

# MEANINGFUL USE INTERACTIVE CHARTS



## *Reference Guide for Healthcare Providers to Secure Stimulus*

4010, Moorpark Avenue, #205,  
San Jose, California 95117  
USA  
Tel: +1-602-842-2738  
Email: [services@visolve.com](mailto:services@visolve.com)

[www.visolve.com](http://www.visolve.com)

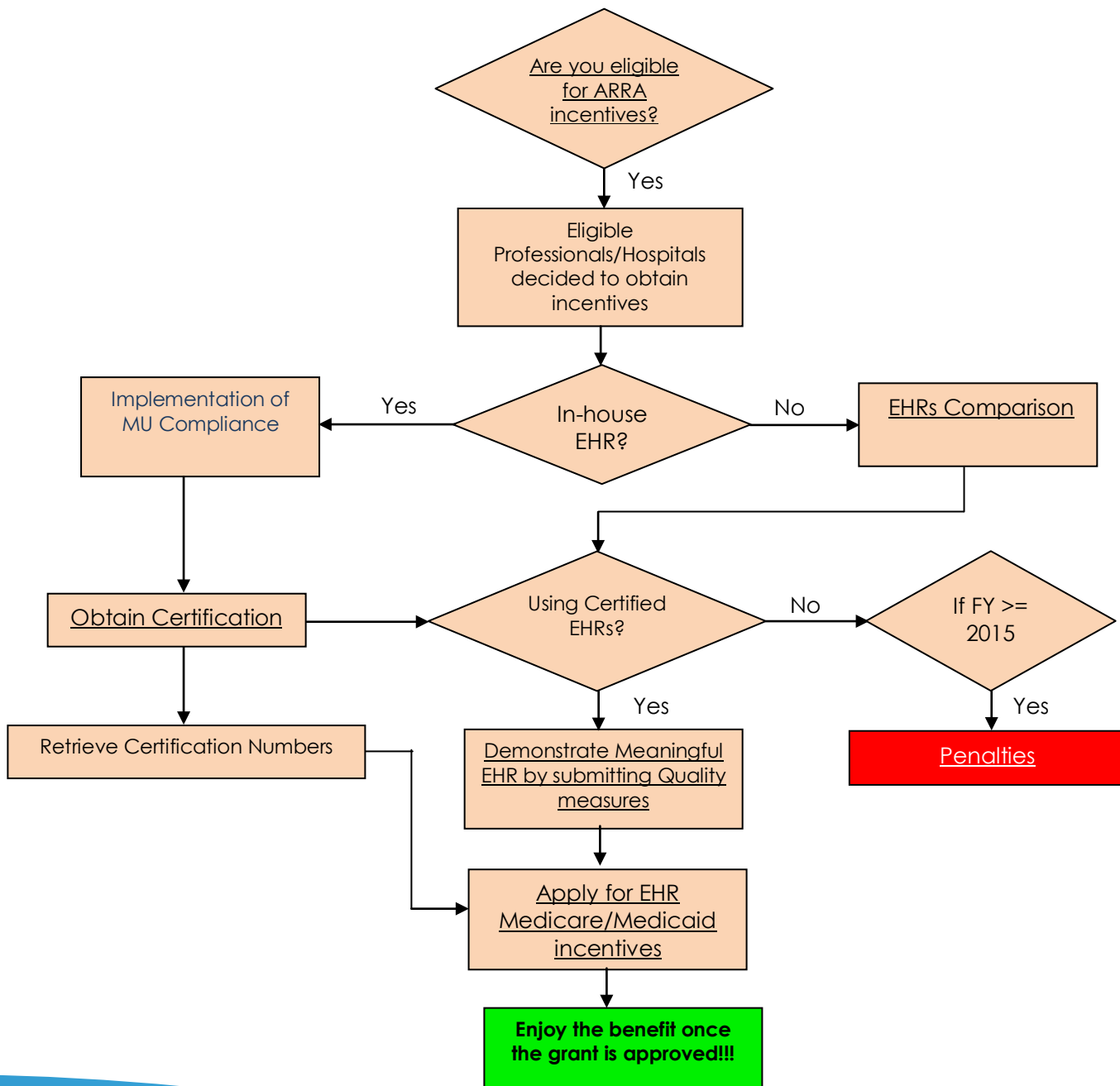


VISOLVE

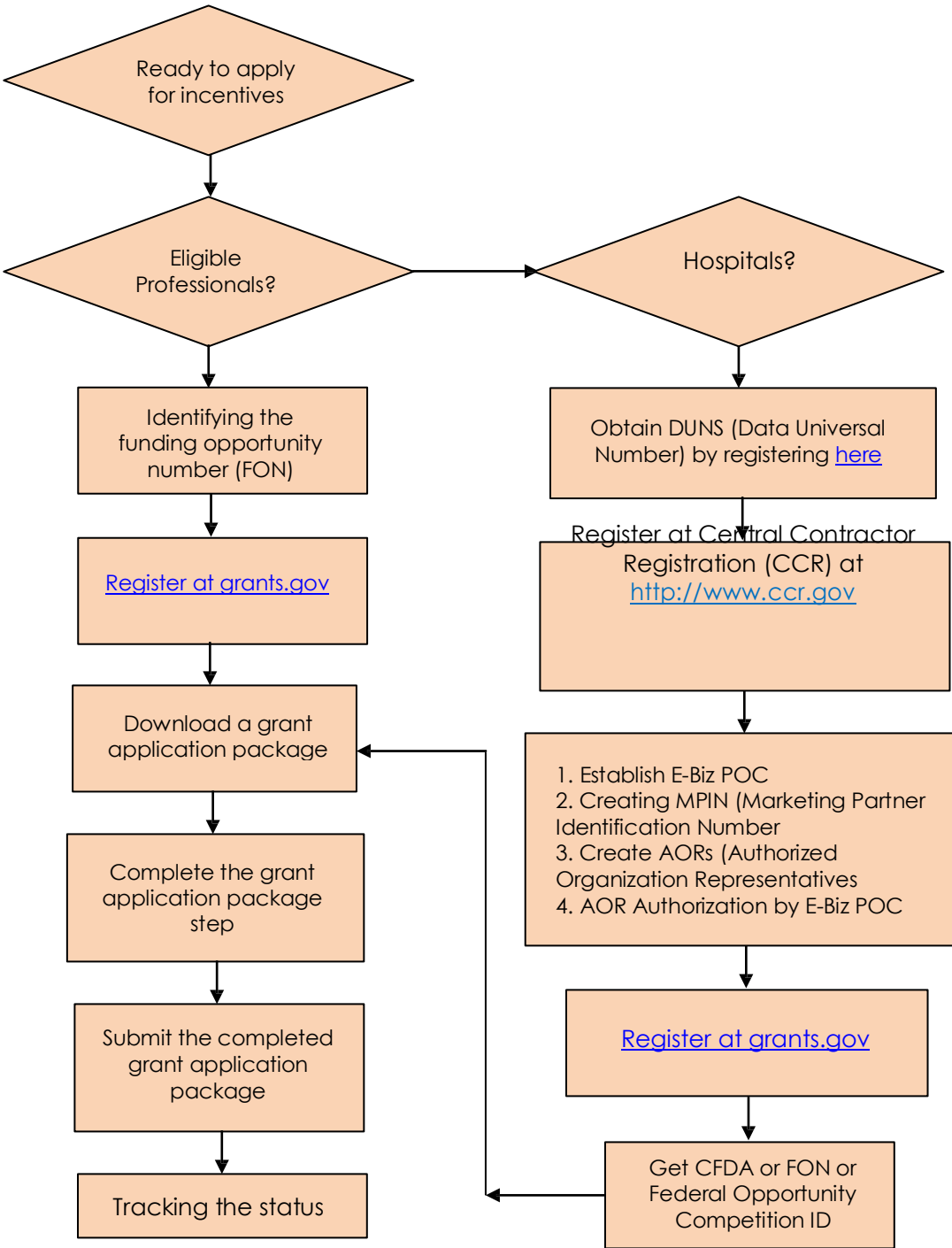
OPEN SOURCE SOLUTIONS

# MEANINGFUL USE INTERACTIVE CHARTS

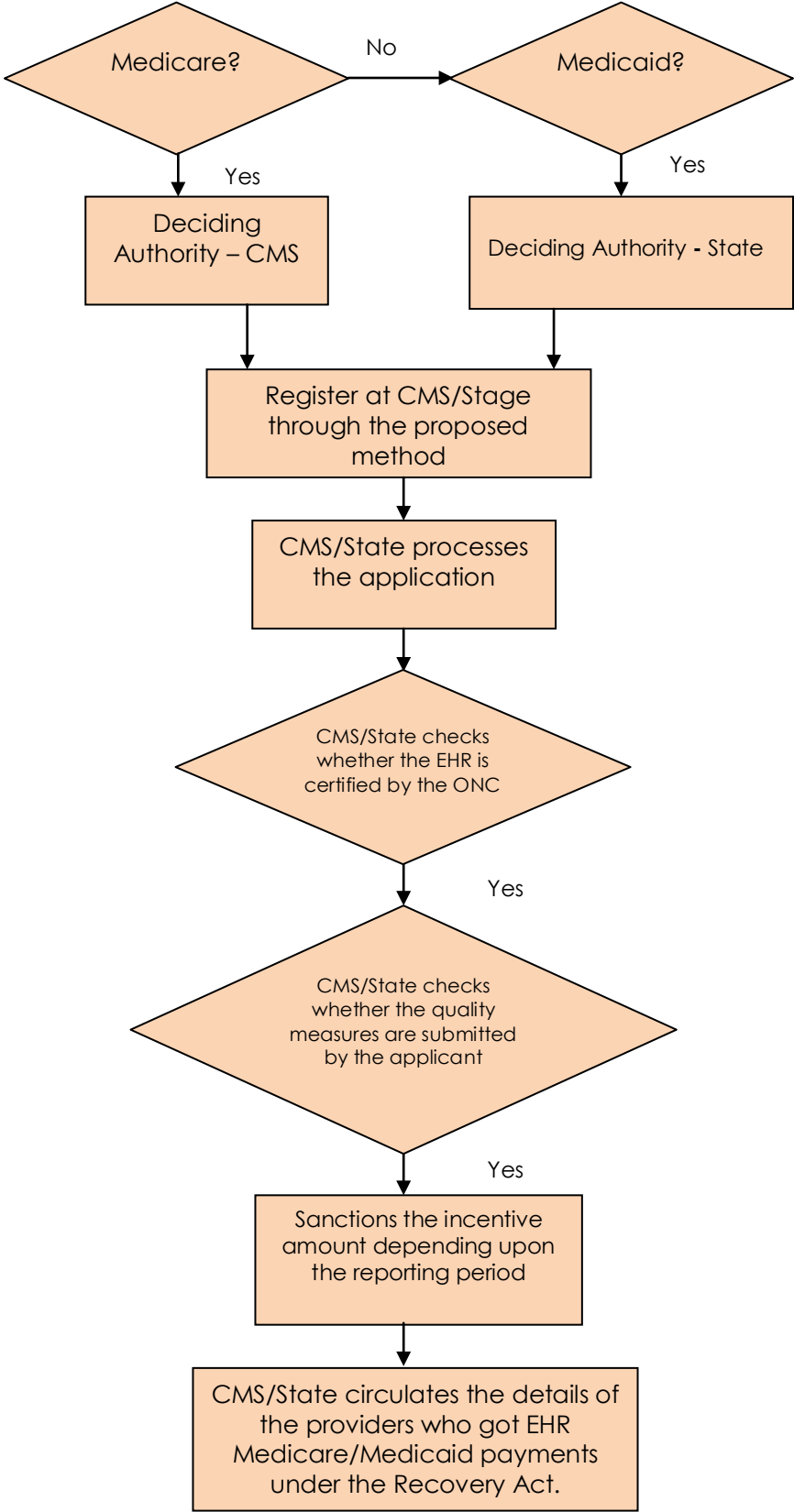
The need for certified EMR/EHR adoption for healthcare providers has never been so important, thanks to ARRA incentives. However, the process required to