



# Bonnie eCQM Testing Tool

*Presenter:  
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# Background

Bonnie is an electronic Clinical Quality Measure (eCQM) testing tool that allows users to:

- **Load eCQMs** from the Health Quality Measure Format (HQMF) exported from Measure Authoring Tool (MAT)
- **Build synthetic patients** using data elements defined as part of the measure definition
- **Test new and updated eCQMs** using synthetic patients
- **Explore the behavior and complexity** characteristics of eCQMs

## Background (cont.)

- Prior to Bonnie, the only way to test eCQMs was by hand.
  - eCQMs are **large and complex**.
  - Checking by hand is **time consuming and error prone**.
- Before Bonnie was in use, **381 logic errors** were reported by implementers. **Each eCQM had at least one error**.

# History

- First released April 2014
- Used for 2015, 2016, and 2017 annual update eCQMs
  - **2015**: Over **5,000** synthetic test patient records, **80%** logic coverage
  - **2016**: Over **10,000** synthetic test patient records, **100%** logic coverage
  - **2017**: Over **16,000** synthetic test patient records, **100%** logic coverage
- National Quality Forum (NQF) recommends use of Bonnie to **support NQF eCQM endorsement**

# Standards in Bonnie

- Bonnie uses the following eCQM-related standards:
  - Health Quality Measure Format (HQMF)
  - Quality Data Model (QDM)
  - Quality Reporting Document Architecture (QRDA)
  - Clinical Quality Language (CQL) (future)
- Bonnie is regularly updated to align with the latest standard versions

# Demo

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# Resources

- Public website: <https://bonnie.healthit.gov/>
- User guide:  
[https://bonnie.healthit.gov/resource/Bonnie\\_user\\_guide.pdf](https://bonnie.healthit.gov/resource/Bonnie_user_guide.pdf)
- Git repository:  
<https://github.com/projectacoma/bonnie>

# Backup Slides

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# Screenshot 1

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

MEASURES		UPLOAD	EXPECTED	STATUS	TEST PATIENTS
simple discharged on antithrombotic therapy	CMS522v0	UPDATE	0%	NEW	0 / 0
ADE Prevention and Monitoring: Warfarin Time in Therapeutic Range	CMS179v5	UPDATE	100%	PASS	1 / 1
Discharged on Antithrombotic Therapy	CMS104v5	UPDATE	50%	FAIL	2 / 4
Intensive Care Unit Venous Thromboembolism Prophylaxis	CMS190v5	UPDATE	100%	PASS	3 / 3

# Screenshot 2

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0

**CMS522V0**

MEASURE DETAILS

PATIENT DASHBOARD

**MEASURE DETAILS**



**TEST PATIENTS**



SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity:

0%

NEW

0/0



0

% COVERAGE

Initial Population:



**AND** : Patient Characteristic Birthdate: Birth Date  $\geq$  18 years starts before start of "Measurement Period"

**AND** : Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"

**AND** : Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter

[MEASURE UPLOAD HISTORY](#)

Denominator:



None


Denominator Exclusions:





OR : Occurrence A:

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# Screenshot 3

Complexity: 

0% NEW 0/0  

0 % COVERAGE


[MEASURE UPLOAD HISTORY](#)

**Initial Population:** 


AND : Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"

AND : Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"


AND : Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter

**Denominator:** 


None

**Denominator Exclusions:** 

OR : Occurrence A: Encounter, Performed: Inpatient Encounter ( Discharge Status : Left Against Medical Advice )

**Numerator:** 

AND : Medication, Discharge: Antithrombotic Therapy during Occurrence A: Encounter, Performed: Inpatient Encounter

**Denominator Exceptions:** 

OR : Medication, Discharge: Antithrombotic Therapy (Not Done: Patient Refusal) during Occurrence A: Encounter, Performed: Inpatient Encounter

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# Screenshot 4

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

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Measure Period: 2012 CMS522v0

**CMS522V0**

MEASURE DETAILS

PATIENT DASHBOARD

**MEASURE DETAILS**



**TEST PATIENTS**



SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity:

Initial Population:



**AND** : Patient Characteristic Birthdate: Birth Date  $\geq$  18 years starts before start of "Measurement Period"

**AND** : Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"

**AND** : Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter

Denominator:



None

Denominator Exclusions:



OR : Occurrence



NEW

0/0



% COVERAGE

[MEASURE UPLOAD HISTORY](#)

# Screenshot 5

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0

[Create new patient](#)

## TEST PATIENT



CANCEL

SAVE

LAST NAME\*

Smith

FIRST NAME\*

John

PATIENT DESCRIPTION

Patient is...

