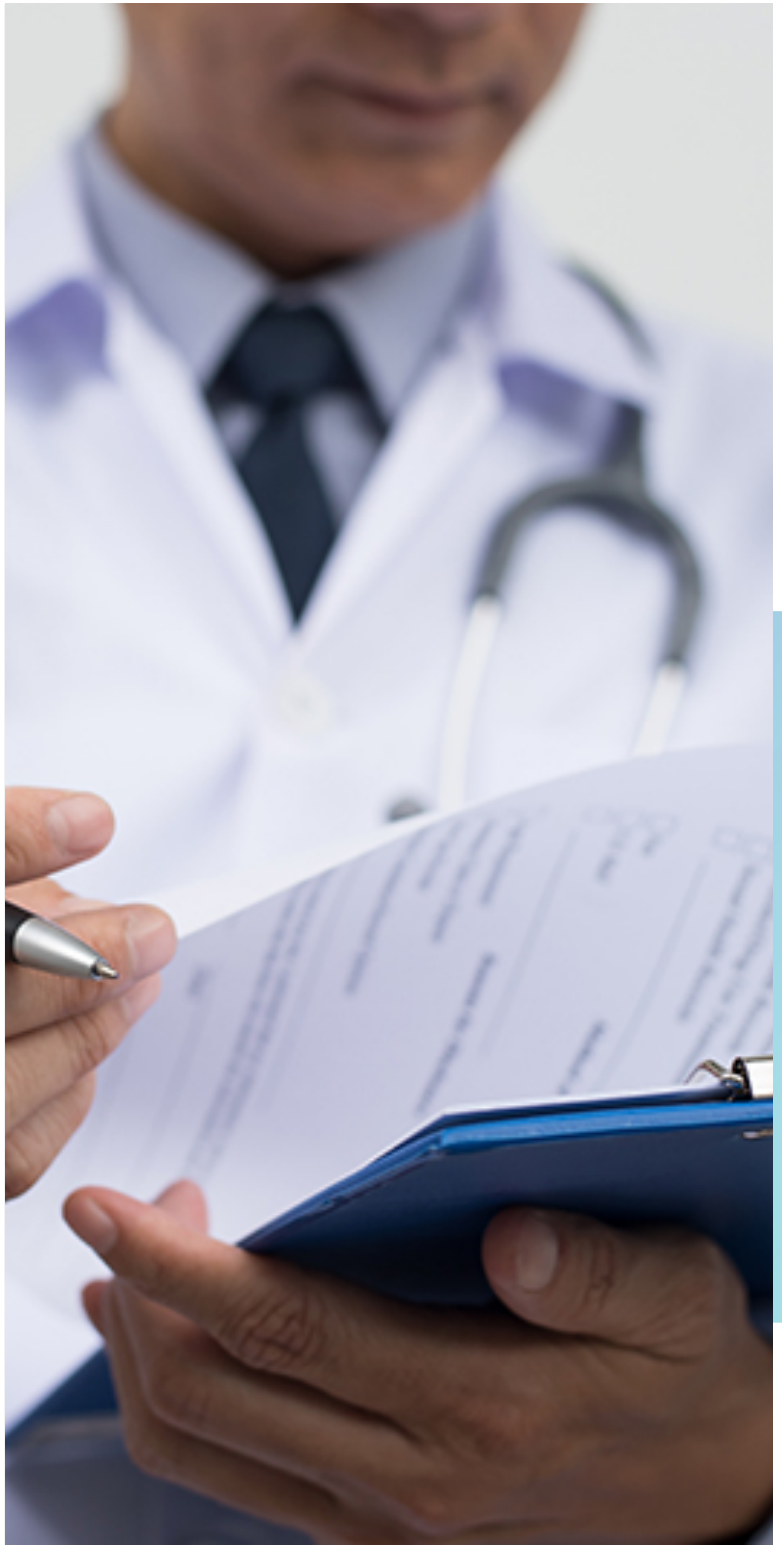
Program	Reporting Requirement	Performance Year	Payment Year Public Reporting
Inpatient Quality Reporting (IQR) Program (2021 IPPS Final Rule)	Voluntary	Jan 1, 2018 – June 30, 2018*	N/A
	Voluntary	July 1, 2021 – June 30, 2022	N/A
	Voluntary	July 1, 2022 – June 30, 2023	N/A
	Mandatory	July 1, 2023 – June 30, 2024**	FY 2026 (10/1/2025) Payments
			July 2025 Hospital Compare "Refresh"

CMS Received EHR data from 150 Hospitals for the CY 2018 Reporting.* ***Medisolv successfully submitted for 69 of those hospitals.*

***CMS is removing the Claims-based HWR Measure with the July 1, 2023-June 30, 2024 Mandatory Reporting for FY 2026 Payment Year.*

What is a Hybrid Measure?





Claims Data

Submitted for a specific patient encounter

Includes:

- Demographics
- Diagnosis Codes
- Procedure Codes
- Provider / Facility
- Admission Information –
  dates of service, discharge status
- Billed and Paid amounts

EHR Data

Defined by the Hospital Core Clinical Data Elements (CCDE) specification.

Note:

- This is not a measure. The logic is in the same format as Electronic Clinical Quality Measures but in this case, is only intended to guide the extraction of electronic clinical data (CCDE) to be submitted via QRDA.
- CCDE's will be linked with administrative claims data to risk-adjust measures.

Why do we need Hybrid Measures?

Accuracy

The best-performing risk adjustment models assess both comorbidities and severity. Claims-based models assess the burden of comorbid conditions, **but clinical data can provide a measure of the severity of the illness** for which a patient is admitted.

Preference

Clinicians prefer the use of clinical data to assess hospital performance.

Data Collection

The transition to Electronic Health Records creates an opportunity to integrate clinical information into hospital quality measurement without manual chart abstraction.

Specification Overview: CMS 529

Hybrid Hospital-Wide 30-Day Readmission Measure

Population

- Ages 65 or older
- Medicare
- Discharged from Non-Federal Acute Care Facilities to Non-Acute Care Settings
- Key Exclusions: Planned Readmissions, Psychiatric Diagnosis and Cancer Treatment

Core Clinical Data Elements

1

Reflect clinical status when the patient first presents to an acute care hospital for treatment.

2

Routinely and consistently captured in your EHR.

3

Can be extracted electronically from your EHR.

Core Clinical Data Elements (CCDE)

MUST SUBMIT

13 CCDE

(Vital Signs & Lab Results)

Vital Signs

- Heart rate
- Systolic blood pressure
- Respiratory rate
- Temperature
- Oxygen saturation
- Weight

Lab Test Results

- Hematocrit
- White blood cell count
- Potassium
- Sodium
- Bicarbonate
- Creatinine
- Glucose

Core Clinical Data Elements (CCDE)

MUST SUBMIT

6 Linking Variables

1. CMS certification number
2. Health Insurance Claim Number or Medicare Beneficiary Identifier
3. Date of birth
4. Sex
5. Admission date
6. Discharge date