get there has never been so complicated. The aggressive timelines, intense competition, complex certification process and non-adoption penalties makes the task even harder and frustrating for physicians, taking away quality time from patient care. This step-by-step reference guide aims to save time, improve informed decision making, speed up preparation and ultimately help healthcare providers understand the process to demonstrate meaningful use and secure stimulus funds as well as enhance the efficiency of their business operations.



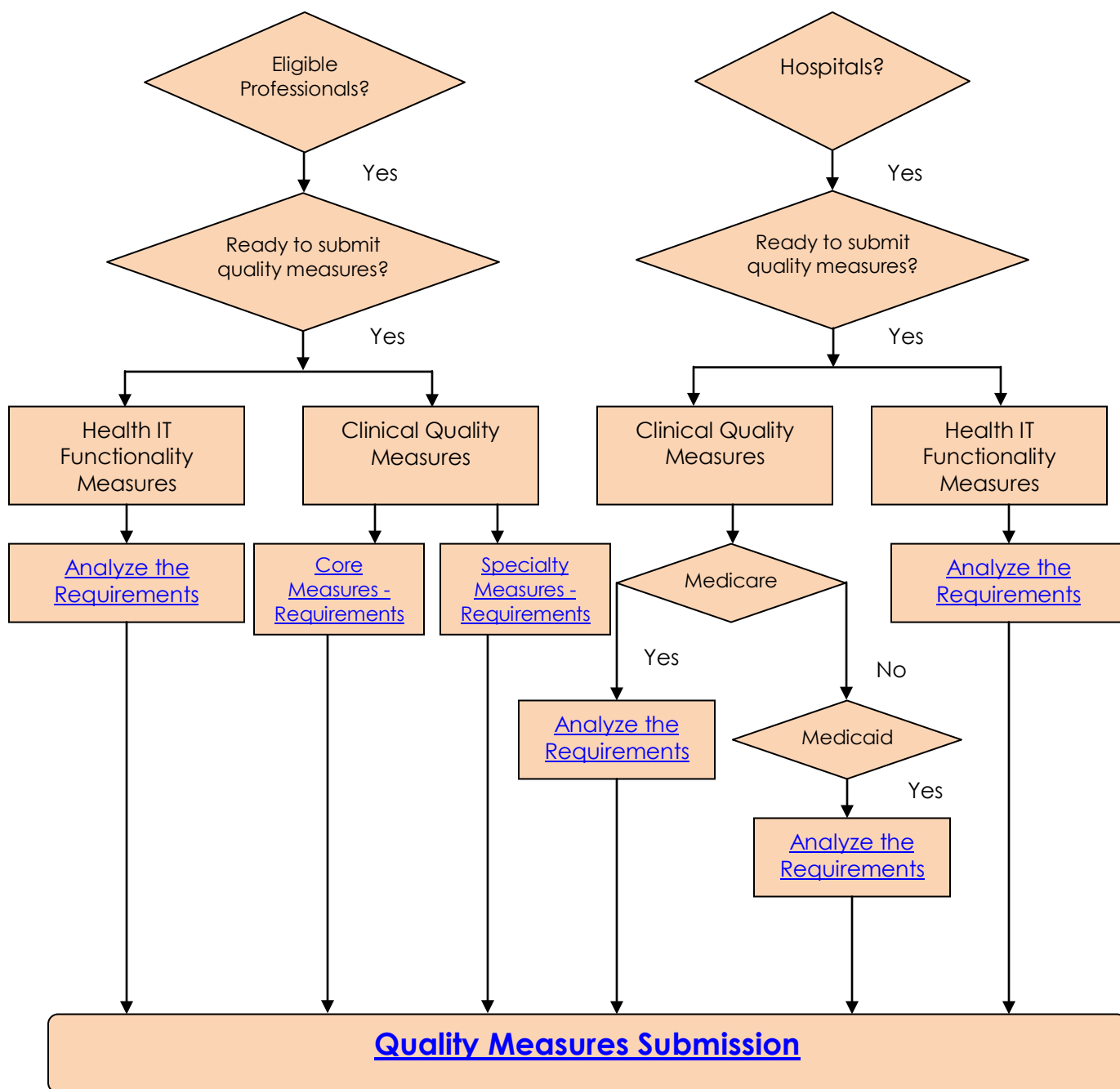
# APPLYING GENERAL ARRA GRANTS



[Back to Initial Page](#)

