medisolv

It's a Hybrid World
Why Not Hybrid Quality Measures?

May 5, 2021

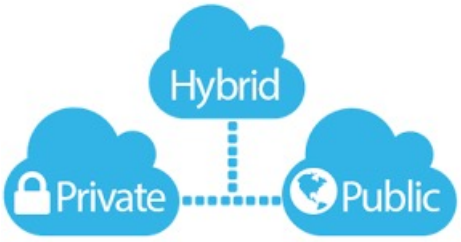
Everything is Going Hybrid .....

1

Hybrid Automobiles

2

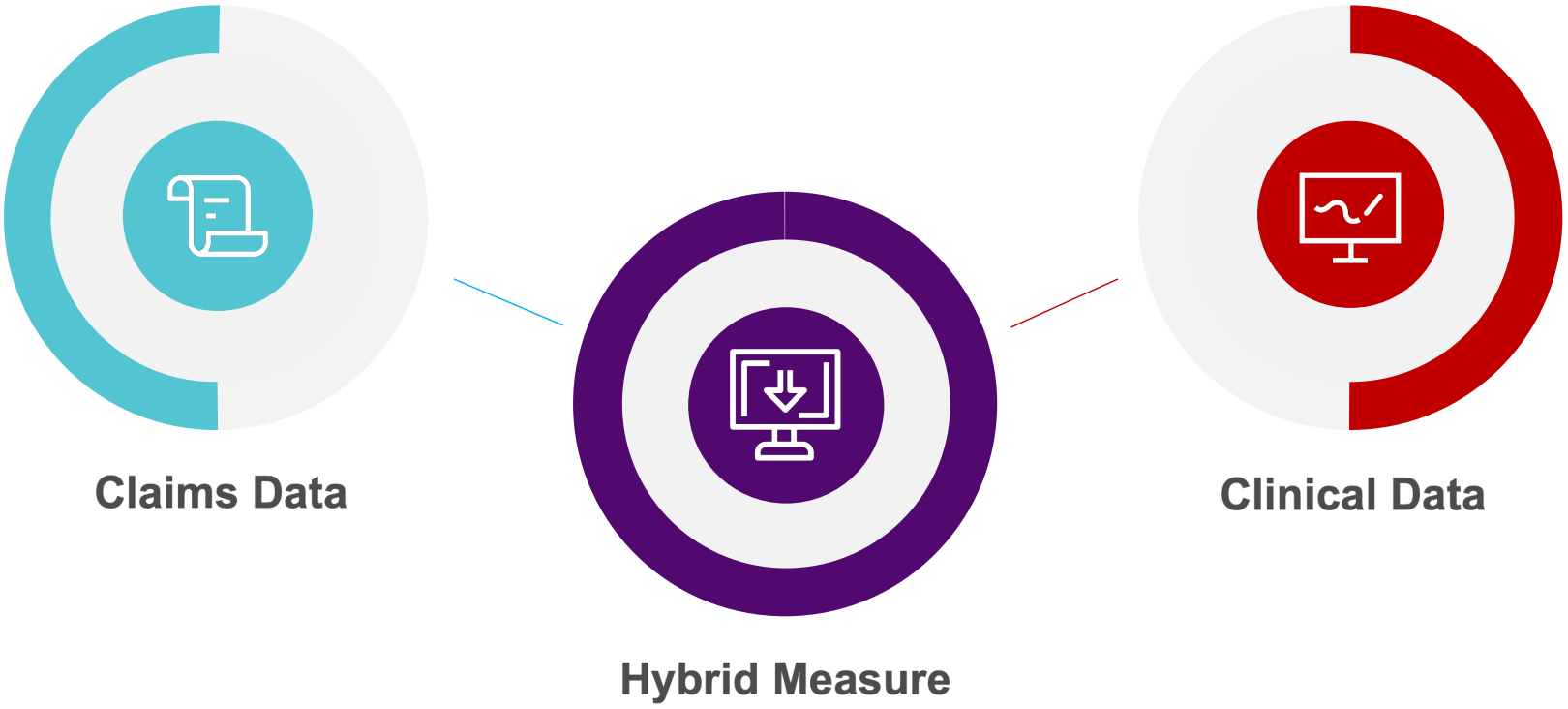
Hybrid Cloud



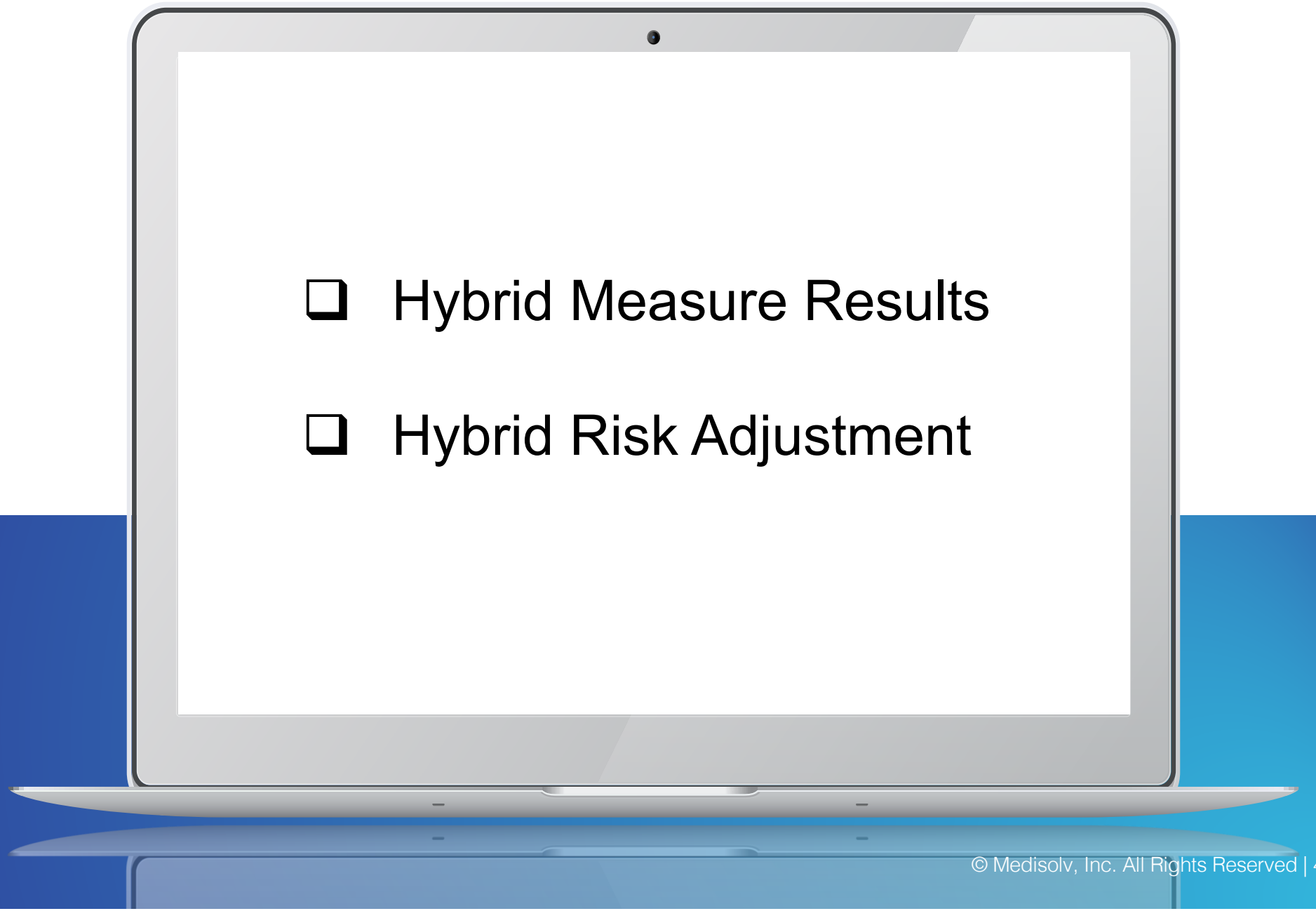
3

Hybrid Food

Why Not Hybrid Measures?