EHR Data (CCDEs): Specification

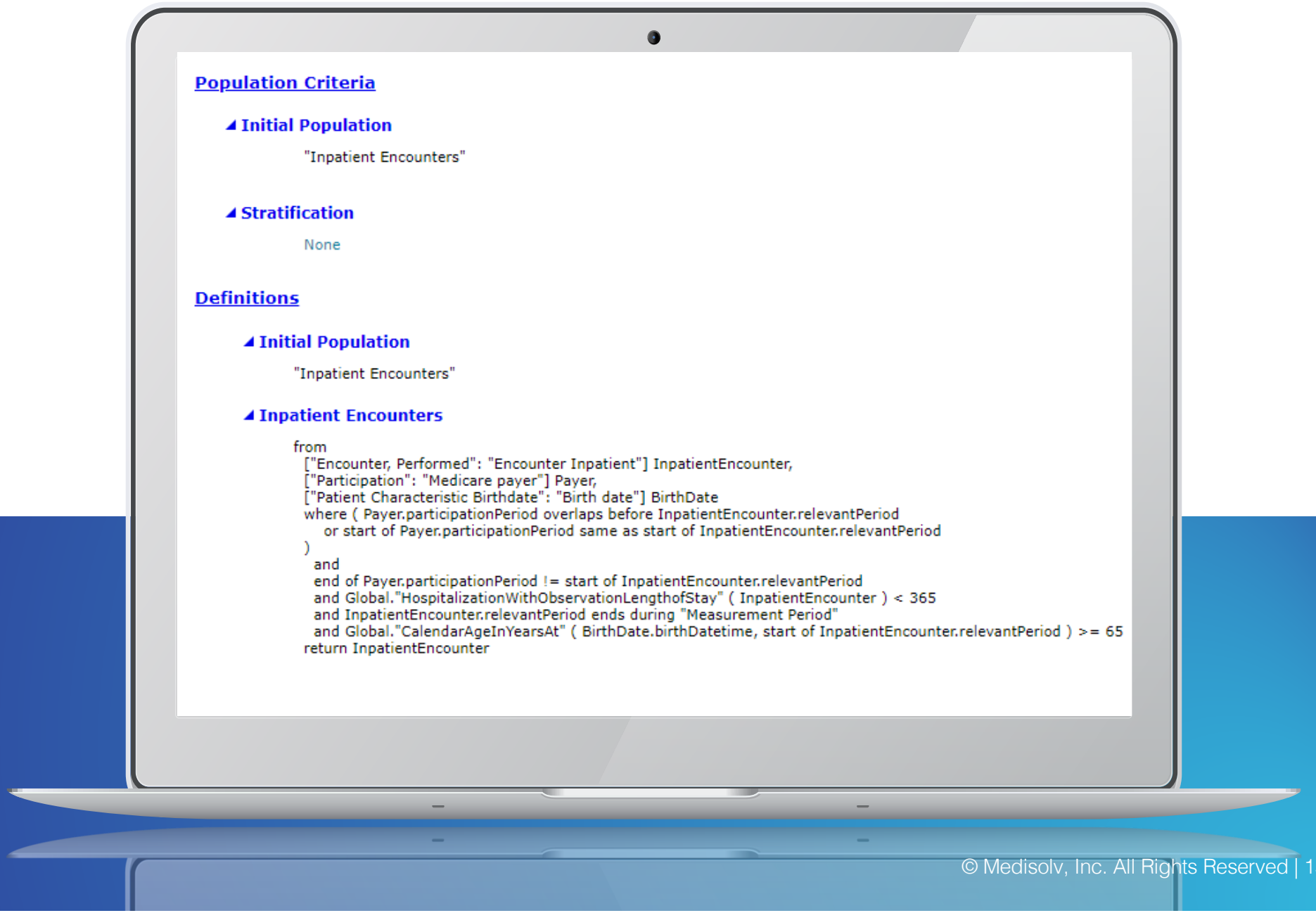
Same structure as current Electronic Clinical Quality Measures (eCQMs)

- Description
- Logic
- Populations
- Data elements
- OIDs / Value Sets / Codes → Value Set Authority Center (VSAC)

Populations/Logic

eCQM Title	**Core Clinical Data Elements for the Hybrid Hospital-Wide Readmission (HWR) Measure with Claims and Electronic Health Record Data**		
eCQM Identifier (Measure Authoring Tool)	529	**eCQM Version Number**	1.3.000
NQF Number	2879e	**GUID**	fa75de85-a934-45d7-a2f7-c700a756078b
Measurement Period	July 1, 2021 through June 30, 2022		
Measure Steward	Centers for Medicare & Medicaid Services (CMS)		
Measure Developer	Mathematica		
Measure Developer	Yale New Haven Health Service Corporation/ Center for Outcomes Research and Evaluation		
Endorsed By	National Quality Forum		
Description	This logic is intended to extract electronic clinical data. This is not an electronic clinical quality measure and this logic will not produce measure results. Instead, it will produce a file containing the data that CMS will link with administrative claims to risk adjust the Hybrid HWR outcome measure. It is designed to extract the first resulted set of vital signs and basic laboratory results obtained from encounters for adult Medicare Fee-For-Service patients admitted to acute care short stay hospitals.		

Populations/Logic



Population Criteria

Initial Population

"Inpatient Encounters"

Stratification

None

Definitions

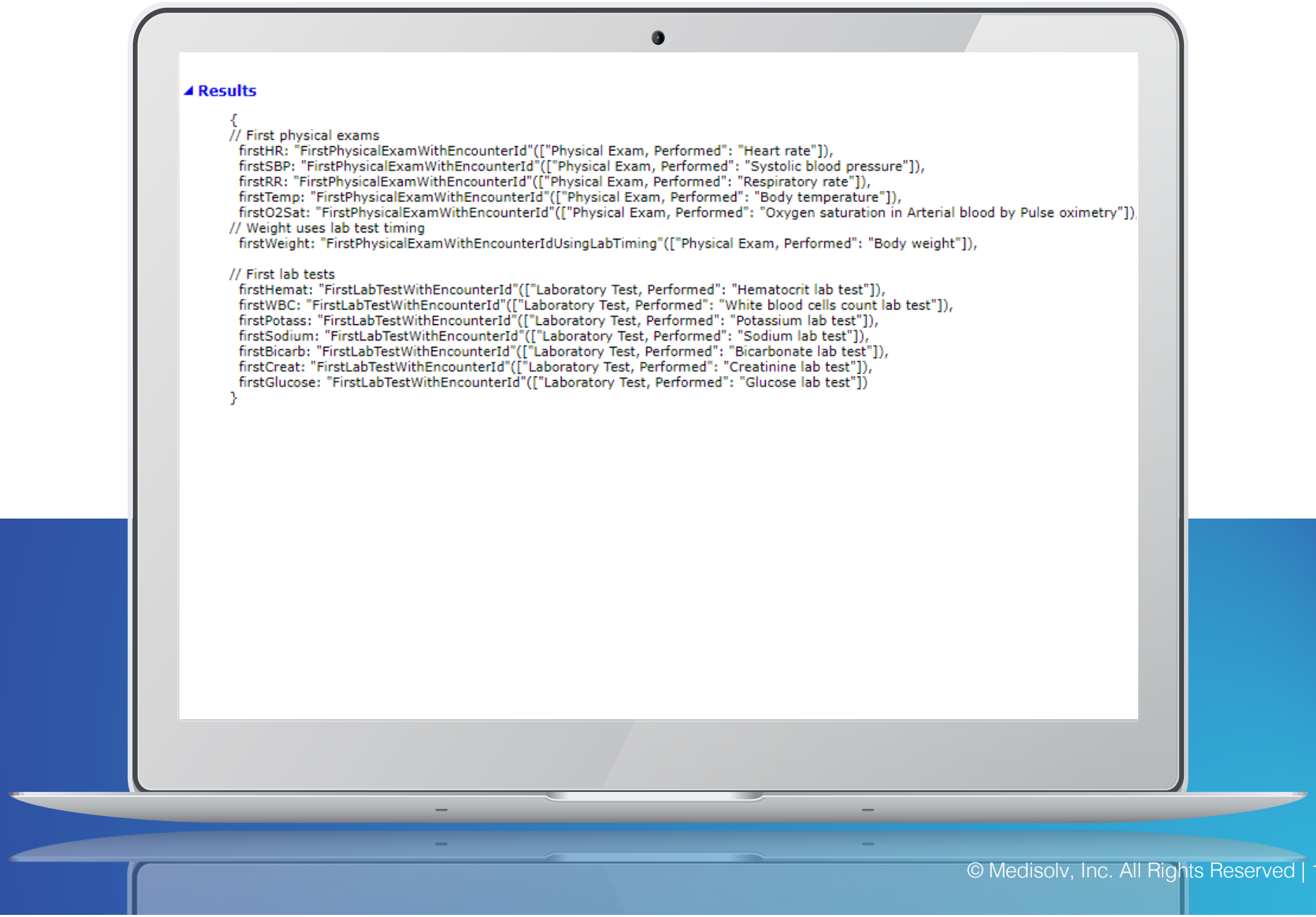
Initial Population

"Inpatient Encounters"