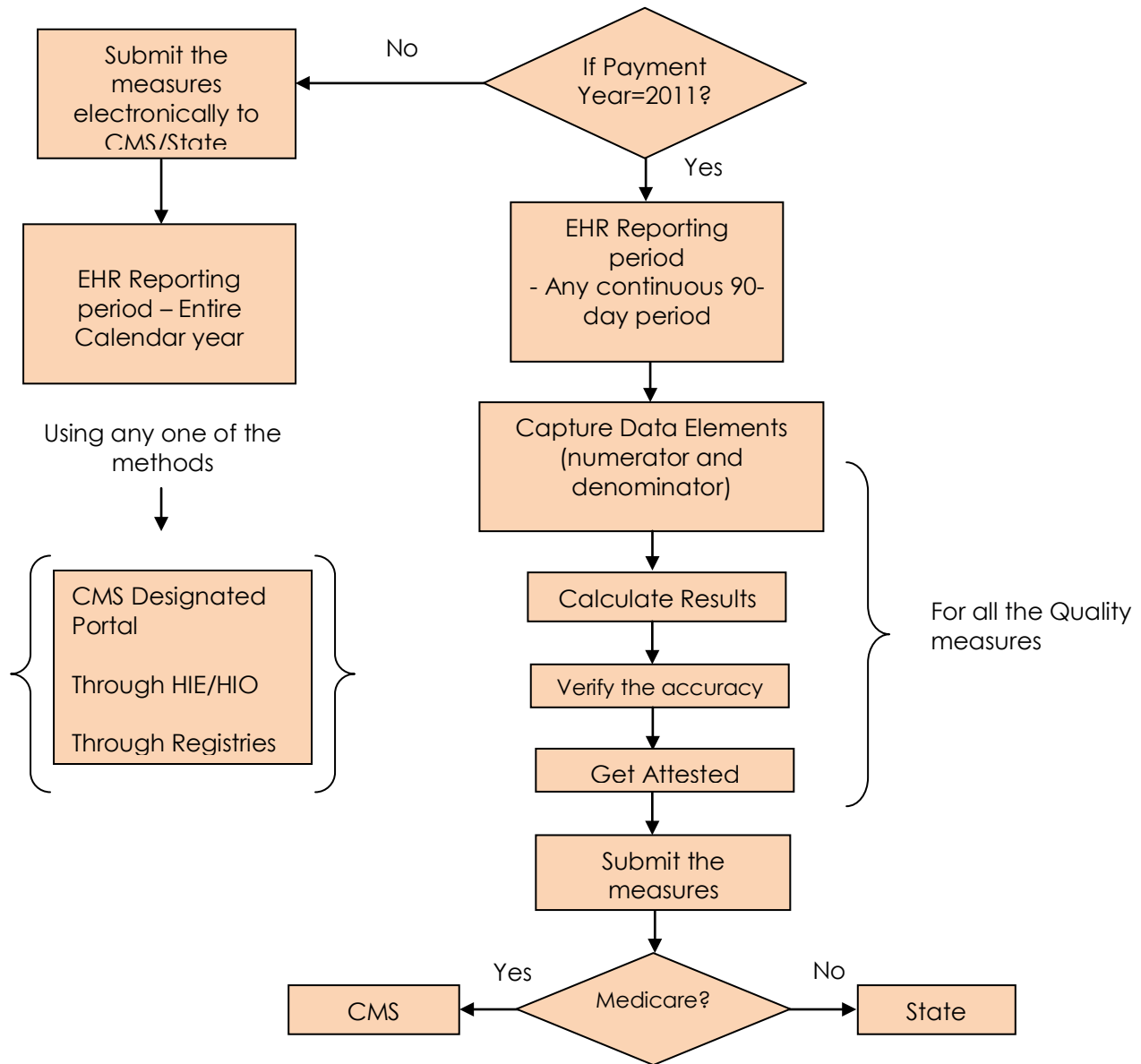


[Back to Initial Page](#)

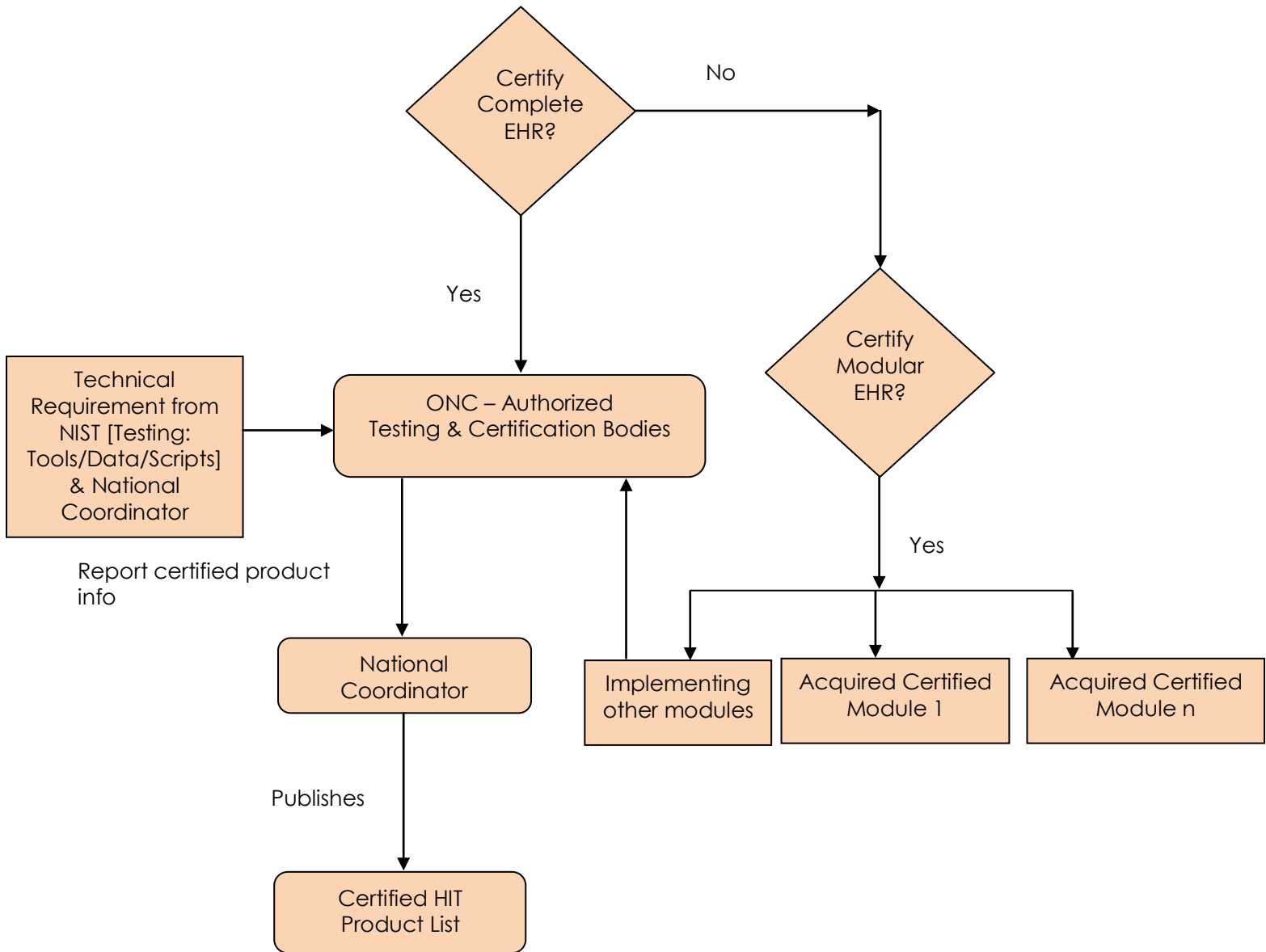


[Back to Initial Page](#)