Which Hybrid Measures ?



- ❑ Hybrid Measure Results
- ❑ Hybrid Risk Adjustment

NCQA HEDIS Hybrid Measure Reporting Example

Measure	Age Range	Needed Items
Controlling High Blood Pressure (CBP)	**18 - 85 yrs.**	Submit **all** progress notes in **2021** with: ▪ Progress note with latest blood pressure reading taken in **2021** ▪ A dated graphic sheet **or** vital signs log in **2021** ▪ BP taken and reported by member using **any** digital device in **2021** ▪ Telehealth encounters in **2021**

- **Fax cover sheet** - Include the contact person's name, phone, and fax number.
- **Patient demographic sheet** - This is also known as the face sheet or registration sheet. This assists us to validate the member's name or date of birth in case of any discrepancies found in the medical records.
- **Medical records** - Send only the documents requested. This will decrease the volume of records sent and unnecessary transmission of PHI.

CMS Hybrid Risk Adjusted HWR Voluntary Reporting CY 2018

Hybrid Measures are Coming! Get Ready!

What is a Hybrid Measure?

A hybrid measure uses both claims data and clinical variables from electronic health records (EHR) for risk adjustment.

Hybrid Measures News

In 2018, CMS will implement the **FIRST** Voluntary Hybrid Hospital-Wide Readmission (HWR) Measure in the Inpatient Quality Reporting Program.

Why should your hospital submit data on the Voluntary Hybrid HWR Measure?

1. **Get Ahead!**
   Future hybrid measures will use similar data elements. Submit for this one and **be ready for the next!**
2. **Test Submission With No Risk!**
   Allows your hospital to **develop and test the submission process**
3. **Easy To Report!**
   Utilizes data **already routinely captured in your patients EHRs**
4. **Return On Your Investment!**
   Capitalizes on the **investments** hospitals made into EHR systems
5. **You Asked For It!**
   Responds to hospital requests to include clinical data in accounting for **patient risk**
6. **Making Care Count!**
   Aligns with national efforts to improve the **quality of care** your patients receive

CMS Hybrid Measures Reporting Requirements

Program	Reporting Requirement	Performance Year	Payment Year Public Reporting
CMS IQR Program (2021 IPPS Final Rule) Hybrid Hospital-Wide All-Cause Risk Standardized Re-admission Rate (HWR)	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 IQR Program (2022 IPPS Proposed Rule) Hybrid Hospital-Wide All-Cause Risk Standardized Mortality Rate (HWM)***	Voluntary	July 1, 2022 – June 30, 2023	
	Mandatory	July 1, 2023 – June 30, 2024	FY 2026 (10/1/2025) Payments

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*

**** eCQM type Certification 2015 Edition Cures Update in 2022 IPPS Proposed Rule*

Risk Adjustment HWR: Clinical Data Elements vs Claims Only

Risk Standardization Variables	Claims	Hybrid
Comorbid Conditions – ICD DX	✓	✓
Age	✓	✓
Pulse Rate		✓
Systolic Blood Pressure		✓
Temperature		✓
Respiratory Rate		✓
Weight		✓
Oxygen Saturation		✓
Hematocrit		✓
White Blood Cell Count		✓
Serum Sodium		✓
Serum Potassium		✓
Serum Creatinine		✓
Blood Glucose		✓
Serum Bicarbonate		✓

CCDE: Technical Expert Panel (TEP)

Circa 2014

***Convener: Yale/*CORE**

***Sponsor:* CMS**

Name	Organization *(Title)*	Location
Howard Bregman, MD, MS	Epic	Verona, WI
Ralph Brindis, MD, MPH, MACC, FSCAI	The American College of Cardiology National Cardiovascular Registry *Senior Medical Officer, External Affairs*	San Francisco, CA
Zahid Butt, MD	Medisolv, Inc. *CEO*	Columbia, MD
Christopher Chute, MD, DrPH	Mayo Clinic *Professor of Biomedical Informatics*	Rochester, MN
Richard P. Dutton, MD, MBA	Anesthesia Quality Institute *Executive Director*	Park Ridge, IL
David Kaelber, MD, PhD, MPH, FAAP, FACP	MetroHealth System *Chief Medical Informatics Officer*	Shaker Heights, OH
Saul Kravitz, PhD	MITRE *Principal Health IT Engineer*	McLean, VA
Adam Landman, MD, MS, MIS, MHS	Brigham and Women's Hospital *Chief Medical Information Officer for Health Information Innovation and Integration*	Boston, MA
David Levine, MD	University HealthSystem Consortium *Vice President of Informatics and Medical Director of Comparative Data and Informatics*	Chicago, IL
Maggie Lohnes, RN	McKesson Corporation *Clinical Quality Executive*	Fox Island, WA
Rute Martins, MS	The Joint Commission *Associate Project Director*	Oakbrook Terrace, IL
Clement McDonald, MD	Lister Hill National Center for Biomedical Communications *Director*	Bethesda, MD
Meg McElroy, MBA, RHIA	American Health Information Management Association (AHIMA) *System Program Manager*	Milwaukee, WI
Mary Beth Mitchell, MSN, RN-BC, CPHIMS	Texas Health Resources *Chief Nursing Informatics Officer*	Dallas, TX
Karen Nielsen, MBA, MPA	Siemens Medical Solutions USA, Inc. *R&D, Analytics, and Business Intelligence*	Malvern, PA
Kim Nolen, PharmD	Pfizer, Inc. *Medical Outcomes Specialist*	Peachtree City, GA
David Shahian, MD	Massachusetts General Hospital Center for Quality and Safety *Vice President*	Boston, MA
Christopher Snyder, DO	Peninsula Regional Medical Center *Chief Medical Information Officer*	Ocean City, MD

Development of Core Clinical Data Elements (CCDE)

IDENTIFICATION OF POTENTIALLY FEASIBLE CLINICAL DATA

- Consider data from all electronic data sources
  - Convene a TEP to apply criteria to assess feasibility of all QDM categories (19) and subcategories (82)
- Create a list of feasible QDM subcategories
- Create a list of feasible subcategories relevant to risk adjustments