DATE OF BIRTH\*

mm/dd/yyyy 8:00 AM

LIVING STATUS

☐ Deceased

RACE

American Indian or Alaska

GENDER

Male

ETHNICITY

Not Hispanic or Latino

PAYER

Other

SIMPLE DISCHARGED ON  
ANTITHROMBOTIC THERAPY

[Show more](#)

EXPECTED VALUE

IPP ☐ DENOM ☐ DENEX ☐  
NUMER ☐ DENEXCEP ☐

ELEMENTS

PATIENT HISTORY

CMS522V0



CONDITIONS



ENCOUNTERS

INITIAL POPULATION:

AND : Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

AND : Occurrence A: Encounter,  
Inpatient Encounter  
Measurement Period

# Screenshot 6

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0

[Create new patient](#)

## TEST PATIENT



CANCEL

SAVE

### LAST NAME\*

Ischemic

### FIRST NAME\*

No Meds

### PATIENT DESCRIPTION

Patient is...

### DATE OF BIRTH\*

mm/dd/yyyy

8:00 AM

### LIVING STATUS

☐ Deceased

### RACE

American Indian or Alaska

### GENDER

Male

### ETHNICITY

Not Hispanic or Latino

### PAYER

Other

### SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

[Show more](#)

### EXPECTED VALUE

IPP ☒ DENOM ☒ DENEX ☐  
NUMER ☐ DENEXCEP ☐

## ELEMENTS

## PATIENT HISTORY

CMS522V0



CONDITIONS



ENCOUNTERS

✕ INITIAL POPULATION:

✕ AND : ✕ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✕ AND : ✕ Occurrence A: Encounter,  
Inpatient Encounter  
Measurement Period"

# Screenshot 7

BONNIE

⚡ Dashboard

🔧 Account

🔗 Help ▾

🚪 Logout

🕒 Measure Period: 2012

📄 CMS522v0

👤 Create new patient

## TEST PATIENT



CANCEL

SAVE

LAST NAME\*

Ischemic

FIRST NAME\*

No Meds

PATIENT DESCRIPTION

Patient is...

SIMPLE DISCHARGED ON  
ANTITHROMBOTIC THERAPY

Show more ▾

DATE OF BIRTH\*

01/01/1970

8:00 AM

LIVING STATUS

☐ Deceased

RACE

American Indian or Alaska

GENDER

Male

ETHNICITY

Not Hispanic or Latino

PAYER

Other

EXPECTED VALUE

IPP ☒ DENOM ☒ DENEX ☐  
NUMER ☐ DENEXCEP ☐

ELEMENTS

PATIENT HISTORY

☰ CMS522V0



CONDITIONS



ENCOUNTERS

✖ INITIAL POPULATION: ▾

✖ AND : ✔ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✖ AND : ✖ Occurrence A: Encounter,  
Inpatient Encounter  
Measurement Period"

# Screenshot 8

ELEMENTS

CONDITIONS

ENCOUNTERS

MEDICATIONS

PATIENT HISTORY

CMS522V0

✖ INITIAL POPULATION:

✖ AND : ✔ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✖ AND : ✖ Occurrence A: Encounter,  
Performed: Inpatient Encounter  
during "Measurement Period"

✖ AND : ✖ Diagnosis: Ischemic  
Stroke starts during ✖ Occurrence A:  
Encounter, Performed: Inpatient  
Encounter

DENOMINATOR:

None

DENOMINATOR EXCLUSIONS:

OR : Occurrence A: Encounter,  
Performed: Inpatient Encounter (  
Discharge Status : Left Against  
Medical Advice )

NUMERATOR:

AND : Medication, Discharge:  
Antithrombotic Therapy during  
Occurrence A: Encounter, Performed:  
Encounter

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## Screenshot 9

The screenshot displays a clinical data tool interface. On the left, the 'ELEMENTS' sidebar includes 'CONDITIONS', 'Diagnosis Ischemic Stroke', 'ENCOUN...', and 'MEDICAT...'. The main 'PATIENT HISTORY' section shows two entries: an 'ENCOUNTER' performed inpatient on 03/12/2012, and a 'DIAGNOSIS' of 'Ischemic Stroke' on the same date. An orange arrow points to the encounter date, and a purple arrow points from the diagnosis entry to the 'DENOMINATOR' section. The right panel shows the 'CMS522V0' measure configuration. The 'INITIAL POPULATION' section contains three criteria: 'Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"', 'Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"', and 'Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter'. The 'DENOMINATOR' is set to 'None'. The 'DENOMINATOR EXCLUSIONS' section includes 'Occurrence A: Encounter, Performed: Inpatient Encounter ( Discharge Status : Left Against Medical Advice )'. The 'NUMERATOR' section includes 'Medication, Discharge: Antithrombotic Therapy during Occurrence A: Encounter, Performed: Encounter'.