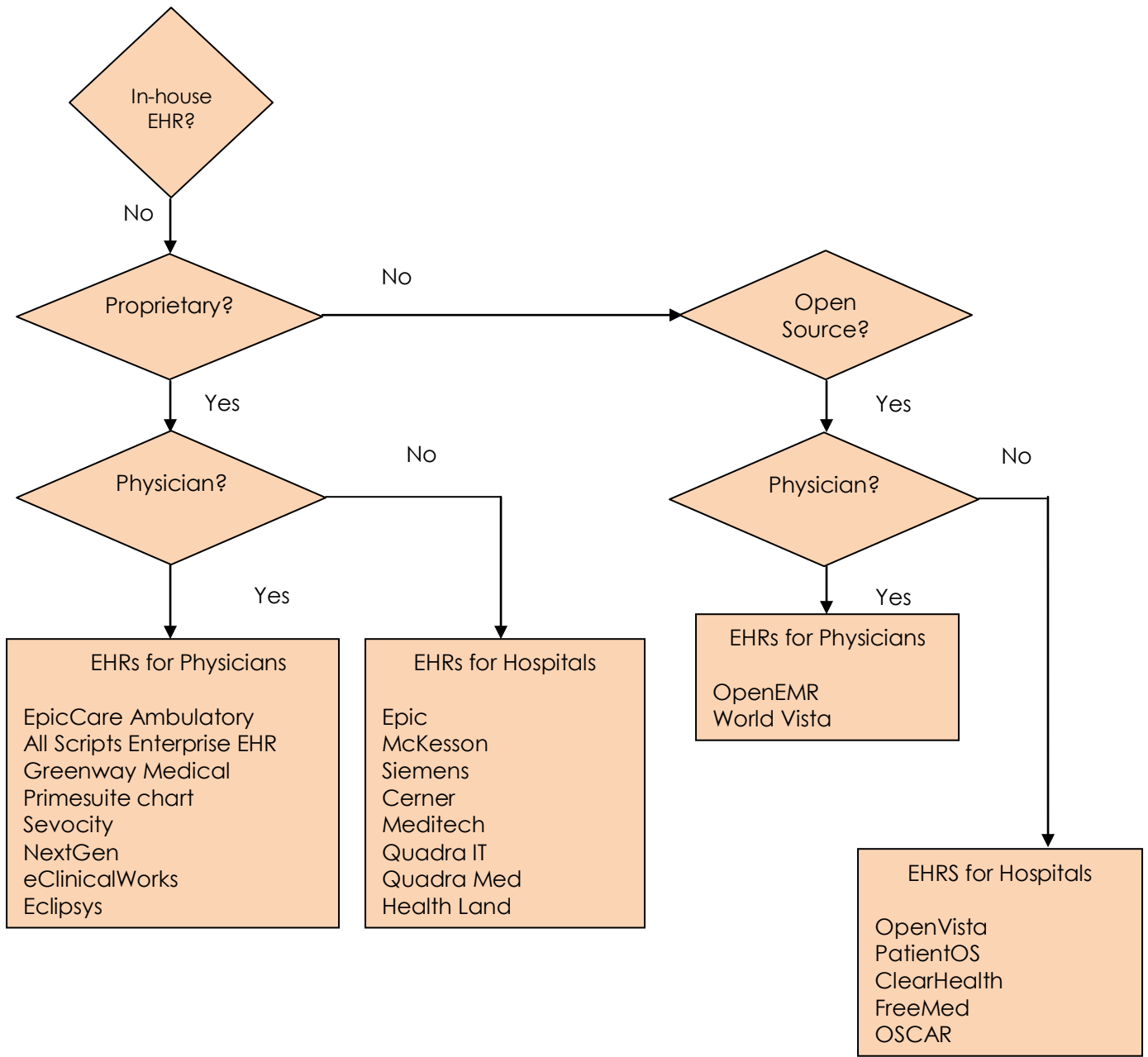
# QUALITY MEASURES SUBMISSION PROCESS



[Back to Initial Page](#)

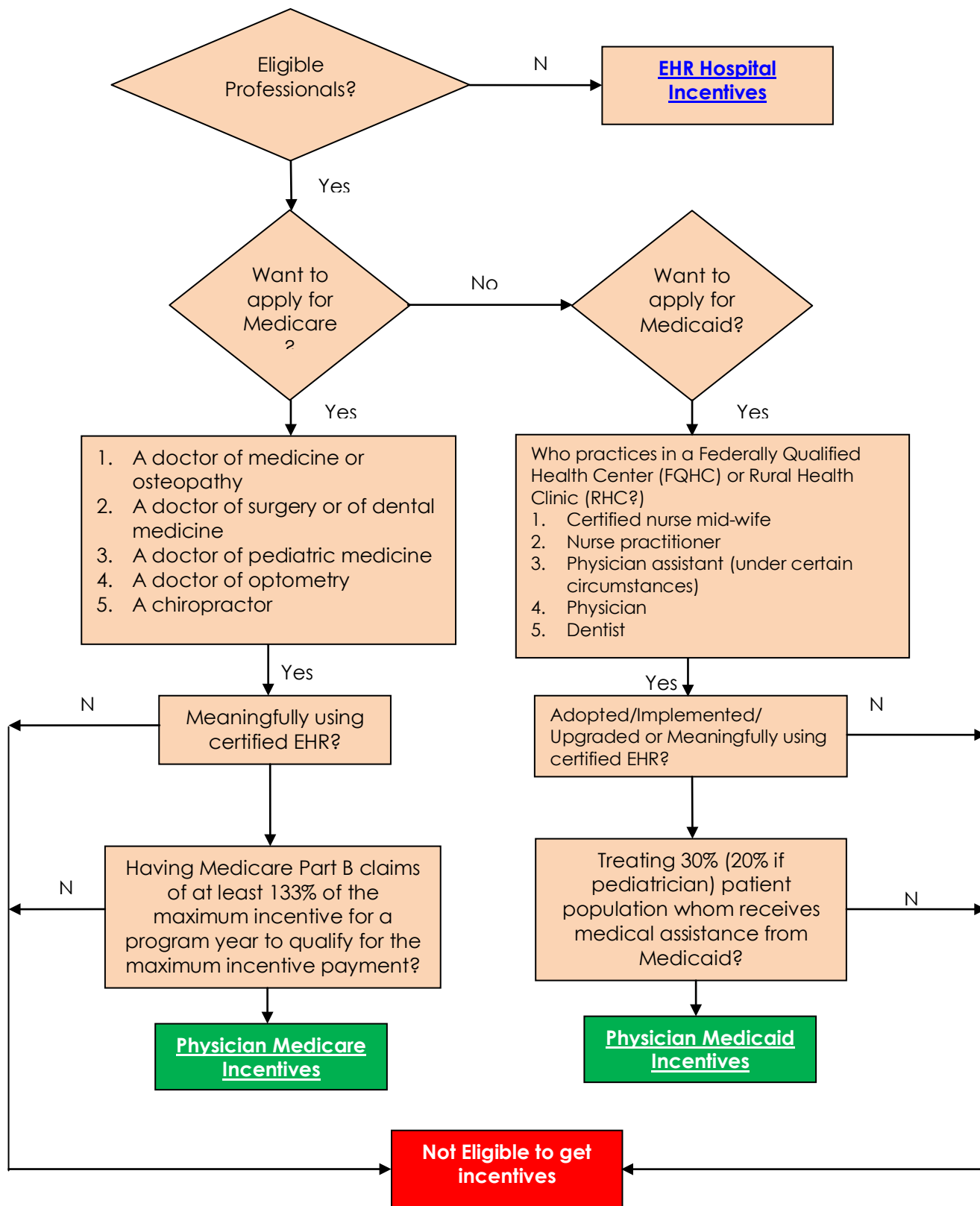


[Back to Initial Page](#)