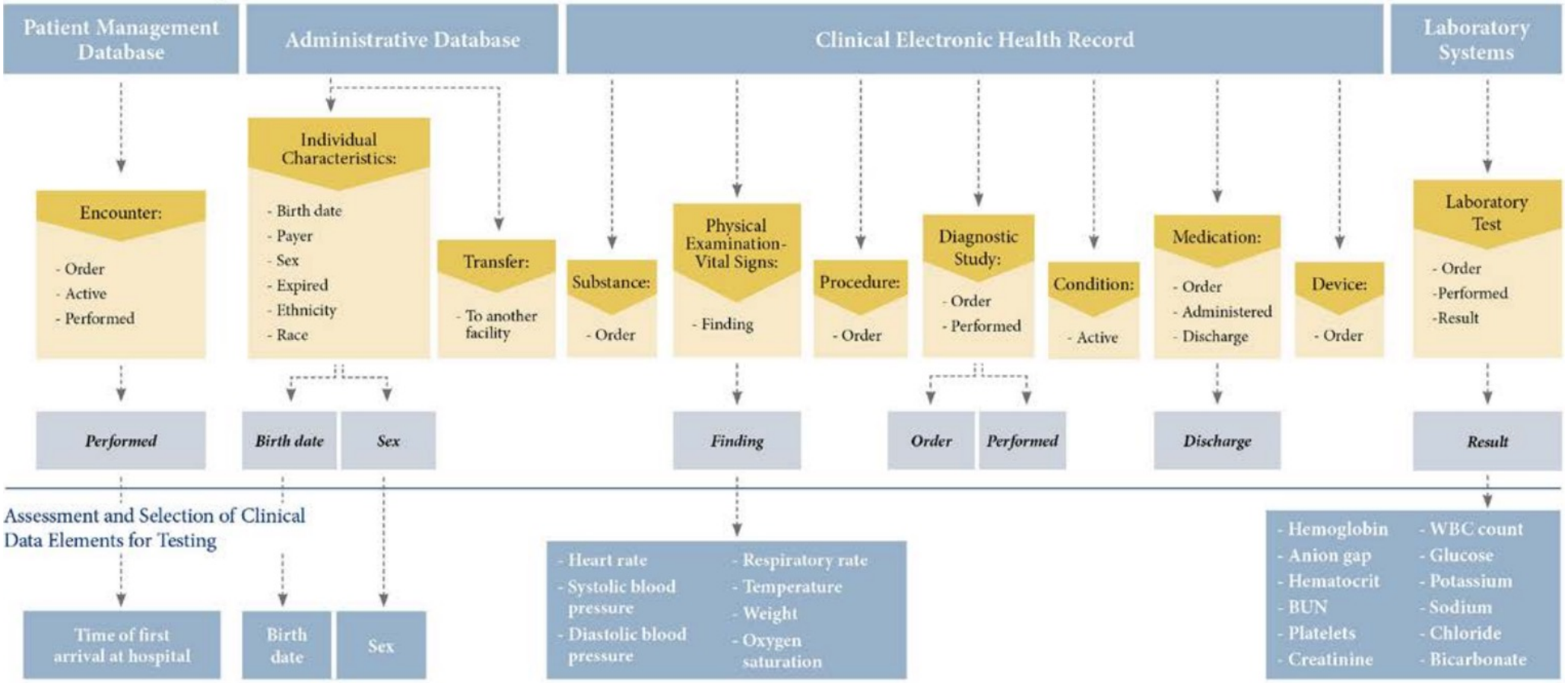
ASSESSMENT AND SELECTION OF CLINICAL DATA ELEMENTS FOR TESTING

- Identify data elements from TEP-approved subcategories
  - Evaluate frequency and timing of first captured laboratory results and vital sign findings
  - Identify data elements captured for at least 90% of non-surgical admissions
  - Evaluate the accuracy of first captured values
- Create a list of feasible data elements

IDENTIFICATION OF CORE CLINICAL DATA ELEMENTS (CCDE)

- Create preliminary risk-adjusted 30-day mortality models for 8 common medical conditions using the feasible data elements
- **There are 21 Core Clinical Data Elements that are feasible and predictive in at least preliminary model**

CCDE Development of Feasible Data Elements



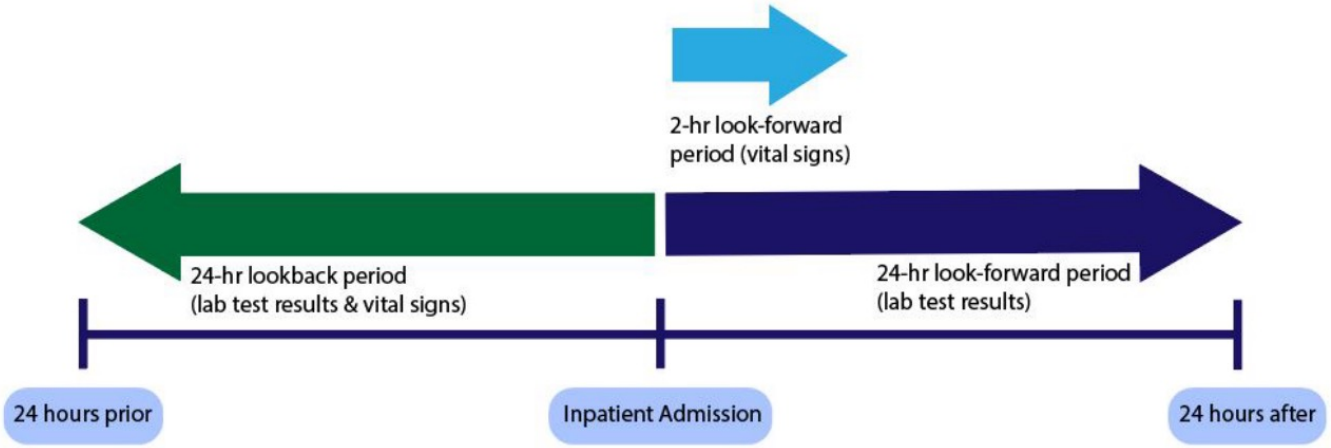
CCDE: High Probability of Feasible QDM Data Elements (>70%)

Category	Subcategory	Met Data Capture Criteria (yes/no)
1. Encounter	1.2 Order	12/4
1. Encounter	1.3 Active	12/3
1. Encounter	1.4 Performed	14/2
2. Individual Characteristics	2.2 Expired	13/2
2. Individual Characteristics	2.6 Ethnicity	12/2
2. Individual Characteristics	2.7 Race	12/2
3. Transfer	3.1 To (another facility)	12/2
8. Laboratory Test	8.2 Order	13/3
8. Laboratory Test	8.3 Performed	11/4
8. Laboratory Test	8.4 Result	15/1
9. Diagnostic Study	9.2 Order	14/2
9. Diagnostic Study	9.3 Performed	11/3
11. Procedure	11.2 Order	12/3
12. Device	12.2 Order	11/2
13. Medication	13.1 Order	15/1
13. Medication	13.3 Administered	12/4
13. Medication	13.8 Discharge	11/4
14. Substance	14.1 Order	12/4

CCDE: Sample of High Probability of Infeasible QDM Data Elements (>70%)

Category	Subcategory	Met Data Capture Criteria (yes/no)
2. Individual Characteristics	2.3 Clinical Trial Participant	1/14
2. Individual Characteristics	2.9 Provider Characteristics	3/10
4. Physical Examination: Vital Signs	4.1 Recommended	2/14
6. Physical Examination: Other	6.1 Recommended	1/15
6. Physical Examination: Other	6.2 Order	4/11
7. Functional Status	7.1 Recommended	1/15
7. Functional Status	7.2 Order	4/12
8. Laboratory Test	8.1 Recommended	3/13
8. Laboratory Test	8.5 Intolerance	1/15
8. Laboratory Test	8.6 Adverse Event	2/14
9. Diagnostic Study	9.1 Recommended	2/14
9. Diagnostic Study	9.5 Intolerance	1/14
9. Diagnostic Study	9.6 Adverse Event	2/13
10. Condition/Diagnosis/Problem	10.2 Family History	2/14
10. Condition/Diagnosis/Problem	10.4 Inactive	4/12

CCDE: Devil is in the Details



CCDE Units of Measurement

- Heart rate = Beats per minute
- Respiratory rate = Breaths per minute
- Temperature = Degrees Fahrenheit or Centigrade
- Systolic blood pressure = Millimeter of mercury (mmHg)
- Oxygen saturation =Percent (%)
- Hematocrit = % red blood cells
- Weight = Pound (lb) or Kilograms (kg)
- White blood cell count = Cells per milliliter (Cells/mL)
- Sodium = Milliequivalents per Liter (mEq/L)
- Bicarbonate = Millimoles per liter (mmol/L)
- Potassium Milliequivalents per liter (mEq/L)
- Creatinine = Milligrams per deciliter (mg/dL)
- Glucose = Milligrams per deciliter (mg/dL

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

Hybrid Hospital wide 30-day Readmission Measure

MUST SUBMIT:

13 CCDE

(Vital Signs & Lab Results)

Vital Signs (6)

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

Lab Test Results (7)