**ELEMENTS**

- CONDITIONS
- Diagnosis Ischemic Stroke
- ENCOUN...>
- MEDICAT...>

**PATIENT HISTORY**

ENCOUNTER	DATE
Performed: Inpatient Encounter	03/12/2012 - 03/12/2012

DIAGNOSIS	DATE
Ischemic Stroke	03/12/2012 - 03/12/2012

**CMS522V0**

✓ **INITIAL POPULATION:**

- ✓ AND : ✓ Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"
- ✓ AND : ✓ Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"
- ✓ AND : ✓ Diagnosis: Ischemic Stroke starts during ✓ Occurrence A: Encounter, Performed: Inpatient Encounter

✓ **DENOMINATOR:**

None

✗ **DENOMINATOR EXCLUSIONS:**

- ✗ OR : ✗ Occurrence A: Encounter, Performed: Inpatient Encounter ( Discharge Status : Left Against Medical Advice )

✗ **NUMERATOR:**

- ✗ AND : ✗ Medication, Discharge: Antithrombotic Therapy during ✗ Occurrence A: Encounter, Performed: Encounter

# Screenshot 10

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0

[Create new patient](#)

## TEST PATIENT



CANCEL

SAVE

### LAST NAME\*

Ischemic

### FIRST NAME\*

No Meds

### PATIENT DESCRIPTION

Patient is...

### DATE OF BIRTH\*

01/01/1970

8:00 AM

### LIVING STATUS

☐ Deceased

### RACE

American Indian or Alaska

### GENDER

Male

### ETHNICITY

Not Hispanic or Latino

### PAYER

Other

SIMPLE DISCHARGED ON  
ANTITHROMBOTIC THERAPY

[Show more](#)

### EXPECTED VALUE

IPP ☒ DENOM ☒ DENEX ☐

NUMER ☐ DENEXCEP ☐

## ELEMENTS

## PATIENT HISTORY

CMS522V0



CONDITIONS

Diagnosis

Ischemic

Stroke



### ENCOUNTER

### DATE

Performed: Inpatient  
Encounter

03/12/2012 – 03/12/2012



### DIAGNOSIS

### DATE

✓ INITIAL POPULATION:

✓ AND : ✓ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✓ AND : ✓ Occurrence A: Encounter,  
patient Encounter  
Measurement Period"

# Screenshot 11

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0

**CMS522V0**

[MEASURE DETAILS](#)

[PATIENT DASHBOARD](#)

**MEASURE DETAILS**



**TEST PATIENTS**



SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity:



PASS

1 / 1



% COVERAGE

Initial Population:

AND : Patient Characteristic Birthdate: Birth Date  $\geq$  18 years starts before start of "Measurement Period"

AND : Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"

AND : Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter

[MEASURE UPLOAD HISTORY](#)

Ischemic No Meds

PASS



Denominator:

None

Denominator Exclusions:

OR : Occurrence A: E

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# Screenshot 12

## SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity: 



PASS

1 / 1



% COVERAGE

[SHOW COVERAGE](#)

[MEASURE UPLOAD HISTORY](#)

 Ischemic No Meds

PASS 

✓ Initial Population:

✓ AND : ✓ Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"

✓ AND : ✓ Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"

✓ AND : ✓ Diagnosis: Ischemic Stroke starts during ✓ Occurrence A: Encounter, Performed: Inpatient Encounter

✓ Denominator:

None

✗ Denominator Exclusions:

✗ OR : ✗ Occurrence A: Encounter, Performed: Inpatient Encounter ( Discharge Status : Left Against Medical Advice )

✗ Numerator:

✗ AND : ✗ Medication, Discharge: Antithrombotic Therapy during ✗ Occurrence A: Encounter, Performed: Inpatient Encounter

✗ Denominator Exceptions:

✗ OR : ✗ Medication, Discharge: Antithrombotic Therapy during ✗ Occurrence A: Encounter, Performed: Inpatient Encounter

Population	Expected	Actual
✓ IPP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
✓ DENOM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
✓ DENEX	<input type="checkbox"/>	<input type="checkbox"/>
✓ NUMER	<input type="checkbox"/>	<input type="checkbox"/>
✓ DENEXCEP	<input type="checkbox"/>	<input type="checkbox"/>

 [CLONE](#)  [SHARE](#) 

# Screenshot 13

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0

Ischemic No Meds (1)

## TEST PATIENT



CANCEL

SAVE

### LAST NAME\*

Ischemic

### FIRST NAME\*

No Meds (1)

### PATIENT DESCRIPTION

Patient is...

### SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

[Show more](#)

### DATE OF BIRTH\*

01/01/1970 8:00 AM

### LIVING STATUS

☐ Deceased

### RACE

American Indian or Alaska

### GENDER

Male

### ETHNICITY

Not Hispanic or Latino

### PAYER

Other

### EXPECTED VALUE

IPP ☒ DENOM ☒ DENEX ☐

NUMER ☐ DENEXCEP ☐

## ELEMENTS

## PATIENT HISTORY

CMS522V0



CONDITIONS



ENCOUNTERS



### ENCOUNTER

### DATE

Performed: Inpatient  
Encounter

03/12/2012 - 03/12/2012



### DIAGNOSIS

### DATE

### ✓ INITIAL POPULATION:

✓ AND : ✓ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✓ AND : ✓ Occurrence A: Encounter,  
Inpatient Encounter  
Measurement Period"

# Screenshot 14

BONNIE

Dashboard

Account

Help

Logout

Measure Period: 2012

CMS522v0

Ischemic No Meds (1)

## TEST PATIENT



CANCEL

SAVE

### LAST NAME\*

Ischemic

### FIRST NAME\*

With Meds

### PATIENT DESCRIPTION

Patient is...

### DATE OF BIRTH\*

01/01/1970 8:00 AM

### LIVING STATUS

☐ Deceased

### RACE

American Indian or Alaska

### GENDER

Male

### ETHNICITY

Not Hispanic or Latino

### PAYER

Other

### SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Show more

### EXPECTED VALUE

IPP ☒ DENOM ☒ DENEX ☐  
NUMER ☒ DENEXCEP ☐

## ELEMENTS

## PATIENT HISTORY

CMS522V0



CONDITIONS



ENCOUNTERS



### ENCOUNTER

DATE

Performed: Inpatient  
Encounter

03/12/2012 - 03/12/2012



### DIAGNOSIS

DATE

✓ INITIAL POPULATION:

✓ AND : ✓ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"  
✓ AND : ✓ Occurrence A: Encounter,  
Inpatient Encounter  
Measurement Period"

# Screenshot 15

Font

Paragraph

ELEMENTS

CONDITIONS

ENCOUNTERS

MEDICATIONS

Discharge  
Antithrombotic  
Therapy

PATIENT HISTORY

ENCOUNTER

DATE

Performed: Inpatient  
Encounter

03/12/2012 – 03/12/2012

DIAGNOSIS

DATE

Ischemic Stroke

03/12/2012 – 03/12/2012

MEDICATION

DATE

Discharge: Antithrombotic  
Therapy

03/12/2012 – 03/12/2012

CMS522V0

✓ INITIAL POPULATION:

✓ AND : ✓ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✓ AND : ✓ Occurrence A: Encounter,  
Performed: Inpatient Encounter  
during "Measurement Period"

✓ AND : ✓ Diagnosis: Ischemic  
Stroke starts during ✓ Occurrence A:  
Encounter, Performed: Inpatient  
Encounter

✓ DENOMINATOR:

None

✗ DENOMINATOR EXCLUSIONS:

✗ OR : ✗ Occurrence A: Encounter,  
Performed: Inpatient Encounter (   
Discharge Status : Left Against  
Medical Advice )

✓ NUMERATOR:

✓ AND : ✓ Medication, Discharge:  
Antithrombotic Therapy during ✓  
Occurrence A: Encounter, Performed:  
Encounter

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# Screenshot 16

BONNIE

[Dashboard](#) [Account](#) [Help](#) [Logout](#)

Measure Period: 2012 CMS522v0 Ischemic No Meds (1)

TEST PATIENT

LAST NAME\*

Ischemic

FIRST NAME\*

With Meds

PATIENT DESCRIPTION

Patient is...