[Back to Initial Page](#)

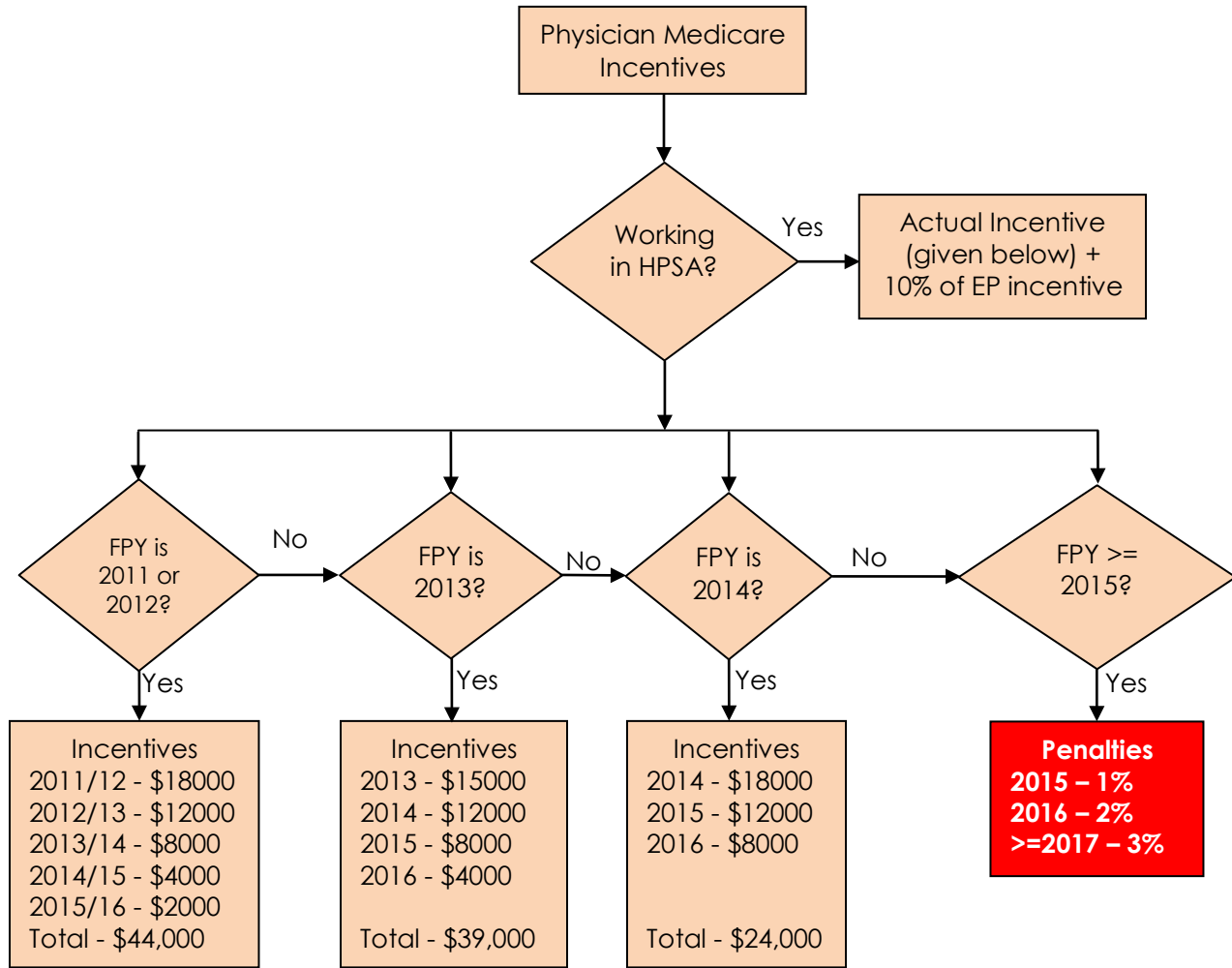




[Back to Initial Page](#)