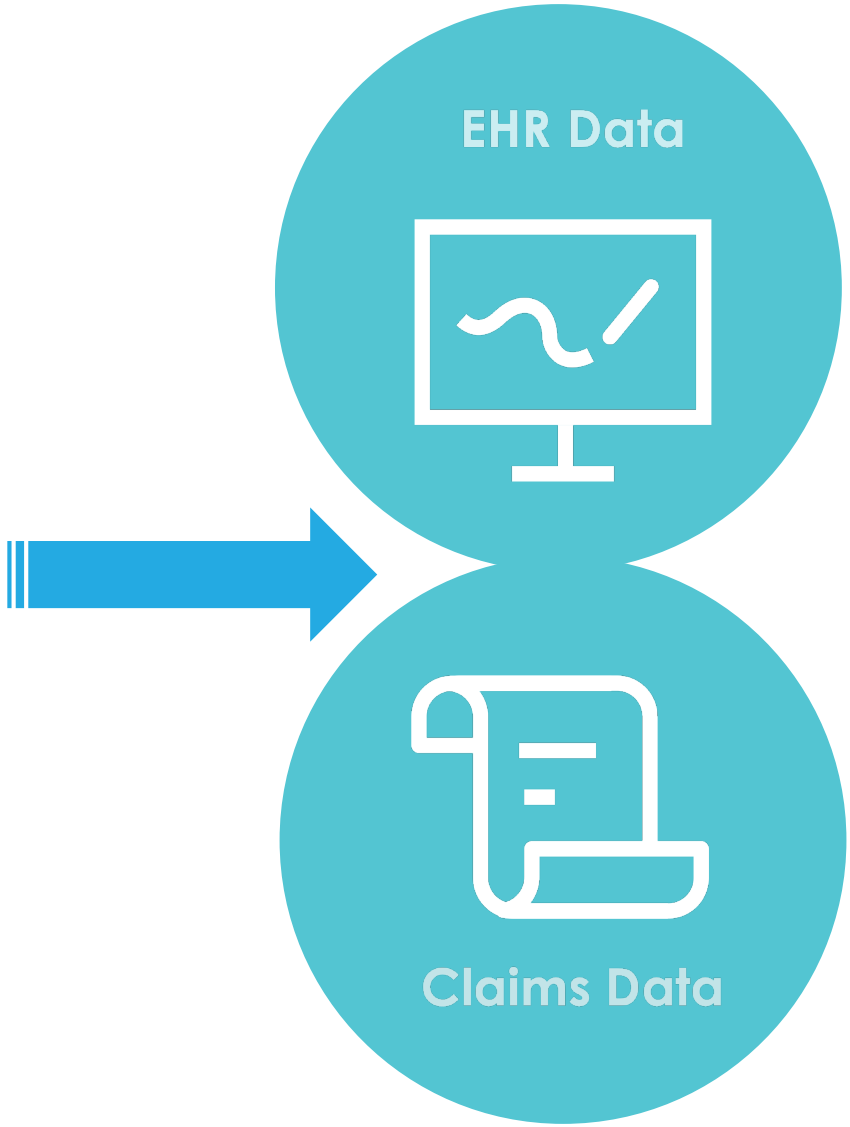
- Hematocrit
- White blood cell count
- Potassium
- Sodium
- Bicarbonate
- Creatinine
- Glucose

Hybrid Hospital wide 30-day Readmission Measure

MUST SUBMIT:

6 Linking Variables

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



CMS Risk Adjusted HWM CCDE

Hospital-wide Mortality (HWM)

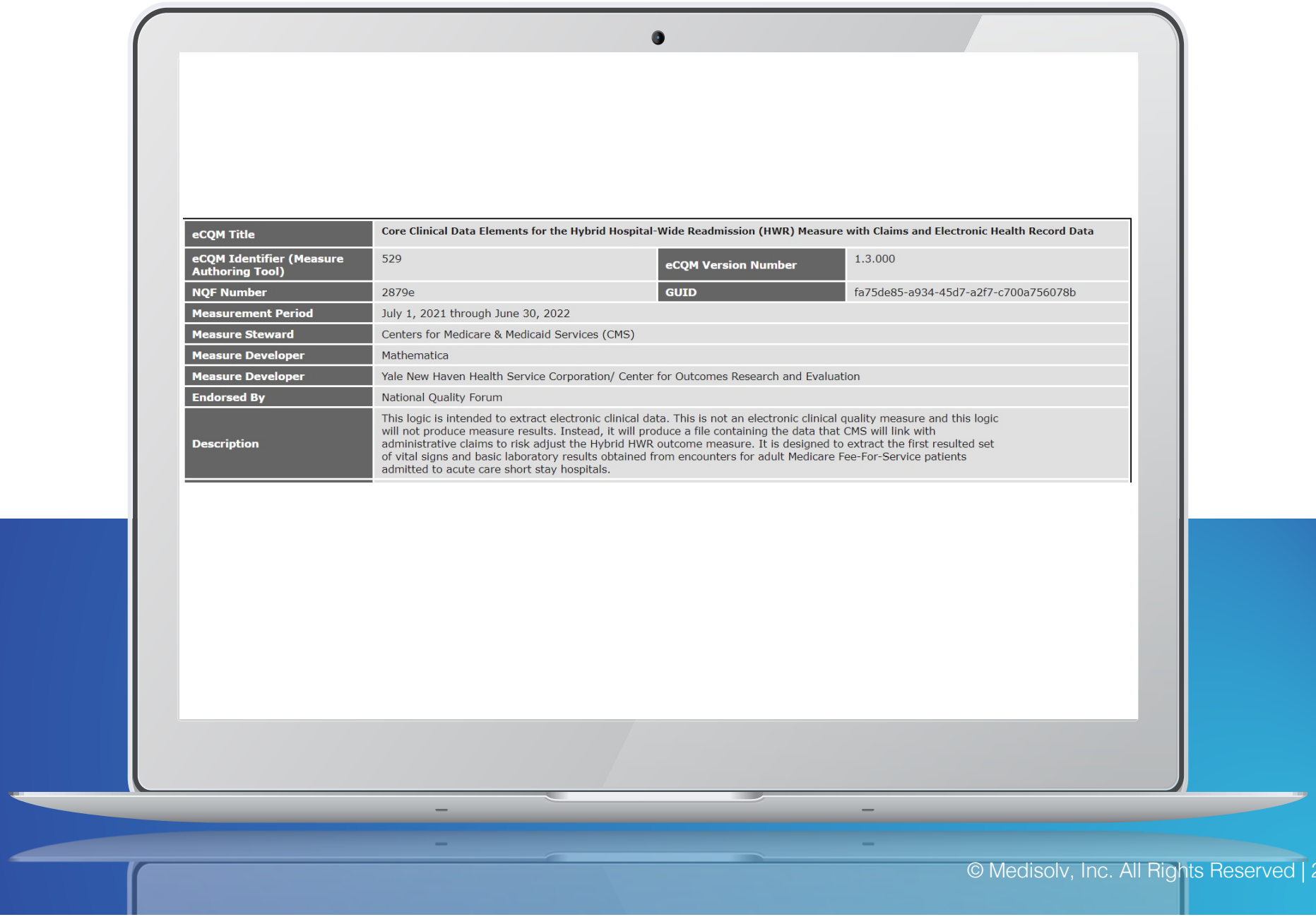
Final CCDE	Units of Measurement	Window for First Captured Values
First-Captured Vital Signs		
Heart Rate	Beats per minute	0-2 hours
Oxygen Saturation	Percent	0-2 hours
Systolic Blood Pressure	mmHg	0-2 hours
Temperature	Degrees Fahrenheit	0-2 hours
First-Captured Laboratory Results		
Bicarbonate	mmol/L	0-24 hours
Creatinine	mg/dL	0-24 hours
Hematocrit‡	g/dL	0-24 hours
Platelet	Count	0-24 hours
Sodium	mmol/L	0-24 hours
WBC Count	10^9 per liter (X10E+09/L)	0-24 hours

Hybrid Measures Data Reporting

Same structure as current Electronic Clinical Quality Measures (eCQMs)