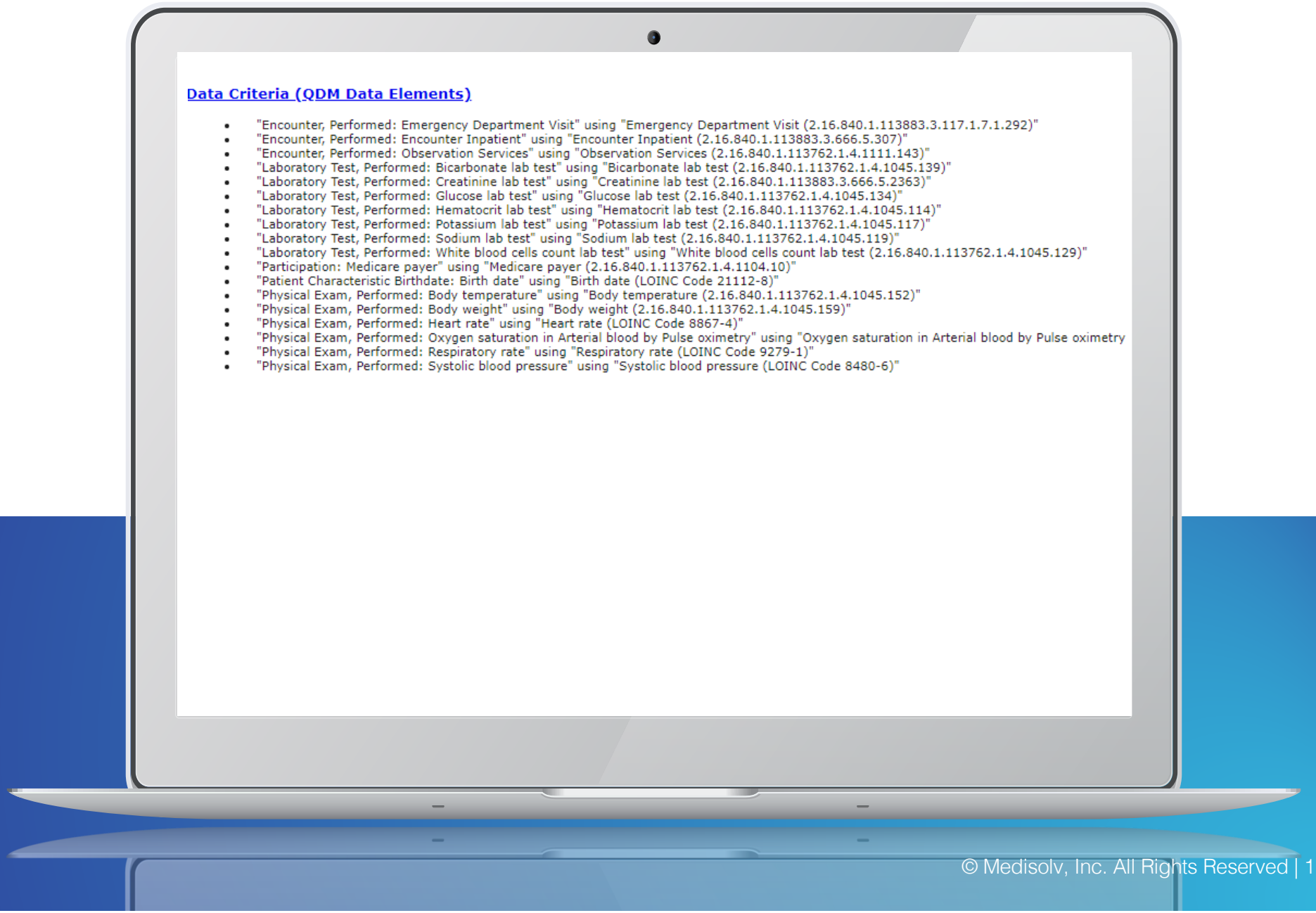
Inpatient Encounters

```
from
  ["Encounter, Performed": "Encounter Inpatient"] InpatientEncounter,
  ["Participation": "Medicare payer"] Payer,
  ["Patient Characteristic Birthdate": "Birth date"] BirthDate
  where ( Payer.participationPeriod overlaps before InpatientEncounter.relevantPeriod
     or start of Payer.participationPeriod same as start of InpatientEncounter.relevantPeriod
  )
    and
    end of Payer.participationPeriod != start of InpatientEncounter.relevantPeriod
    and Global."HospitalizationWithObservationLengthofStay" ( InpatientEncounter ) < 365
    and InpatientEncounter.relevantPeriod ends during "Measurement Period"
    and Global."CalendarAgeInYearsAt" ( BirthDate.birthDatetime, start of InpatientEncounter.relevantPeriod ) >= 65
  return InpatientEncounter
```


Populations/Logic



Populations/Logic



Data Criteria (QDM Data Elements)

- "Encounter, Performed: Emergency Department Visit" using "Emergency Department Visit (2.16.840.1.113883.3.117.1.7.1.292)"
- "Encounter, Performed: Encounter Inpatient" using "Encounter Inpatient (2.16.840.1.113883.3.666.5.307)"
- "Encounter, Performed: Observation Services" using "Observation Services (2.16.840.1.113762.1.4.1111.143)"
- "Laboratory Test, Performed: Bicarbonate lab test" using "Bicarbonate lab test (2.16.840.1.113762.1.4.1045.139)"
- "Laboratory Test, Performed: Creatinine lab test" using "Creatinine lab test (2.16.840.1.113883.3.666.5.2363)"
- "Laboratory Test, Performed: Glucose lab test" using "Glucose lab test (2.16.840.1.113762.1.4.1045.134)"
- "Laboratory Test, Performed: Hematocrit lab test" using "Hematocrit lab test (2.16.840.1.113762.1.4.1045.114)"
- "Laboratory Test, Performed: Potassium lab test" using "Potassium lab test (2.16.840.1.113762.1.4.1045.117)"
- "Laboratory Test, Performed: Sodium lab test" using "Sodium lab test (2.16.840.1.113762.1.4.1045.119)"
- "Laboratory Test, Performed: White blood cells count lab test" using "White blood cells count lab test (2.16.840.1.113762.1.4.1045.129)"
- "Participation: Medicare payer" using "Medicare payer (2.16.840.1.113762.1.4.1104.10)"
- "Patient Characteristic Birthdate: Birth date" using "Birth date (LOINC Code 21112-8)"
- "Physical Exam, Performed: Body temperature" using "Body temperature (2.16.840.1.113762.1.4.1045.152)"
- "Physical Exam, Performed: Body weight" using "Body weight (2.16.840.1.113762.1.4.1045.159)"
- "Physical Exam, Performed: Heart rate" using "Heart rate (LOINC Code 8867-4)"
- "Physical Exam, Performed: Oxygen saturation in Arterial blood by Pulse oximetry" using "Oxygen saturation in Arterial blood by Pulse oximetry
- "Physical Exam, Performed: Respiratory rate" using "Respiratory rate (LOINC Code 9279-1)"
- "Physical Exam, Performed: Systolic blood pressure" using "Systolic blood pressure (LOINC Code 8480-6)"

Populations/Logic

IPP

- Age >= 65 years
- Acute care hospital Inpatient Encounter
  - Length of stay < 365 days
  - Discharge during Measurement Period
- Medicare patient (primary, secondary…)
  - Insurance Effective Date must overlap (start on or before) Inpatient Encounter

    https://oncprojectracking.healthit.gov/support/browse/CHM-44

One or more of the following core data elements documented

- Vital Signs
  - Report the FIRST value within 24 hours prior to start of inpatient admission **OR**
  - Report FIRST value within 2 hours after start of inpatient admission
- Lab Results
  - Report FIRST value resulted within 24 hours prior to start of inpatient admission **OR**
  - Report FIRST value resulted within 24 hours after start of inpatient admission
  - Weight follows Lab Result timing