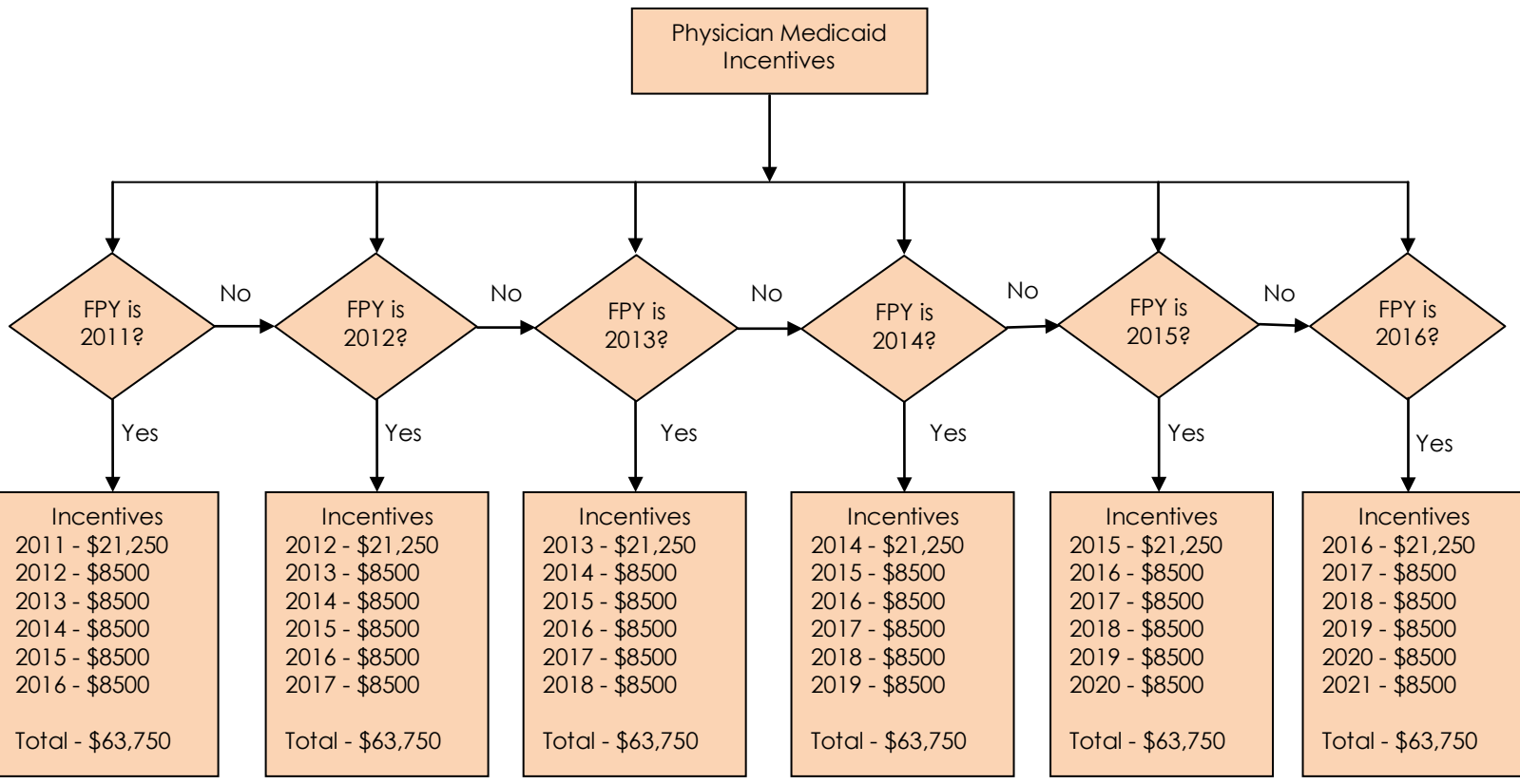
# PHYSICIAN MEDICARE INCENTIVES

Note: FPY – First Payment Year

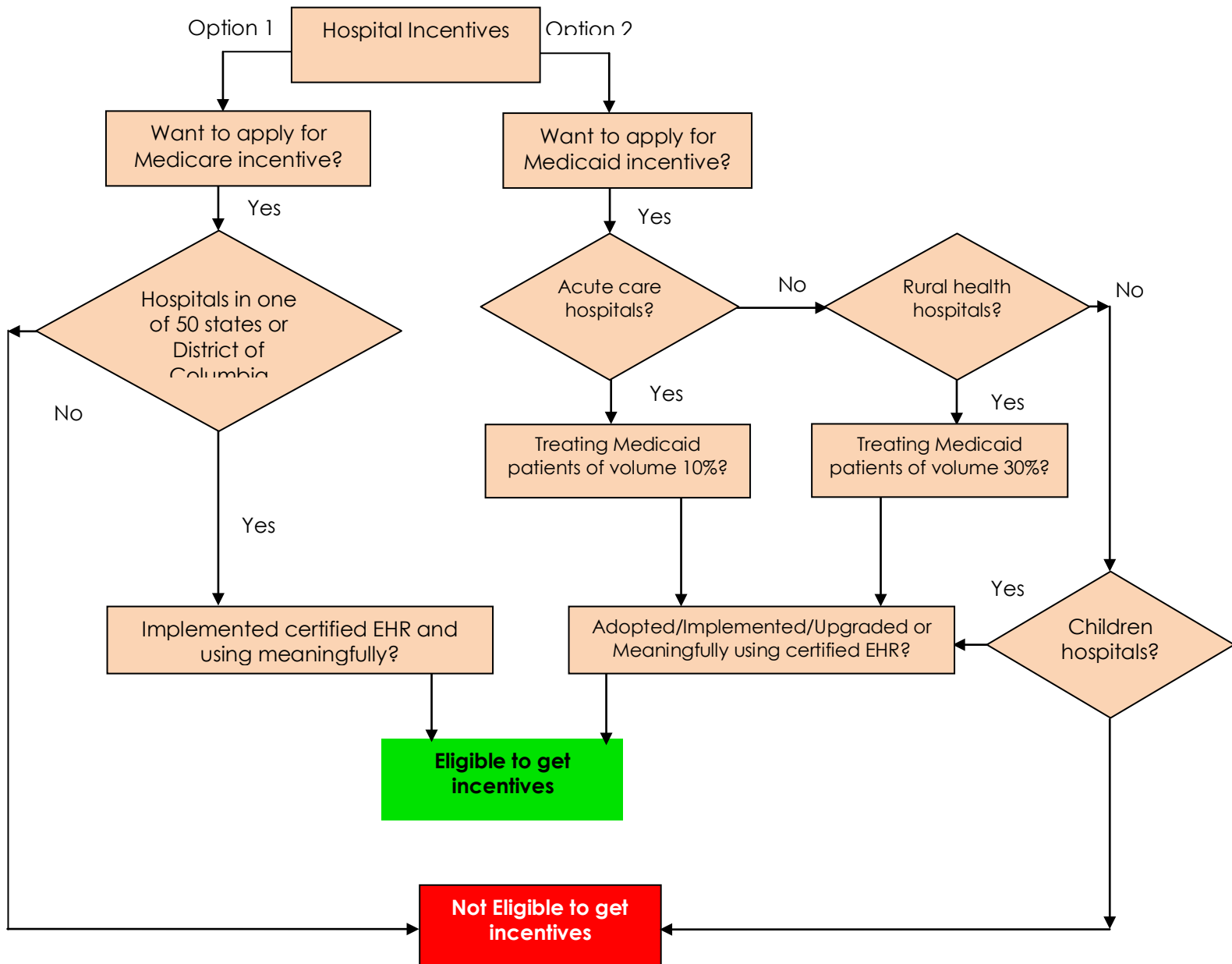


[Back to ARRA Incentives Eligibility](#)

# PHYSICIAN MEDICAID INCENTIVES

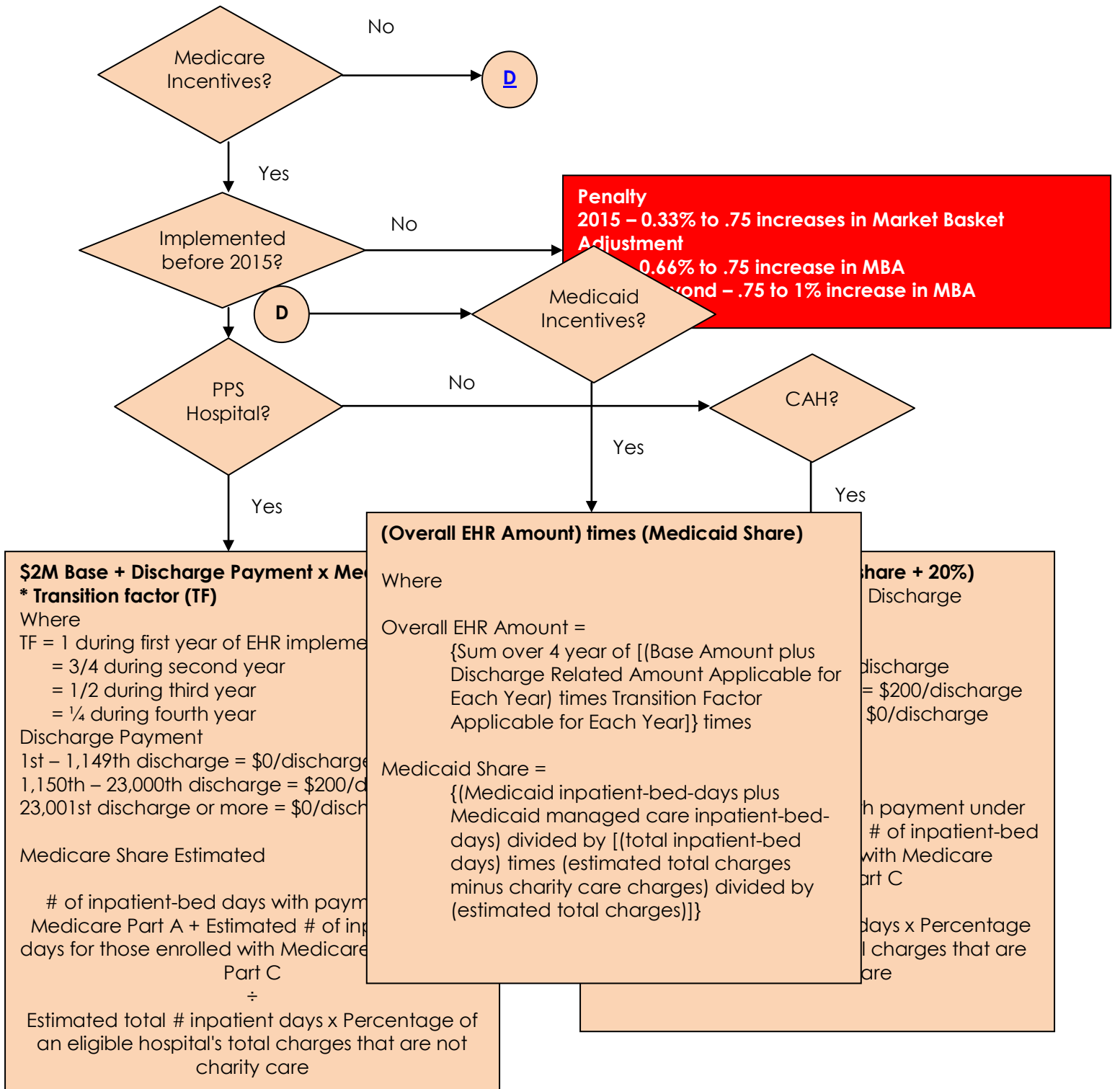


[Back to ARRA Incentives Eligibility](#)