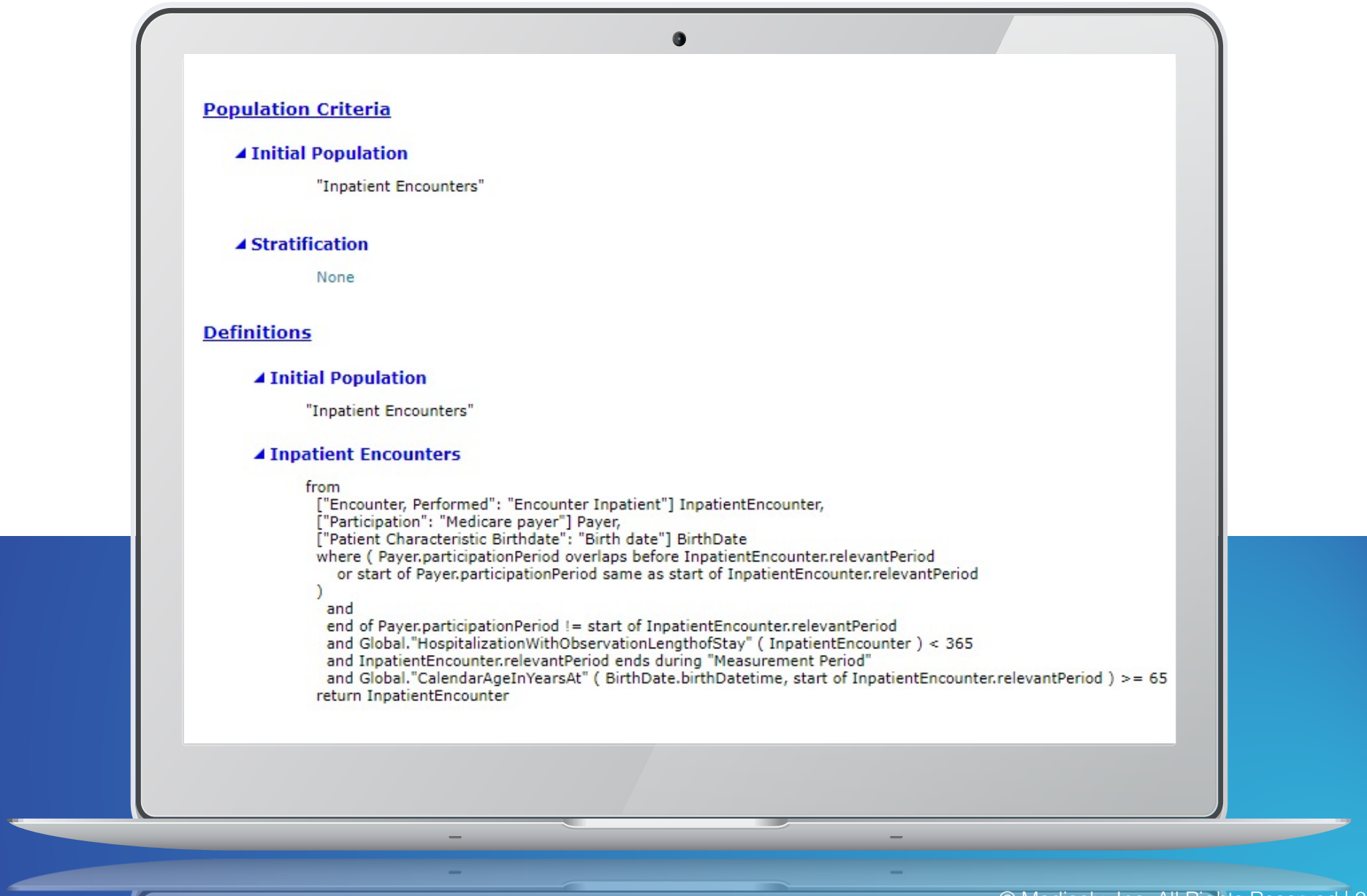
- Description
- Logic
- Populations
- Data elements
- OIDs / Value Sets / Codes → Value Set Authority Center (VSAC)

Measure Authoring Tool (MAT) Output Human Readable



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/Data Elements



Population Criteria

Initial Population

"Inpatient Encounters"

Stratification

None

Definitions

Initial Population

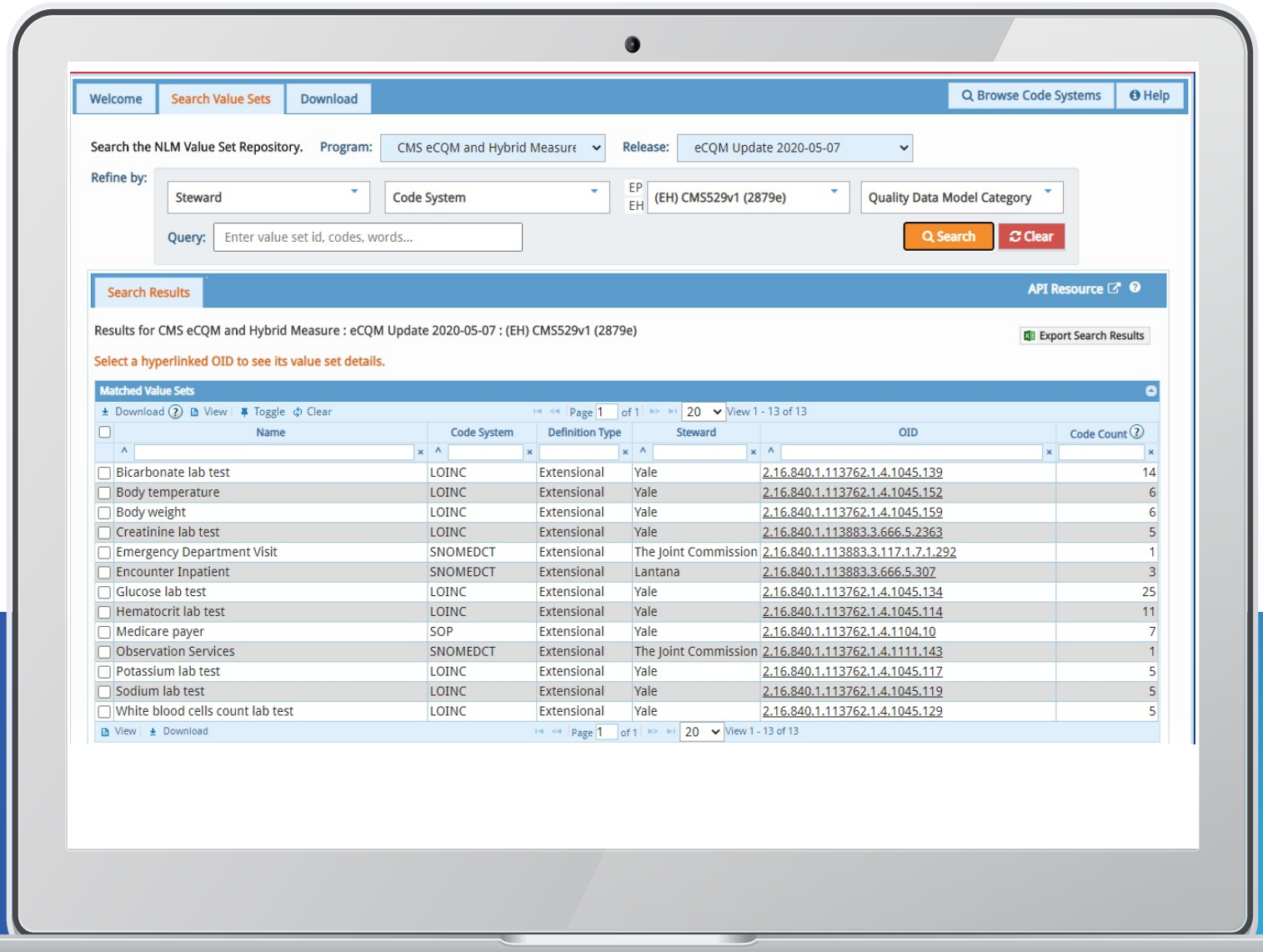
"Inpatient Encounters"