Implementation

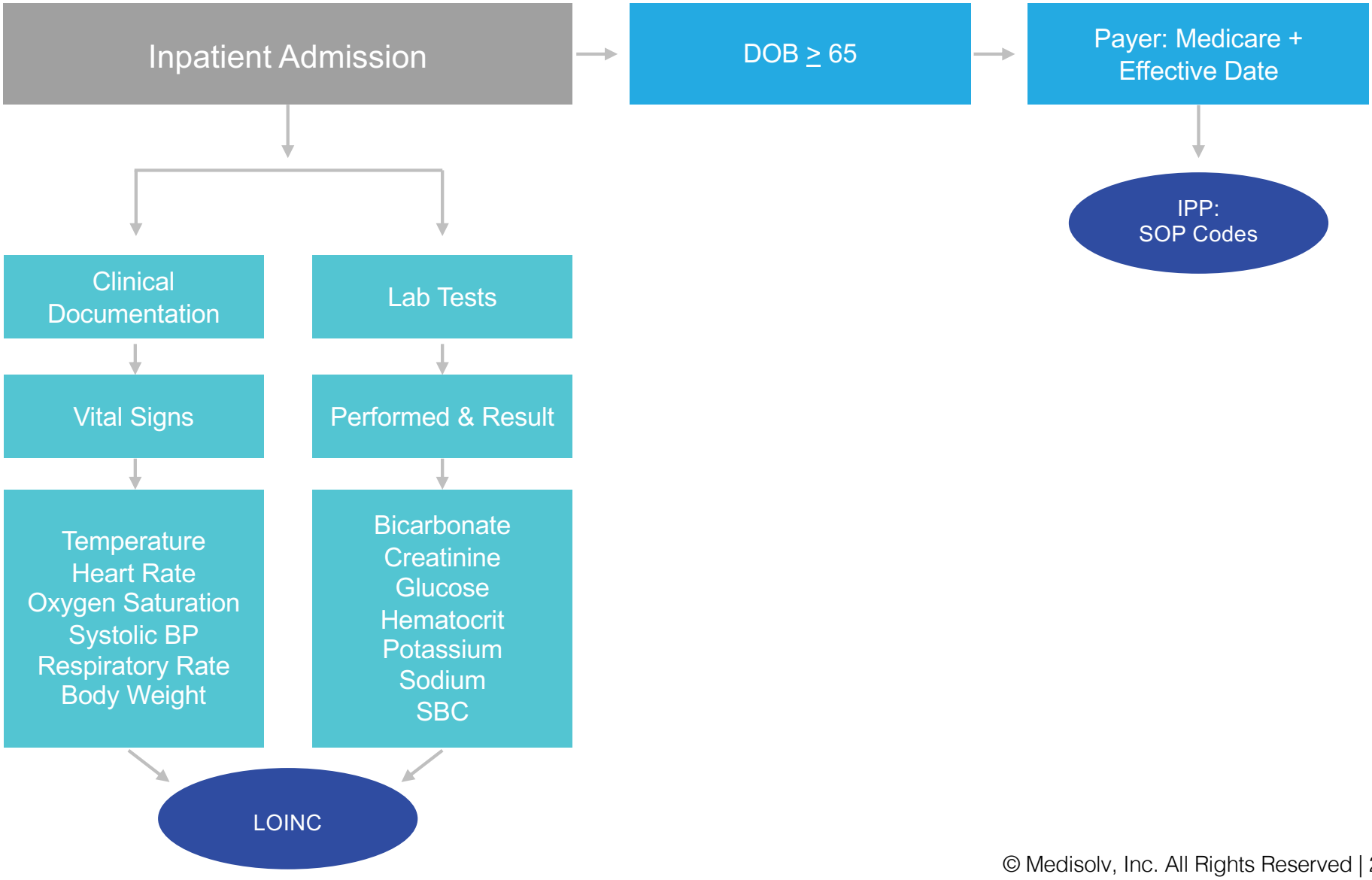
HHWR: CCDE Implementation

1. **Process Management**
2. **Workflow & Timing**
3. **Mapping**
4. **Monitoring & Improving**

Process Management

1. Education
2. IT and/or Quality input
3. Provider suggestions
4. Feedback on results and/or share results

WORKFLOW



Timing

Functions

FirstLabTestWithEncounterId(LabList List<QDM.PositiveLaboratoryTestPerformed>)

```
"Inpatient Encounters" Encounter
 let firstlab: First(LabList Lab
    where Lab.resultDatetime during Interval[start of Encounter.relevantPeriod - 1440 minutes, start of Encounter.relevantPeriod + 1440 minutes]
    sort by resultDatetime
 )
 return {
  Encounterid: Encounter.id,
  FirstResult: firstlab.result as Quantity,
  Timing: firstlab.resultDatetime
 }
```

FirstPhysicalExamWithEncounterId(ExamList List<QDM.PositivePhysicalExamPerformed>)

```
"Inpatient Encounters" Encounter
 let firstexam: First(ExamList Exam
    where Exam.relevantDatetime during Interval[start of Encounter.relevantPeriod - 1440 minutes, start of Encounter.relevantPeriod + 120 minutes]
    sort by relevantDatetime
 )
 return {
  Encounterid: Encounter.id,
  FirstResult: firstexam.result as Quantity,
  Timing: firstexam.relevantDatetime
 }
```

FirstPhysicalExamWithEncounterIdUsingLabTiming(ExamList List<QDM.PositivePhysicalExamPerformed>)

```
"Inpatient Encounters" Encounter
 let firstexamwithlabtiming: First(ExamList Exam
    where Exam.relevantDatetime during Interval[start of Encounter.relevantPeriod - 1440 minutes, start of Encounter.relevantPeriod + 1440 minutes]
    sort by relevantDatetime
 )
 return {
  Encounterid: Encounter.id,
  FirstResult: firstexamwithlabtiming.result as Quantity,
  Timing: firstexamwithlabtiming.relevantDatetime
```


Timing

The earliest instance of documentation meeting timing requirements below will be evaluated and included in the QRDA file.

Labs & Vitals

Within the 24 hours prior to the start of the Inpatient Encounter

Labs & Weight

Within 24 hours after the start of the Inpatient Encounter

Vitals

Within the 2 hours after the start of the Inpatient Encounter

Mapping Only

No additional documentation needed

Vital Signs

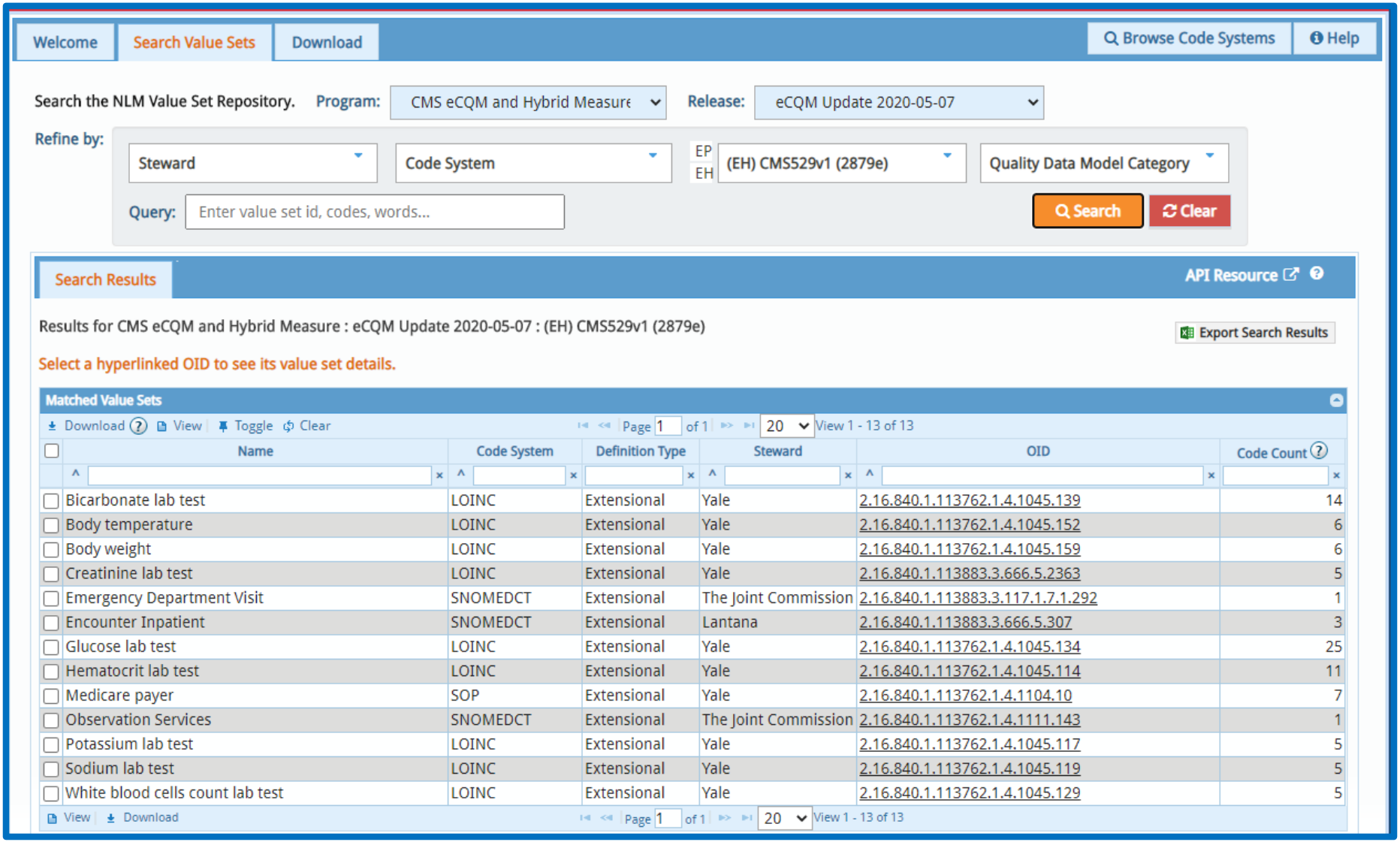
- Heart rate
- Systolic blood pressure
- Respiratory rate
- Temperature
- Oxygen saturation
- Weight

Lab Test Results

- Hematocrit
- White blood cell count
- Potassium
- Sodium
- Bicarbonate
- Creatinine
- Glucose

Mapping

Value Set Authority Center (VSAC)



Name	Code System	Definition Type	Steward	OID	Code Count
Bicarbonate lab test	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.139	14
Body temperature	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.152	6
Body weight	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.159	6
Creatinine lab test	LOINC	Extensional	Yale	2.16.840.1.113883.3.666.5.2363	5
Emergency Department Visit	SNOMEDCT	Extensional	The Joint Commission	2.16.840.1.113883.3.117.1.7.1.292	1
Encounter Inpatient	SNOMEDCT	Extensional	Lantana	2.16.840.1.113883.3.666.5.307	3
Glucose lab test	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.134	25
Hematocrit lab test	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.114	11
Medicare payer	SOP	Extensional	Yale	2.16.840.1.113762.1.4.1104.10	7
Observation Services	SNOMEDCT	Extensional	The Joint Commission	2.16.840.1.113762.1.4.1111.143	1
Potassium lab test	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.117	5
Sodium lab test	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.119	5
White blood cells count lab test	LOINC	Extensional	Yale	2.16.840.1.113762.1.4.1045.129	5

Monitoring & Improving

If CCDEs aren't considered a measure, why do I need to monitor? What is there to improve?