[Back to Initial Page](#)

# HOSPITAL INCENTIVE CALCULATION



[Back to Initial Page](#)

[Back to Initial Page](#)

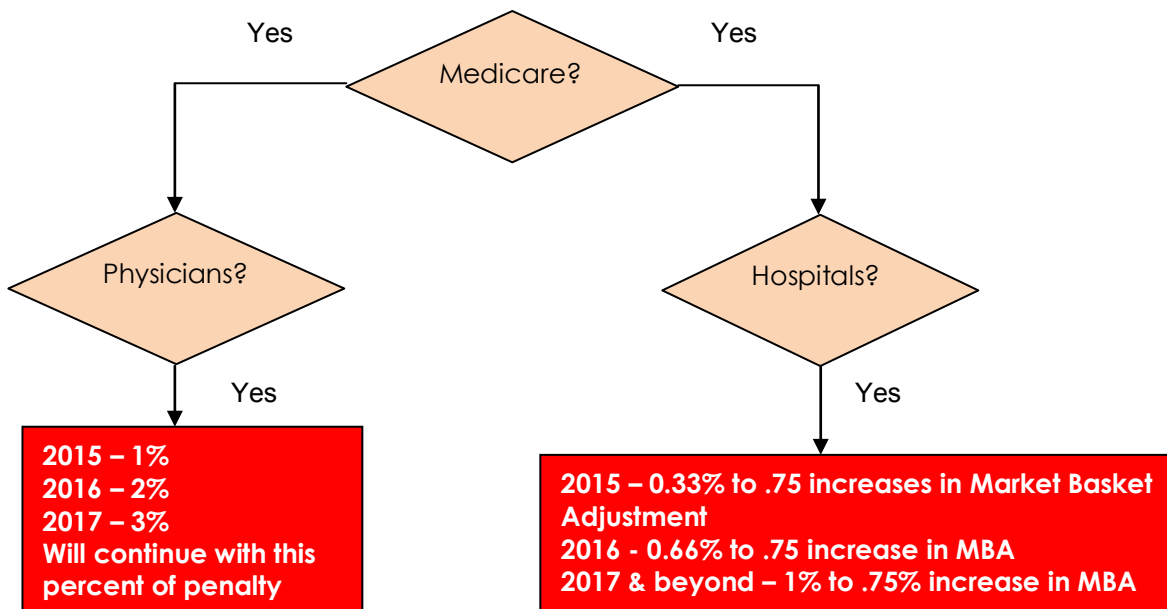
4010, Moorpark Avenue, #205,  
San Jose, California 95117  
USA  
Tel: +1-602-842-2738  
Email: [services@visolve.com](mailto:services@visolve.com)

[www.visolve.com](http://www.visolve.com)

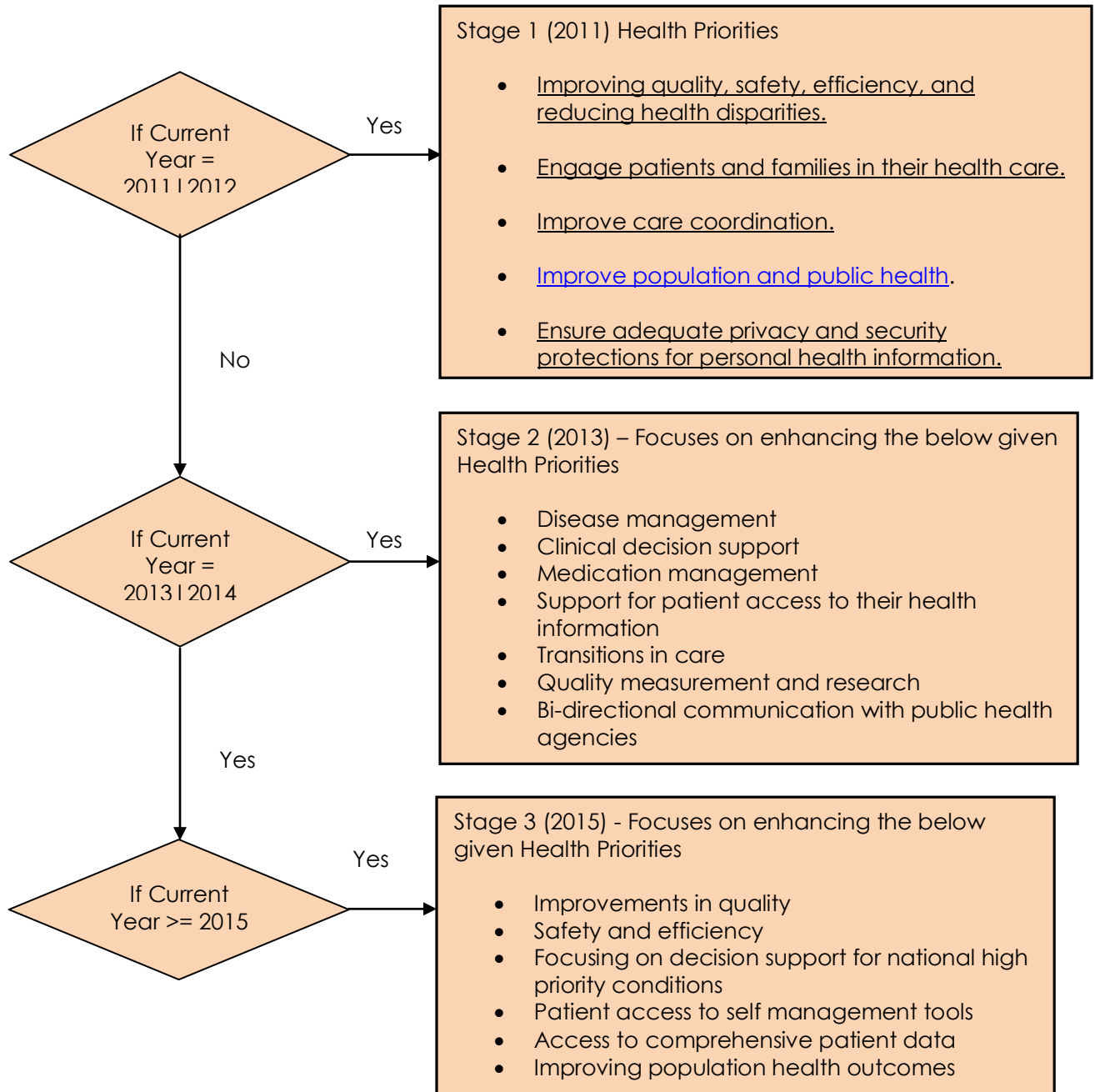


**VISOLVE**

OPEN SOURCE SOLUTIONS



[Back to Initial Page](#)



[Back to Initial Page](#)



## I. Functionality

Improving quality, safety, efficiency,  
and reducing health disparities

S#	Objectives	EP Measures	Hospital Measures
1	CPOE	CPOE is used for at least 80% of all orders.	CPOE is used for 10% of all orders.
2	Drug Interactions	Enable this functionality.	Enable this functionality.
3	E-prescribing	At least 75% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology	--
4	Problem Lists	80% of patients seen at least one or none.	80% of patients seen at least one or none.
5	Medication List	At least 80% of all unique patients seen by the EP.	Eligible hospital has at least one entry recorded as structured data.
6	Medication Allergy List	80% of patients seen at least one or none	80% of patients seen at least one or none
7	Demographics	80% of patients seen: DOB, language, insurance, gender, race, ethnicity.	80% of patients seen: DOB, language, insurance, gender, race, ethnicity, date and cause of death.
8	Vital Signs	80% of patients seen: height, weight, BP, BMI, & growth charts for age 2 to 20.	80% of patients seen: height, weight, BP, BMI, & growth charts for age 2 to 20.
9	Smoking	At least 80% of all unique patients 13 years old or older seen by the EP.	At least 80% of all unique patients 13 years old or older admitted in hospital.
10	Lab Results	50% of labs with numeric or positive/negative result in chart as structured data.	50% of labs with numeric or positive/negative result in chart as structured data.
11	Patient Lists	At least 80% of all unique patients seen by the EP.	Eligible hospital has at least one entry or an indication of none recorded as structured data.
12	Quality Reporting	Report specialty specific quality measures to CMS or states.	Report specialty specific quality measures to CMS or states.
13	Reminders	50% of patient greater than 50 sent reminders for follow up care.	**

14	<b>Clinical Decision</b>	5 CDS rules relevant to the specialty specific quality metric	5 CDS rules relevant to the specialty specific quality metric
15	<b>Insurance Eligibility</b>	80% of patient seen.	80% of patient seen.
16	<b>Electronic claim submission</b>	80% of patient seen.	80% of patient seen.