DATE OF BIRTH\*

01/01/1970 8:00 AM

LIVING STATUS

☐ Deceased

RACE

American Indian or Alaska

GENDER

Male

ETHNICITY

Not Hispanic or Latino

PAYER

Other

CANCEL

SAVE

SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Show more

EXPECTED VALUE

IPP ☒ DENOM ☒ DENEX ☐  
NUMER ☒ DENEXCEP ☐

ELEMENTS

PATIENT HISTORY

CMS522V0

CONDITI...>

ENCOUN...>

MEDICATIONS

ENCOUNTER

DATE

Performed: Inpatient Encounter

03/12/2012 - 03/12/2012

DIAGNOSIS

DATE

✓ INITIAL POPULATION:

✓ AND : ✓ Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"

✓ AND : ✓ Occurrence A: Encounter, Inpatient Encounter

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# Screenshot 17

BONNIE

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[Logout](#)

Measure Period: 2012 CMS522v0

**CMS522V0**

MEASURE DETAILS

PATIENT DASHBOARD

**MEASURE DETAILS**



**TEST PATIENTS**



SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity:



PASS

2 / 2



% COVERAGE

Initial Population:



AND : Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"

AND : Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"

AND : Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter

Denominator:



None

Denominator Exclusions:



MEASURE UPLOAD HISTORY



Ischemic No Meds

PASS >



Ischemic With Meds

PASS >



OR : Occurrence A: Encounter, Performed: Inpatient Encounter

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# Screenshot 18

SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity: 



PASS



2 / 2



% COVERAGE

 SHOW COVERAGE


 MEASURE UPLOAD HISTORY

  Ischemic No Meds **PASS** >


  Ischemic With Meds **PASS** ✓

Population	Expected	Actual
✓ IPP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
✓ DENOM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
✓ DENEX	<input type="checkbox"/>	<input type="checkbox"/>
✓ NUMER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
✓ DENEXCEP	<input type="checkbox"/>	<input type="checkbox"/>


 **CLONE**  **SHARE** +

✓ Initial Population: 


- ✓ AND : ✓ Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"
- ✓ AND : ✓ Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"
- ✓ AND : ✓ Diagnosis: Ischemic Stroke starts during ✓ Occurrence A: Encounter, Performed: Inpatient Encounter

✓ Denominator: 

None

✗ Denominator Exclusions: 

- ✗ OR : ✗ Occurrence A: Encounter, Performed: Inpatient Encounter ( Discharge Status : Left Against Medical Advice )

✓ Numerator: 

- ✓ AND : ✓ Medication, Discharge: Antithrombotic Therapy during ✓ Occurrence A: Encounter, Performed: Inpatient Encounter

Denominator Exceptions: 

OR : Medication, Discharge: Antithrombotic Therapy during Occurrence A: Encounter, Performed: Inpatient Encounter

# Screenshot 19

## PATIENT

### LAST NAME\*

Ischemic

### FIRST NAME\*

With Meds

### PATIENT DESCRIPTION

Patient is...

### DATE OF BIRTH\*

01/01/1970

8:00 AM

### LIVING STATUS

☐ Deceased

### RACE

American Indian or Alaska

### GENDER

Male

### ETHNICITY

Not Hispanic or Latino

### PAYER

Other

### SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

[Show more](#)

### EXPECTED VALUE

IPP ☒

DENOM ☒

DENEX ☐

NUMER ☒

DENEXCEP ☐



## ELEMENTS

## PATIENT HISTORY

## CMS522V0



CONDITIONS



ENCOUNTERS



### ENCOUNTER

### DATE

Performed: Inpatient  
Encounter

03/12/2012 – 03/12/2012



### DIAGNOSIS

### DATE

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### ✓ INITIAL POPULATION:

✓ AND : ✓ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✓ AND : ✓ Occurrence A: Encounter,  
Inpatient Encounter  
Measurement Period"

# Screenshot 20

BONNIE

[Dashboard](#)

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Measure Period: 2012

CMS522v0

Ischemic With Meds

## TEST PATIENT



CANCEL

SAVE

LAST NAME\*

Ischemic

FIRST NAME\*

With Meds

PATIENT DESCRIPTION

Patient is...