Monitoring & Improving

Hybrid Risk-Standardized Readmission Rate (HRSRR):

- Unplanned readmissions w/in 30 days from index admission
- Adjusted for differences in case mix and service mix across hospitals
- **The sicker the patient, the higher the probability of readmission**

Monitoring & Improving

Table II: Summary of Your Hospital's Submission of CCDE Information for the 30-Day Hybrid HWR Measure
HOSPITAL NAME
Hospital Discharge Period: January 1, 2018 through June 30, 2018

Submission Information	Number	Percentage (%)
Total discharges (based on claims)	701	--
Total discharges for which CCDE were successfully submitted	1,184	--
Total discharges with successfully linked claims and CCDE information [a] [b]	652	55.1%
Total discharges with failed linkage of claims and CCDE information	532	44.9%
Total discharges with missing heart rate [c]	1,184	100.0%
Total discharges with missing respiratory rate [c]	1,184	100.0%
Total discharges with missing temperature [c]	10	0.8%
Total discharges with missing systolic blood pressure [c]	2	0.2%
Total discharges with missing oxygen saturation [c]	1,184	100.0%
Total discharges with missing hematocrit [c]	14	1.2%
Total discharges with missing weight [c]	1,184	100.0%
Total discharges with missing white blood cell count [c]	41	3.5%
Total discharges with missing sodium [c]	15	1.3%
Total discharges with missing bicarbonate [c]	15	1.3%
Total discharges with missing potassium [c]	15	1.3%
Total discharges with missing creatinine [c]	15	1.3%
Total discharges with missing glucose [c]	15	1.3%

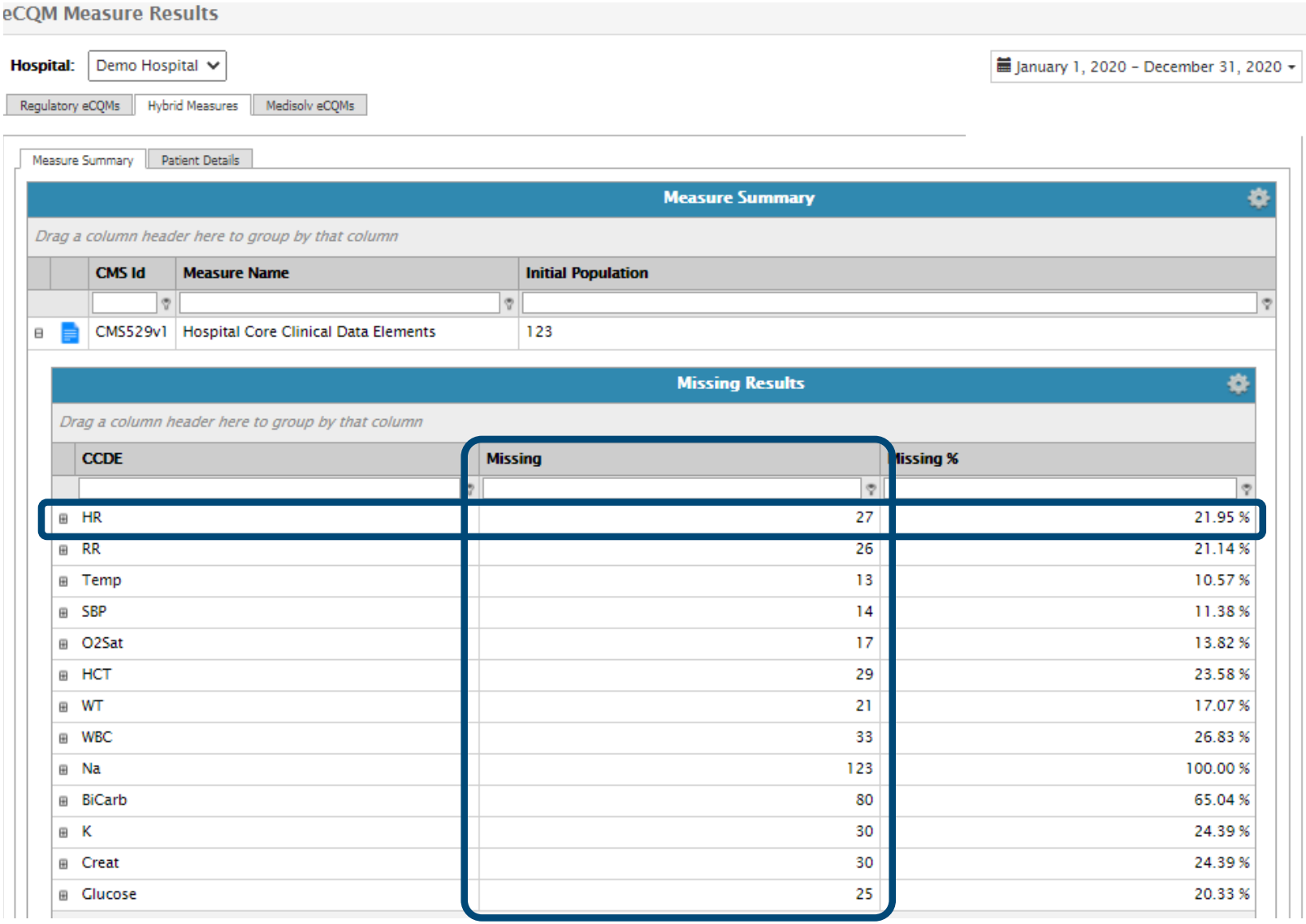
Monitoring & Improving

NO CCDE or INCORRECT CCDEs will be sent if:

- Incorrect/Missing Mapping
- Missing documentation
- Errors in documentation (typos, etc.)
- Workflow gaps

This will not accurately reflect the severity of patient's illness upon arrival to the hospital, and therefore, will impact the rate calculation.