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
```


Specification Value-sets

Value Set Authority Center (VSAC)



Mapping Only

No additional documentation needed

1

Vital Signs

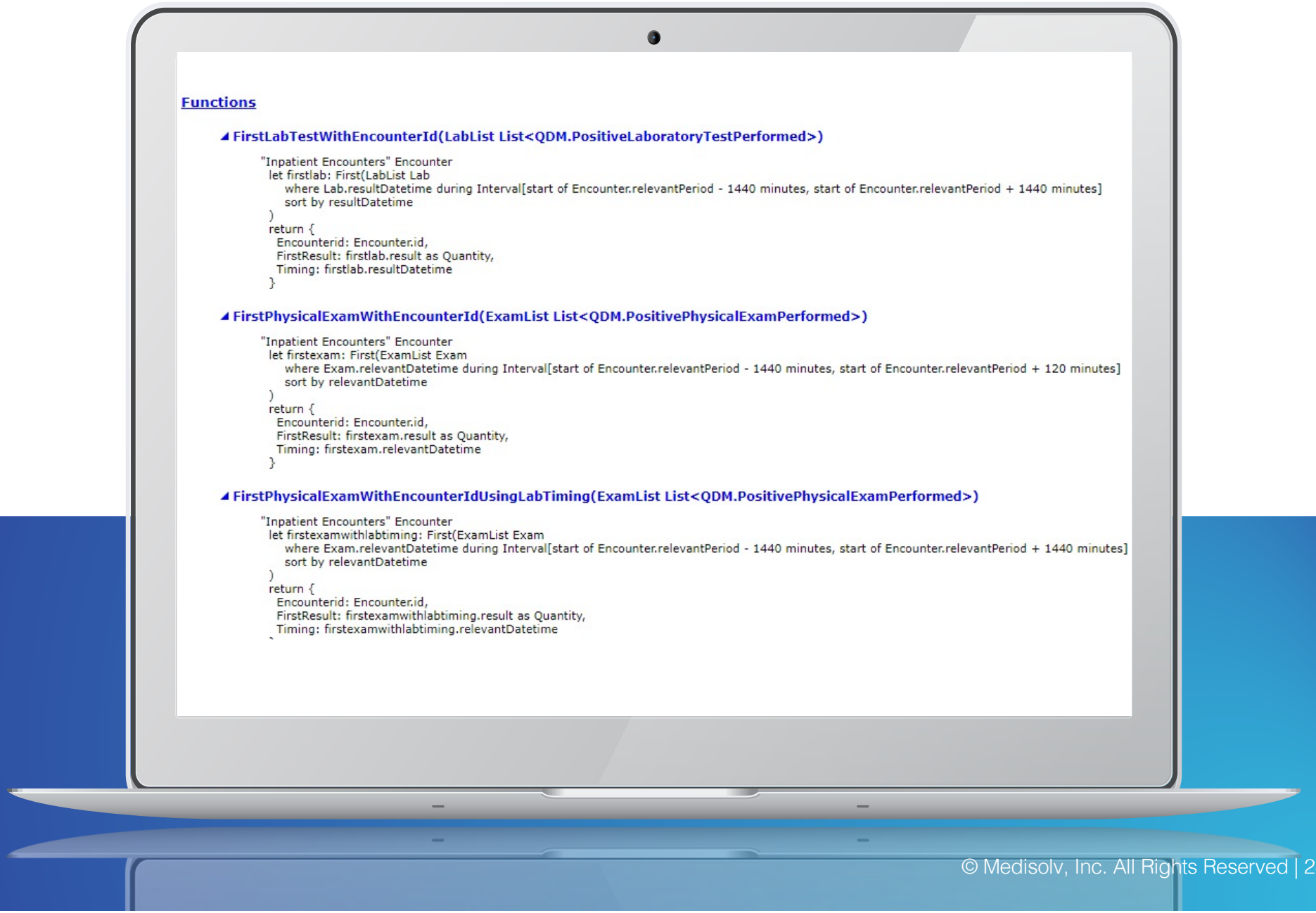
Heart rate
Systolic blood pressure
Respiratory rate
Temperature
Oxygen saturation
Weight

2

Lab Test Results

Hematocrit
White blood cell count
Potassium
Sodium
Bicarbonate
Creatinine
Glucose

Encounters/Vitals/Lab Test Timings



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
```


Submission Process & Preparation

Submission Window: Within 3 Months of Performance period end date

1

Review

Review specification & regulatory changes

2

Track "Values"

Track "Values" throughout the performance period and make necessary changes

3

Submit

Submit QRDA I files via HARP

4

Validate

Validate and confirm submission

5

Document

Document your submission

Hybrid Hospital Specific Report

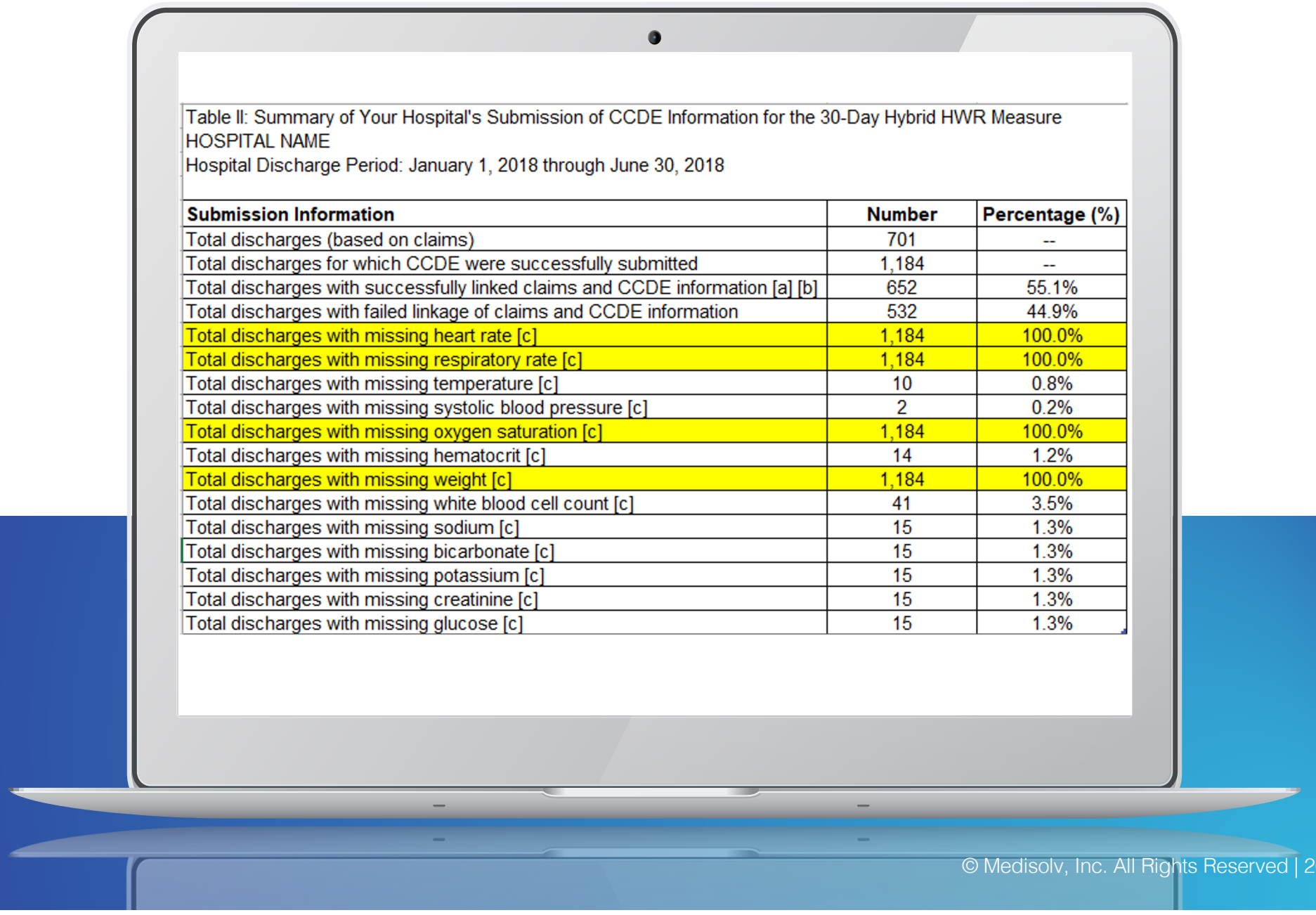


Table II: Summary of Your Hospital's Submission of CCDE Information for the 30-Day Hybrid HWR Measure
HOSPITAL NAME
Hospital Discharge Period: January 1, 2018 through June 30, 2018

Submission Information	Number	Percentage (%)
Total discharges (based on claims)	701	--
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%

Hybrid Hospital Specific Report

6 months later….