DATE OF BIRTH\*

01/01/1970

8:00 AM

LIVING STATUS

☐ Deceased

RACE

American Indian or Alaska

GENDER

Male

ETHNICITY

Not Hispanic or Latino

PAYER

Other

SIMPLE DISCHARGED ON  
ANTITHROMBOTIC THERAPY

[Show more](#)

EXPECTED VALUE

IPP ☒ DENOM ☒ DENEX ☐  
NUMER ☐ DENEXCEP ☐

ELEMENTS

PATIENT HISTORY

CMS522V0



CONDITIONS



ENCOUNTERS



ENCOUNTER

DATE

Performed: Inpatient  
Encounter

03/12/2012 - 03/12/2012



DIAGNOSIS

DATE

✓ INITIAL POPULATION:

✓ AND : ✓ Patient Characteristic  
Birthdate: Birth Date >= 18 years  
starts before start of "Measurement  
Period"

✓ AND : ✓ Occurrence A: Encounter,  
Inpatient Encounter  
during "Measurement Period"

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# Screenshot 21

BONNIE

[Dashboard](#)

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[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0

**CMS522V0**

MEASURE DETAILS

PATIENT DASHBOARD

**MEASURE DETAILS**



**TEST PATIENTS**



SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity:



FAIL

1 / 2



% COVERAGE

Initial Population:



AND : Patient Characteristic Birthdate: Birth Date >= 18 years starts before start of "Measurement Period"

AND : Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"

AND : Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter



MEASURE UPLOAD HISTORY

Ischemic With Meds

FAIL



Ischemic No Meds

PASS



Denominator:



None

Denominator Exclusions:



OR : Occurrence A: E

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## Screenshot 22

### MEASURE DETAILS

SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity: ✓

✓ Initial Population: ▼

- ✓ AND : ✓ Patient Characteristic Birthdate: Birth Date  $\geq$  18 years starts before start of "Measurement Period"
- ✓ AND : ✓ Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"
- ✓ AND : ✓ Diagnosis: Ischemic Stroke starts during ✓ Occurrence A: Encounter, Performed: Inpatient Encounter

✓ Denominator: ▼

None

✗ Denominator Exclusions: ▼

- ✗ OR : ✗ Occurrence A: Encounter, Performed: Inpatient Encounter ( Discharge Status : Left Against Medical Advice )

✓ Numerator: ▼

- ✓ AND : ✓ Medication, Discharge: Antithrombotic Therapy during ✓ Occurrence A: Encounter, Performed: Inpatient Encounter

Denominator Exclusions:

### TEST PATIENTS

50% **FAIL** 1 / 2 +

71 % COVERAGE

[SHOW COVERAGE](#)

[MEASURE UPLOAD HISTORY](#)

✗ Ischemic With Meds **FAIL** ▼

Population	Expected	Actual
<span>✓</span> IPP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<span>✓</span> DENOM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<span>✓</span> DENEX	<input type="checkbox"/>	<input type="checkbox"/>
<span>✗</span> NUMER	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<span>✓</span> DENEXCEP	<input type="checkbox"/>	<input type="checkbox"/>

✎ **CLONE** ⊖ **SHARE** +

✓ Ischemic No **PASS** >

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## Screenshot 23

BONNIE

[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

CMS522v0



**CMS522V0**

MEASURE DETAILS

PATIENT DASHBOARD

**MEASURE DETAILS**



**TEST PATIENTS**



SIMPLE DISCHARGED ON ANTITHROMBOTIC THERAPY

Complexity:

Initial Population:



AND : Patient Characteristic Birthdate: Birth Date  $\geq$  18 years starts before start of "Measurement Period"

AND : Occurrence A: Encounter, Performed: Inpatient Encounter during "Measurement Period"

AND : Diagnosis: Ischemic Stroke starts during Occurrence A: Encounter, Performed: Inpatient Encounter

Denominator:



None

Denominator Exclusions:



OR : Occurrence A: E

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Left: Assistant Medical Director



50%

FAIL

1 / 2



71

% COVERAGE

[MEASURE UPLOAD HISTORY](#)

Ischemic With Meds

FAIL >

Ischemic No Meds

PASS >

## Screenshot 24

BONNIE















[Dashboard](#)

[Account](#)

[Help](#)

[Logout](#)

Measure Period: 2012

 MEASURES		 UPLOAD	EXPECTED	STATUS	TEST PATIENTS
ADE Prevention and Monitoring: Warfarin Time in Therapeutic Range	CMS179v5	 UPDATE	 100%	PASS	1 / 1 
Discharged on Antithrombotic Therapy	CMS104v5	 UPDATE	 50%	FAIL	2 / 4 
Intensive Care Unit Venous Thromboembolism Prophylaxis	CMS190v5	 UPDATE	 100%	PASS	3 / 3 
simple discharged on antithrombotic therapy	CMS522v0	 UPDATE	 50%	FAIL	1 / 2 