Monitoring & Improving



Monitoring & Improving

	CMS529v1	Hospital Core Clinical Data Elements	123

Missing Results

Drag a column header here to group by that column

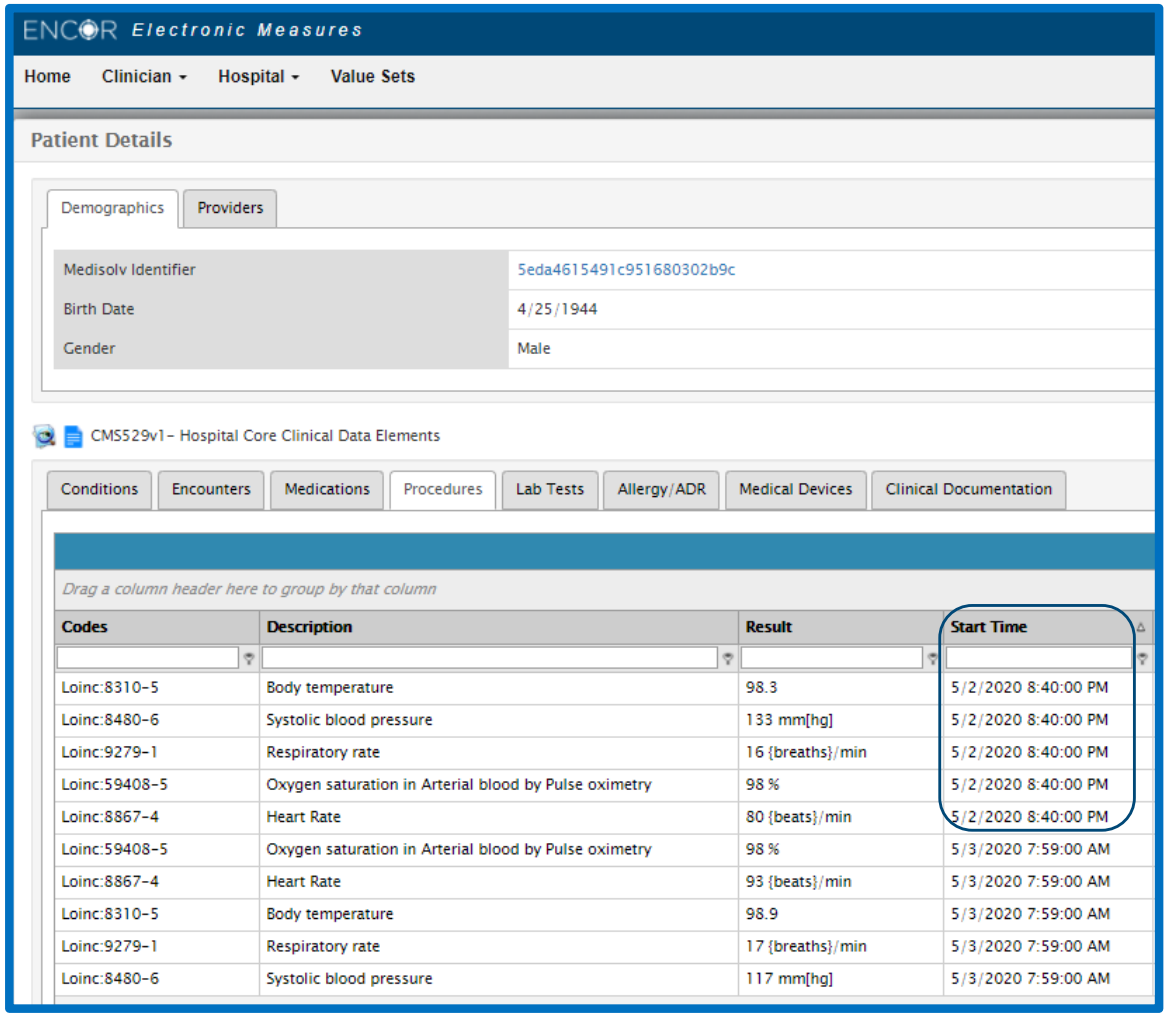
CCDE	Missing
HR	27

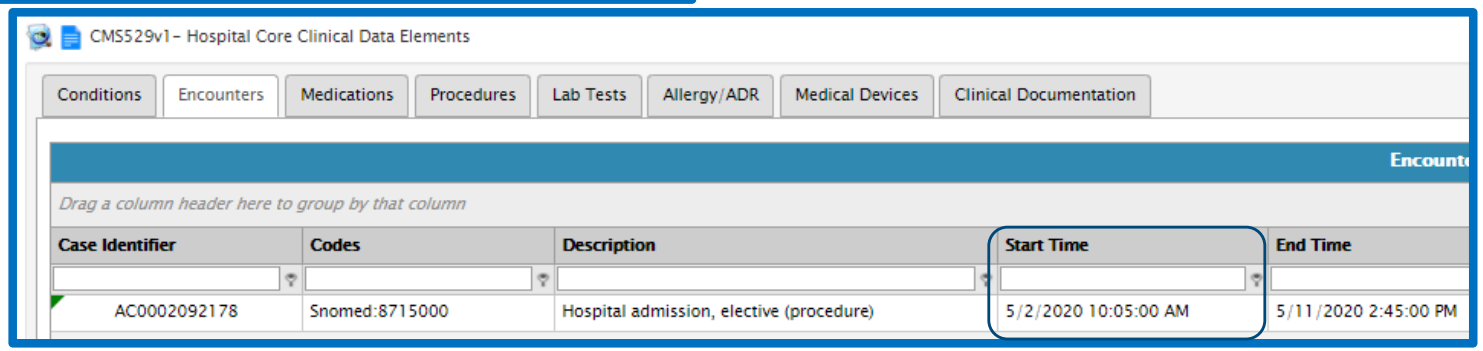
Patient Details – Missing Results

Drag a column header here to group by that column

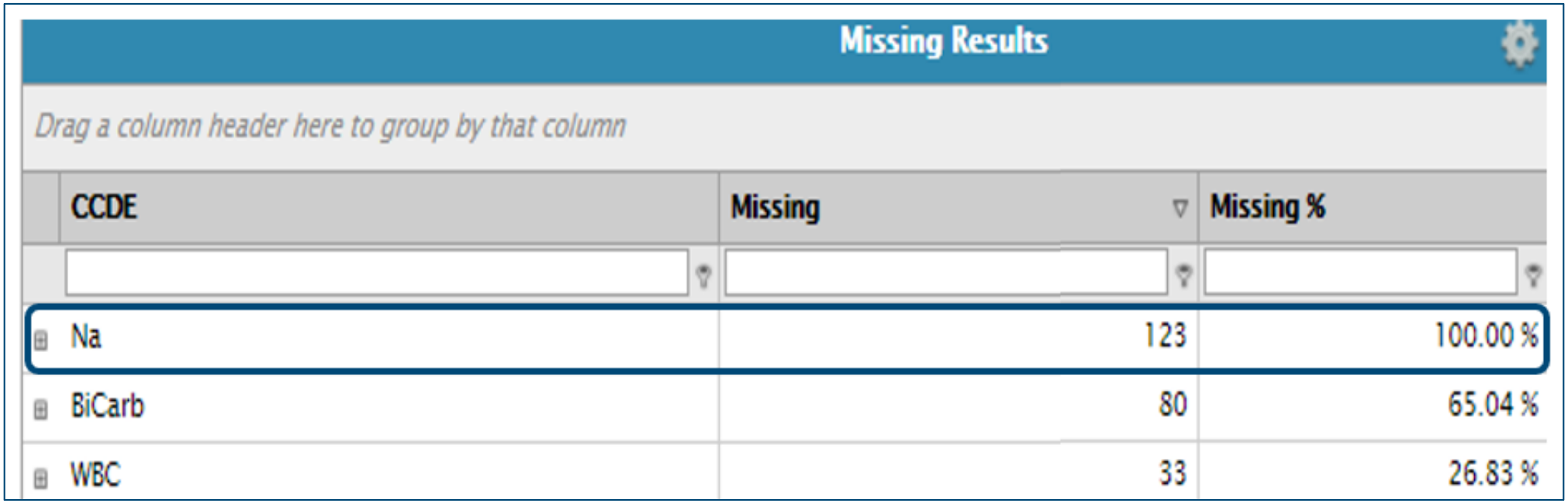
Patient Name	Case Identifier	Age	Payer	HR	RR	Temp	SBP	O2Sat	HCT	WT	WBC
Muir, Bram	AC0002092178	76	MEDICARE								
Curtis, Denise	AC0002090957	82	MEDICARE			97.9	169 MMHG		38.4 %	54431.09 gm	9 K/m
Burros, Scott	AC0002090725	85	MEDICARE			98.1	149 MMHG	97 %	31.2 %	95254.4 gm	
Salinger, Hsun	AC0002087094	73	MEDICARE			98.6	124 MMHG	97 %	29.7 %		15.9 K
Louis, Camellia	AC0002088232	80	MEDICARE			98	209 MMHG	99 %	38.4 %	51709.53 gm	7.2 K/
Rand, Eileen	AC0002089104	73	MEDICARE						31.4 %		4.6 K/