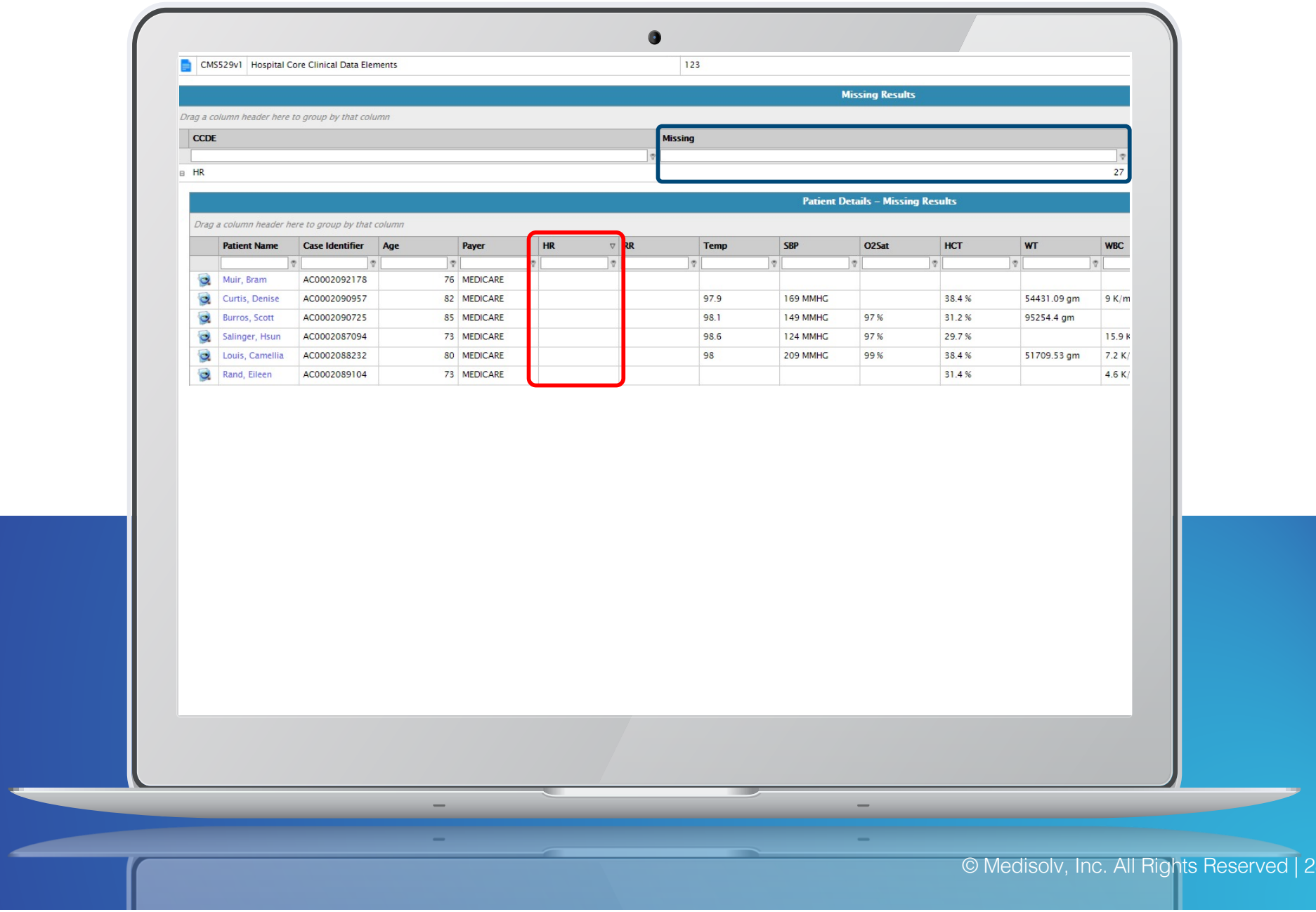
Table I: Your Hospital's Performance on the 30-Day Hybrid HWR Measure
HOSPITAL NAME
Hospital Discharge Period: January 1, 2018 through June 30, 2018

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

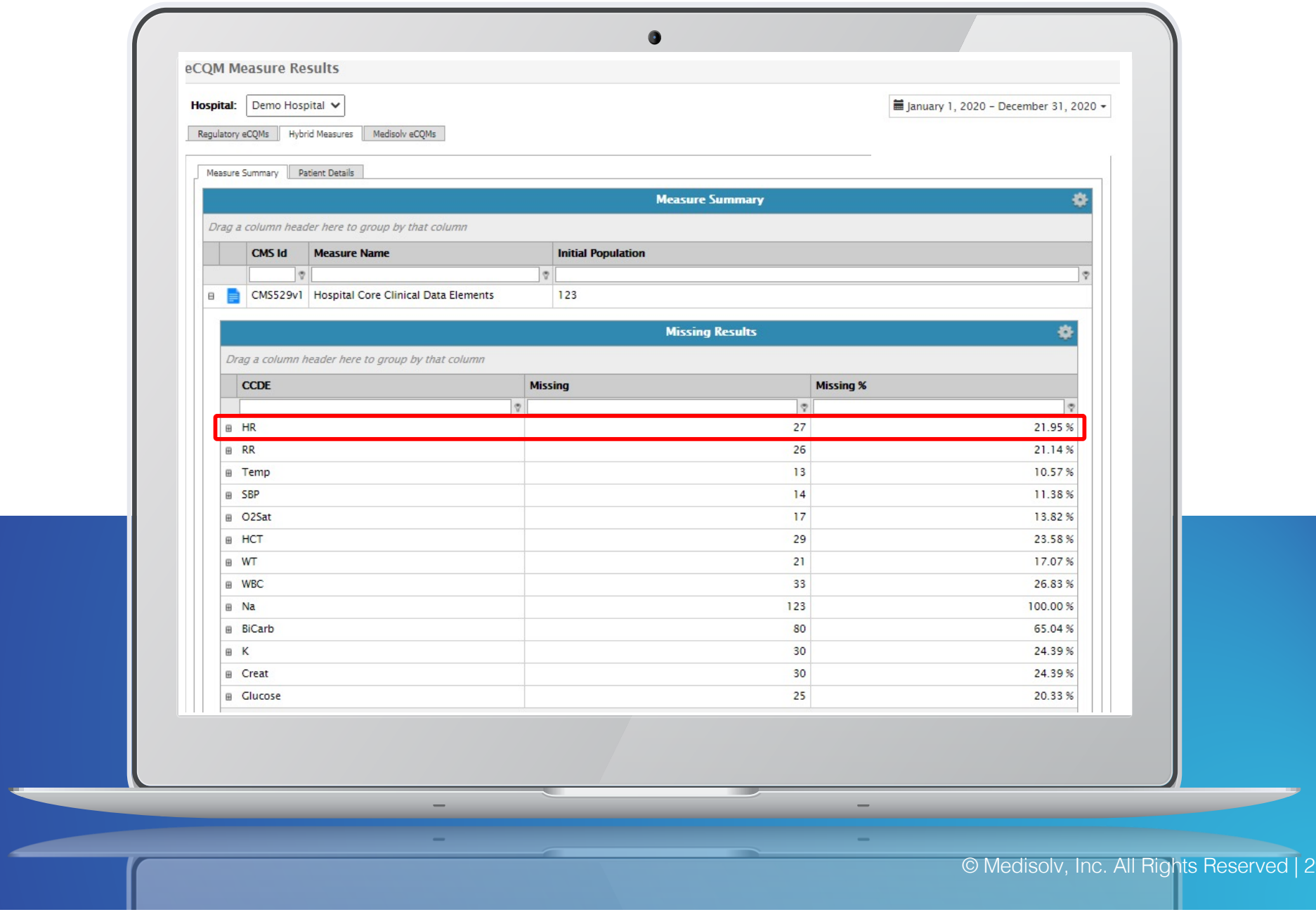
[a] Your Hybrid Risk-Standardized Readmission Rate (H-RSRR) may not accurately reflect your hospital's true performance on the Hybrid HWR measure as it is calculated using (i) only a portion of the data from your hospital, (ii) data from only a small number of hospitals participating in the 2018 voluntary 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.