Monitoring & Improving





Monitoring & Improving



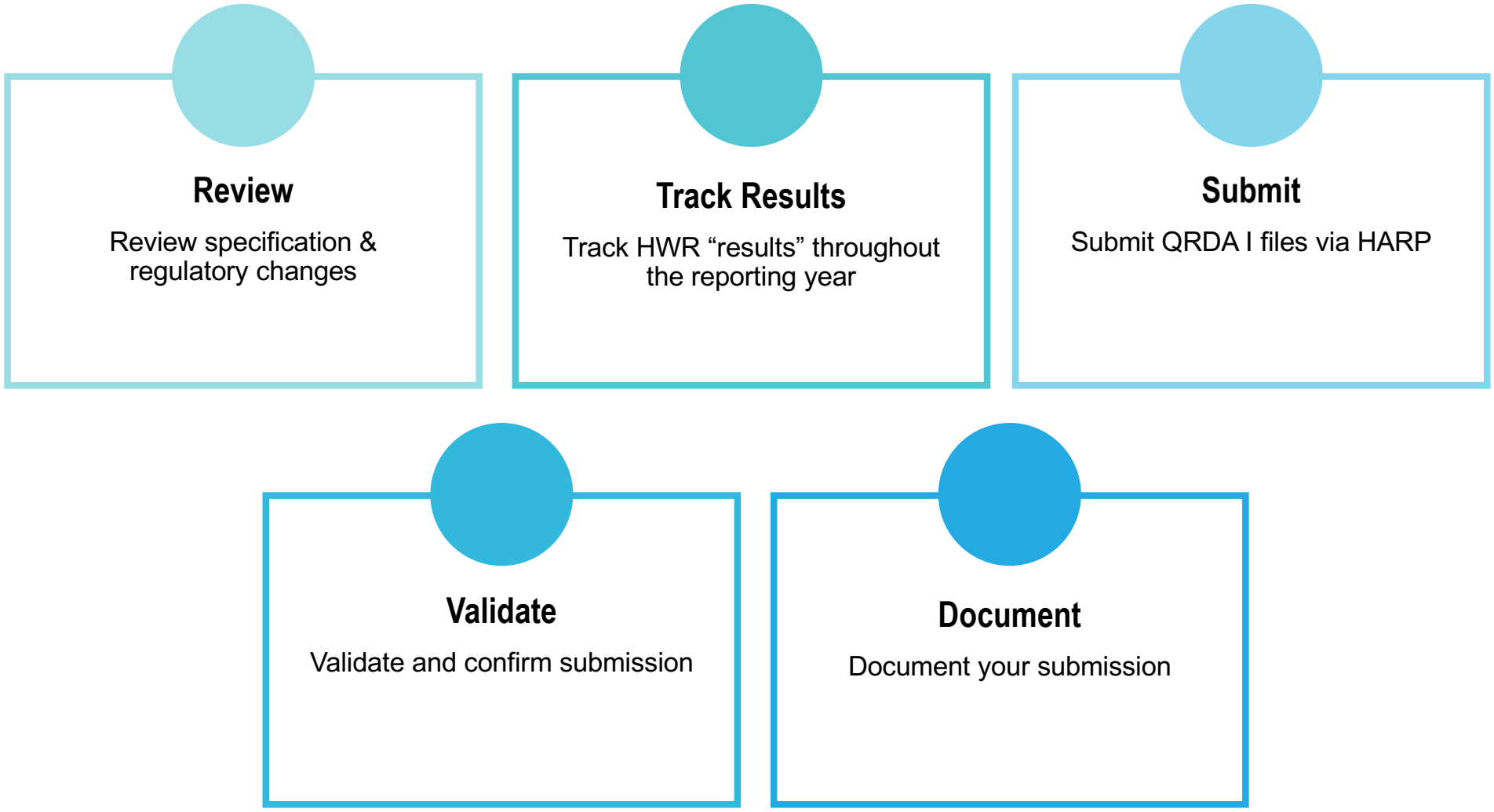
Missing Results

Drag a column header here to group by that column

CCDE	Missing	Missing %
Na	123	100.00 %
BiCarb	80	65.04 %
WBC	33	26.83 %

Submission & Hospital Specific Reports

Submission Process



Hybrid Hospital Specific Report

6 months later….

Table I: Your Hospital's Performance on the 30-Day Hybrid HWR Measure
HOSPITAL NAME
Hospital Discharge Period: January 1, 2018 through June 30, 2018

Performance Information	Hybrid HWR Composite [d]	Medicine	Surgery/ Gynecology	Cardio-respiratory	Cardio-vascular	Neurology
Your hospital's H-RSRR [a]	15.5	--	--	--	--	--
Total number of unplanned readmissions at your hospital (numerator) [b]	78	37	9	24	6	2
Total number of eligible discharges included in the calculation of the Hybrid HWR measure (denominator) [c]	567	281	64	152	38	32
Your hospital's Observed Unplanned Readmission Rate (numerator/denominator)	13.8	13.2	14.1	15.8	15.8	6.3
Overall observed readmission rate for all hospitals participating in the 2018 Voluntary Reporting (numerator/denominator)	15.7	--	--	--	--	--
Total number of unplanned readmissions for all hospitals participating in the 2018 Voluntary Reporting (numerator)	19,303	10,811	3,187	2,663	1,703	939
Total number of eligible discharges for all hospitals participating in the 2018 Voluntary Reporting (denominator) [c]	123,056	61,821	27,012	14,920	11,755	7,548

[a] Your Hybrid Risk-Standardized Readmission Rate (H-RSRR) may not accurately reflect your hospital's true performance on the Hybrid HWR measure as it is calculated using (i) only a portion of the data from your hospital, (ii) data from only a small number of hospitals participating in the 2018 voluntary reporting, and (iii) values assigned to replace missing data.
[b] For further information on how the measure counts readmissions, please refer to Section 2.2.2 of the 2019 All-Cause Hospital-Wide Measure Updates and Specifications Report: Hospital-Wide Readmission, or the Hybrid Frequently Asked Questions. This may not be equal to the total number of discharges with successfully linked claims and CCDE information. Instead, the total number of eligible discharges is derived from applying the measure inclusion and exclusion criteria to the total number of successfully linked claims. For information on the measure inclusion and exclusion criteria, please see 2019 All-Cause Hospital-Wide Measure Updates and Specifications Report: Hospital-Wide Readmission.
[c] This may not be equal to the total number of discharges with successfully linked claims and CCDE information at the hospital. Instead, the total number of eligible discharges is derived from applying the measure inclusion and exclusion criteria to the total number of successfully linked claims. For information on the measure inclusion and exclusion criteria, please see 2019 All-Cause Hospital-Wide Measure Updates and Specifications Report: Hospital-Wide Readmission.
[d] Specialty Cohort Model: The Hybrid HWR Composite is calculated based on performance on the included specialty cohort models.

Hybrid Hospital Specific Report

Table II: Summary of Your Hospital's Submission of CCDE Information for the 30-Day Hybrid HWR Measure
HOSPITAL NAME
Hospital Discharge Period: January 1, 2018 through June 30, 2018

Submission Information	Number	Percentage (%)
Total discharges (based on claims)	701	--
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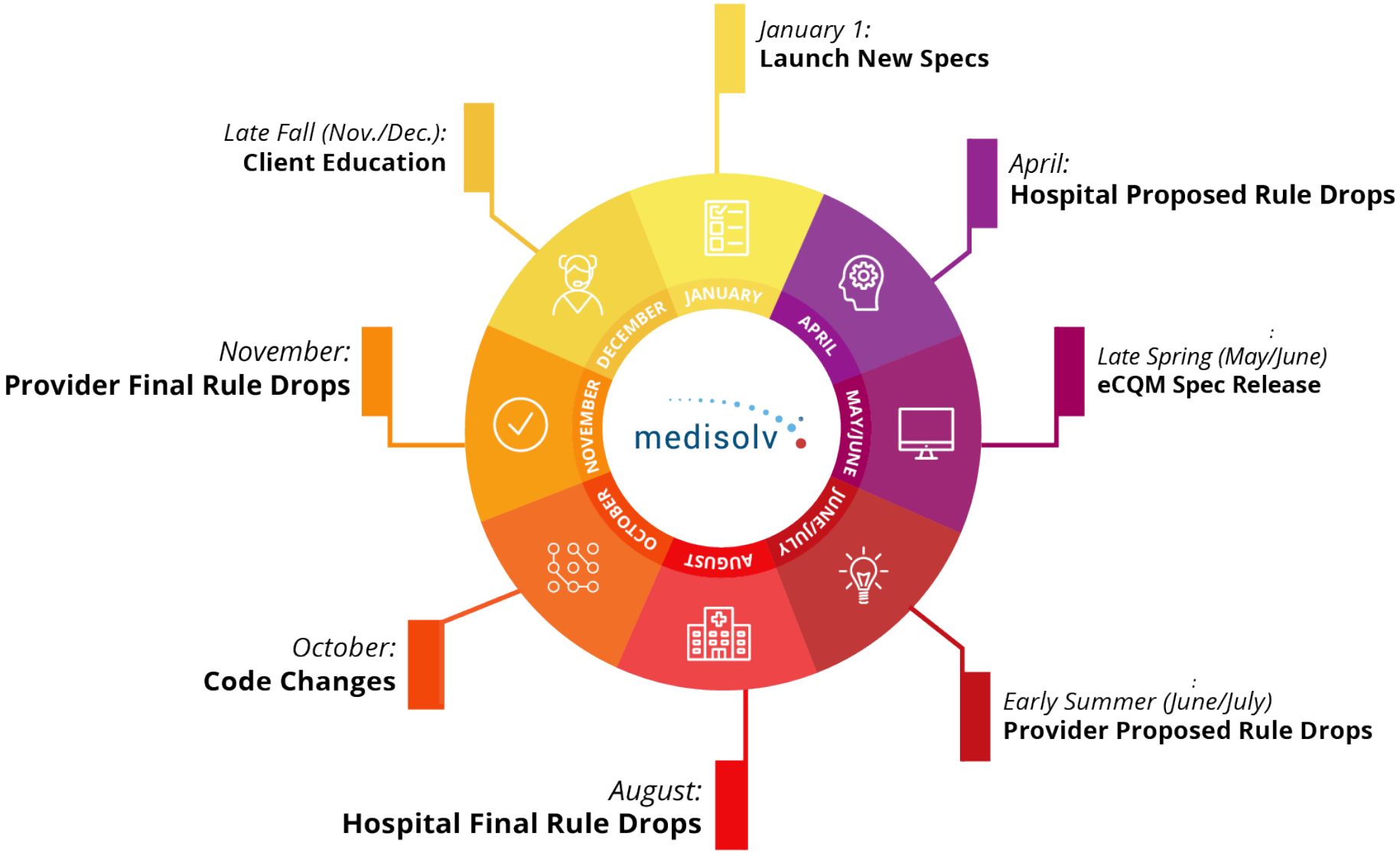
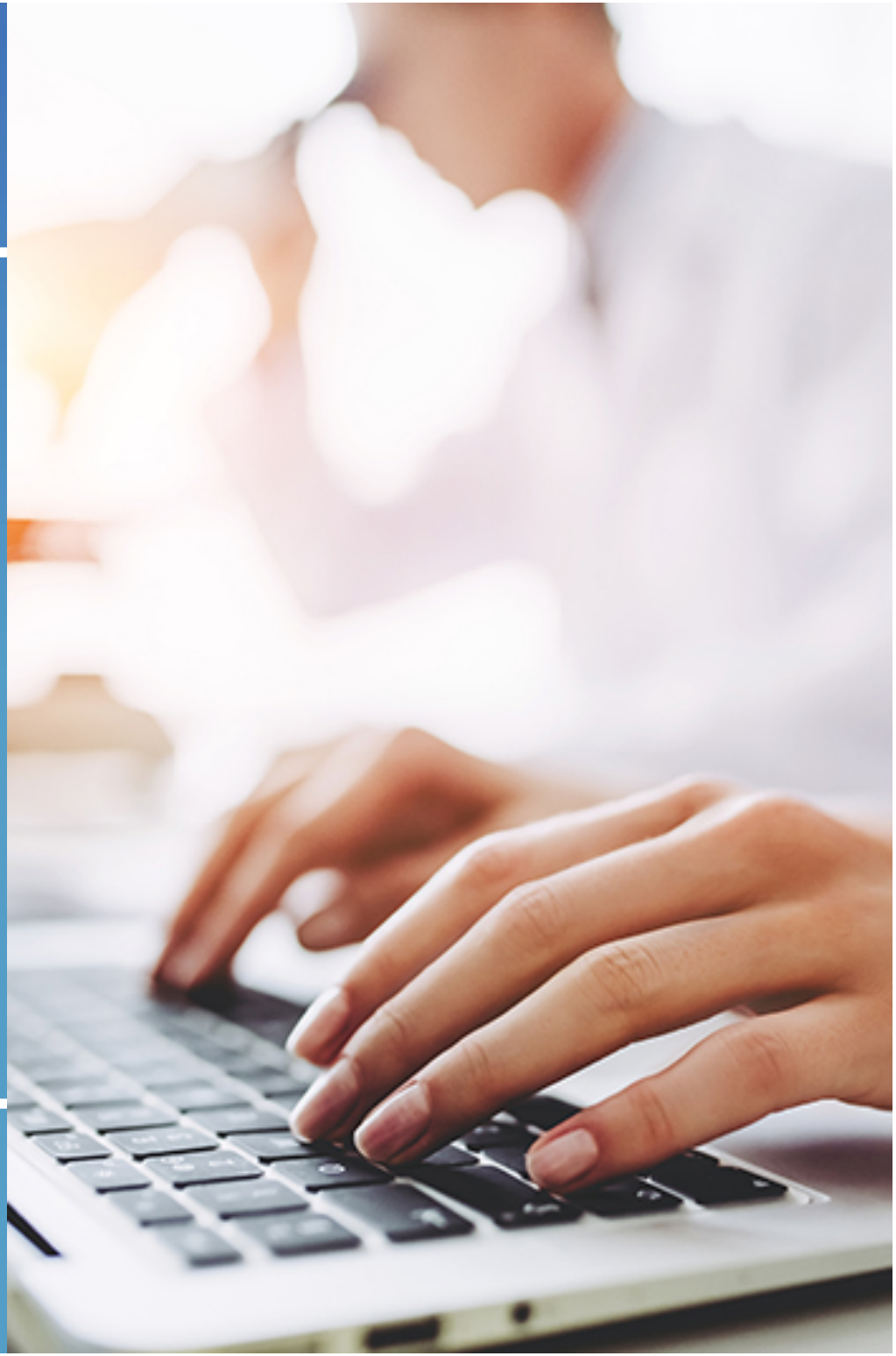
Maintenance: Annual Cycle



Best Practices

Start early and participate in voluntary reporting.



Lessons Learned

2018 Voluntary Reporting

Core Clinical Data Elements (CCDE)

EHR data elements require Mapping to Standardized Nomenclature

Requires accurate interpretation of logic

QRDA I File Format

Different from fully specified eCQM format

Submission Prep

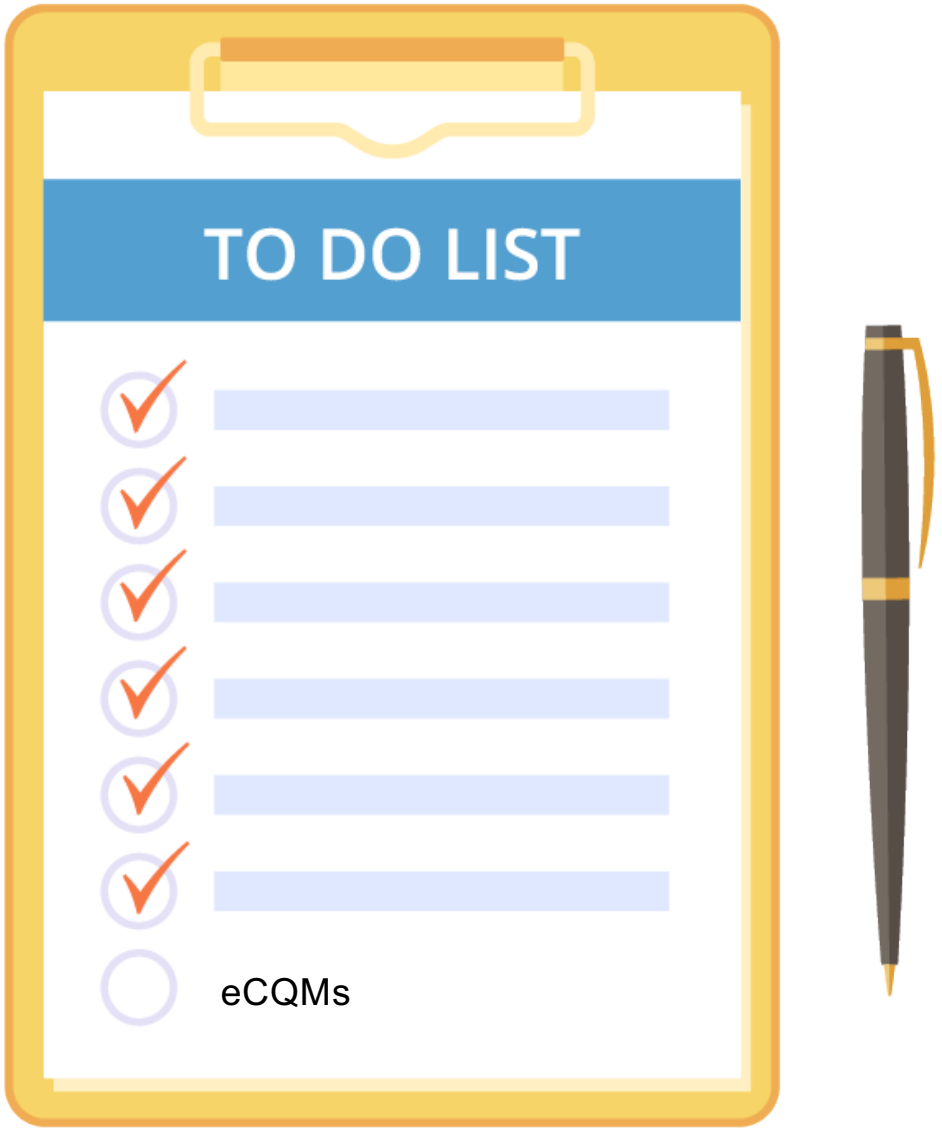
Maintain and monitor mapping changes

Validate results throughout the reporting year

Confirm all data elements populating reports as expected

Units of measurement

Moving eCQMs to the Top



2021 IPPS Final Rule

Fiscal Year 2021 Inpatient Prospective Payment Systems (IPPS) for Acute Care Hospitals and the Long-Term Care Hospital (LTCH) Prospective Payment System (PPS) Final Rule.

Finalizing proposal to expand the requirement to use EHR technology certified to the 2015 Edition for submitting data on not only the previously finalized Hybrid Hospital-Wide Readmission but all hybrid measures in the Hospital IQR Program.

Questions?

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