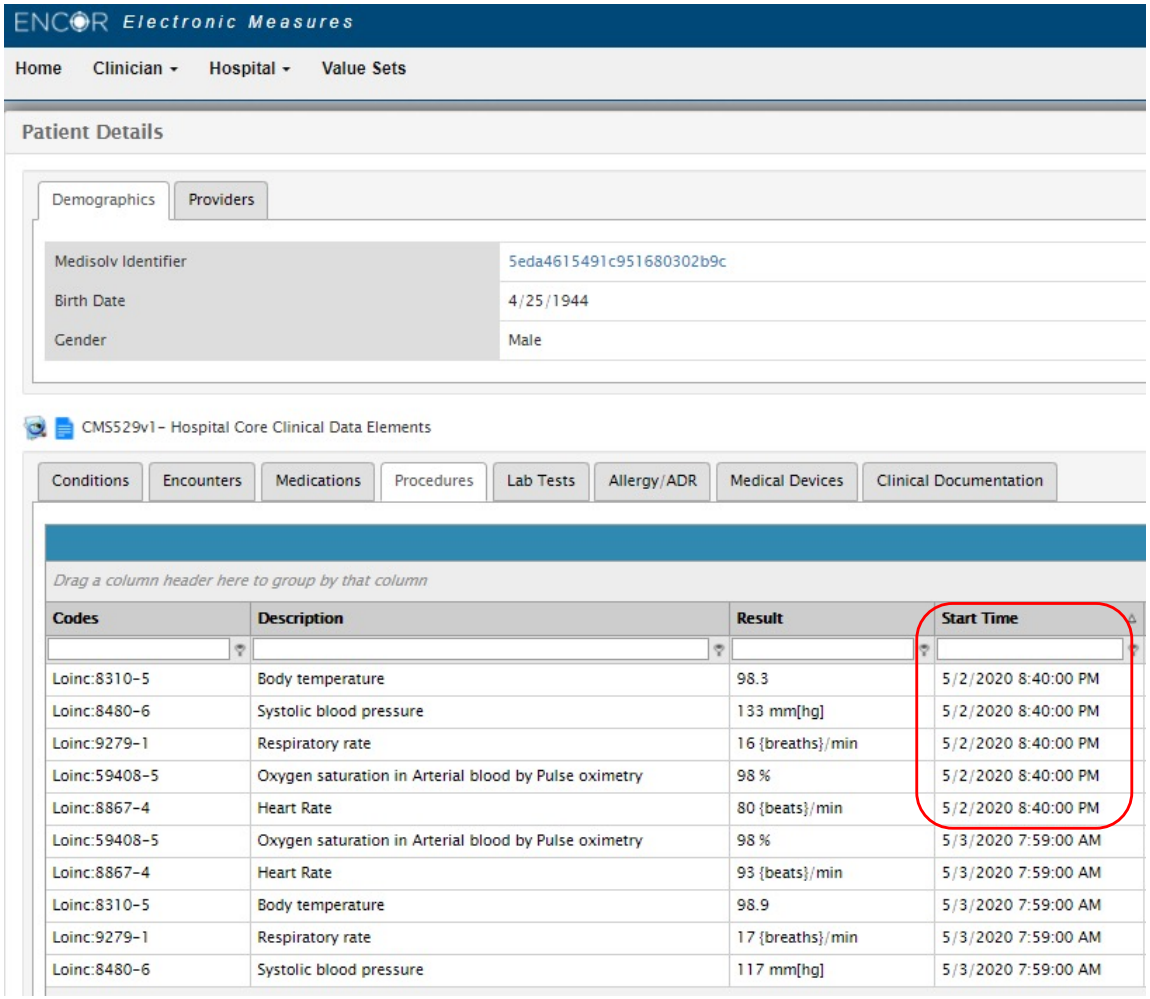
Performance Information	Hybrid HWR Composite [d]
Your hospital's H-RSRR [a]	15.5
Total number of unplanned readmissions at your hospital (numerator) [b]	78
Total number of eligible discharges included in the calculation of the Hybrid HWR measure (denominator) [c]	567
Your hospital's Observed Unplanned Readmission Rate (numerator/denominator)	13.8
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
Total number of eligible discharges for all hospitals participating in the 2018 Voluntary Reporting (denominator) [c]	123,056

Data Completeness = Improvement

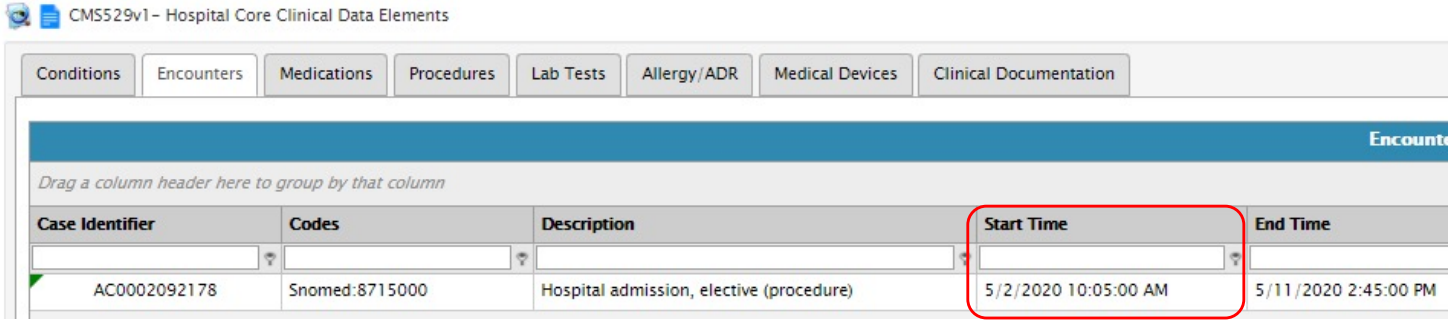


Data Completeness = Improvement





Accurate Date/Time Stamps = Improvement



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 performance year

Confirm all data elements populating reports as expected

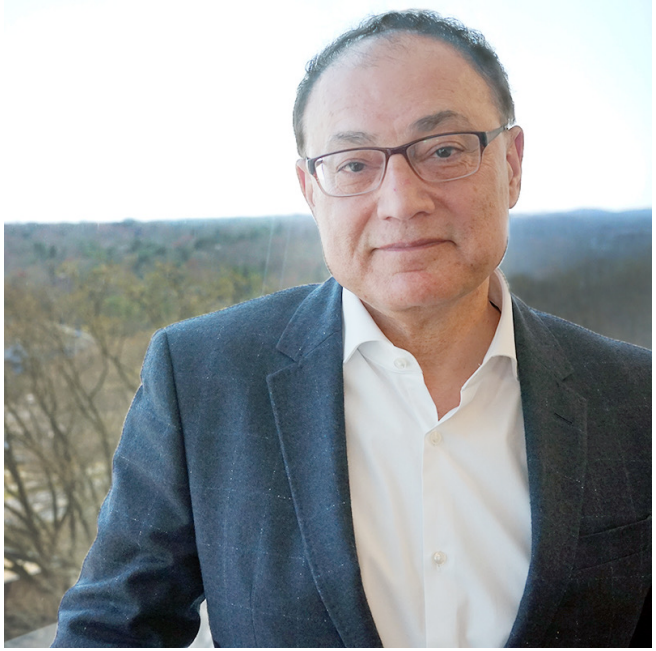
Units of measurement

Medisolv Future Plans

Hybrid Measures

Calculate	Risk Adjustment	Benchmarking
Observed Rates	Medicare & All payer Risk Adjusted Rates	Medisolv clients Quarterly updates

Questions?



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