[Back to MUO Compliance Flow Chart](#)

## II. Engage Patients and Families

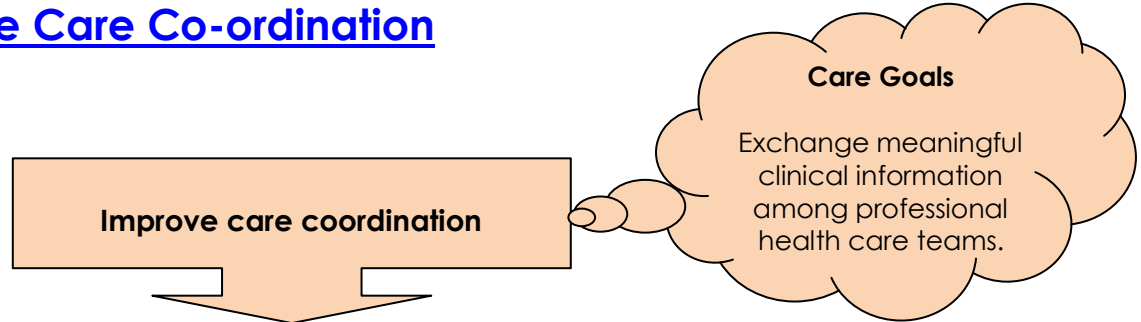
Engage patients and families in their health care

Provide patients and families with timely access to data

S#	Objectives	EP Measures	Hospital Measures
1	<b>Discharge information</b>	**	80% of patients who request it.
2	<b>Electronic Copy</b>	80% of patients who request it (including: test results, problem list, medication list and allergies)	80% of patients who request it (including: test results, problem list, medication list and allergies)
3	<b>Electronic Access</b>	10% patients seen with electronic access to lab results, problem lists, medication list, allergies.	**
4	<b>Clinical Summaries</b>	80% of patients seen get visit summary.	**

[Back to MUO Compliance Flow Chart](#)

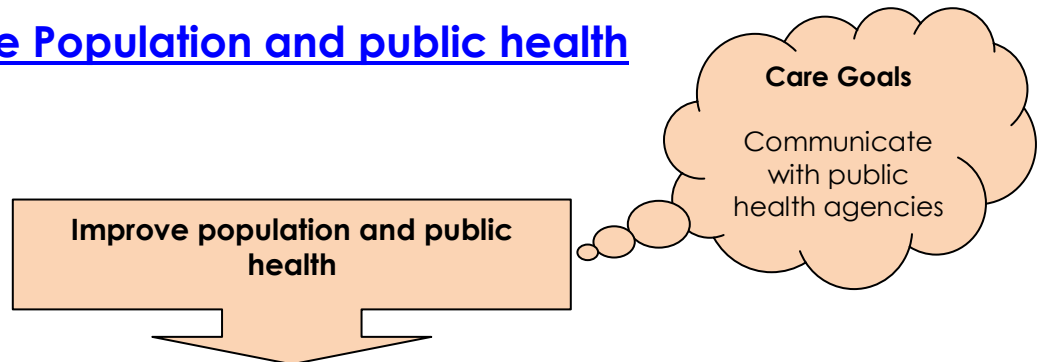
### III. Improve Care Co-ordination



S#	Objectives	EP Measures	Hospital Measures
1	<b>Exchange key clinical information</b>	Electronic exchange of problem list, medication list, allergies, test results. One attempt year one (Attestation)	Electronic exchange of problem list, medication list, allergies, test results, procedures, d/c summary. One attempt year one (Attestation).
2	<b>Medication reconciliation</b>	80% of relevant encounters and transitions of care.	80% of relevant encounters and transitions of care.
3	<b>Referral Summary</b>	80% of referrals and transitions of care.	80% of referrals and transitions of care.

[Back to MUO Compliance Flow Chart](#)

### IV. Improve Population and public health



S#	Objectives	EP Measures	Hospital Measures
1	<b>Immunization registries</b>	One test of submission to state immunization registry (attestation)	One test of submission to state immunization registry (attestation)
2	<b>Reportable lab results</b>	**	One test of submission to state public health agency.
3	<b>Syndromic Surveillance</b>	One test of submission to state public health agency (attestation)	One test of submission to state public health agency (attestation)

[Back to MUO Compliance Flow Chart](#)

## V. Privacy and Security

**Ensure adequate privacy and security protections for personal health information**

Ensure privacy and security protections for confidential info. Provide transparency of data sharing to patient.

Objectives	EP Measures	Hospital Measures
<b>Protect Patient PHI</b>	Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary (Attestation)	Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary (Attestation)

[Back to MUO Compliance Flow Chart](#)

## I. FUNCTIONALITY

### 1. CPOE

#### Objective:

Enable a user to electronically record, store, retrieve, and manage, at a minimum, the following order types:

1. Medications
2. Laboratory
3. Radiology/Imaging
4. Provider Referrals

#### Measure:

For EPs, CPOE is used for at least 80% of all orders

[Back to Functionality objectives table](#)

### 2. Drug Interactions

#### Objective:

- A. Automatically and electronically generate and indicate (e.g., pop-up message or sound) in real-time, alerts at the point of care for drug-drug and drug- allergy contraindications based on medication list, medication allergy list, age, and CPOE.
- B. Enable a user to electronically check if drugs are in a formulary or preferred drug list in accordance with —Applicable Part D standard required by law (i.e., NCPDP Formulary & Benefits Standard 1.0)
- C. Provide certain users with administrator rights to deactivate, modify, and add rules for drug-drug and drug-allergy checking.
- D. Automatically and electronically track, record, and generate reports on the number of alerts responded to by a user.

#### Measure:

EP has enabled this functionality

[Back to Functionality objectives table](#)

### 3. E-prescribing

Electronically sending the patient's medication information to the patient's choice of pharmacy using NCPDP standard

**Objective:**

Generate and transmit permissible prescriptions electronically (eRx)

**Measure:**

At least 75% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology

**E-prescribing Standard:**

NCPDP SCRIPT 8.1 or NCPDP SCRIPT 8.1 and 10.6. SCRIPT 8.1 is the current standard adopted by HHS for specified transactions involving the communication of a prescription or prescription-related information between prescribers and dispensers in the Medicare Part D electronic prescribing drug program.

NCPDP SCRIPT 10.6 is the preferred standard to achieve meaningful use in 2013. Ref: [http://www.ncdp.org/pdf/Basic\\_guide\\_to\\_standards.pdf](http://www.ncdp.org/pdf/Basic_guide_to_standards.pdf)

The different e-prescribing network companies are given below:

1. Sure Scripts (<http://surescripts.com/>)
2. All scripts e-prescribe ([www.nationaleRx.com](http://www.nationaleRx.com))
3. Dr. First Rcopia E-Prescribing Software(<http://www.drfirst.com/eprescribing.jsp>)
4. MyRxPad (<http://rxp.nlm.nih.gov>)

**Drug Vocabulary:**

Codes should be used from a drug vocabulary, which was identified as RxNorm drug data source provider by the National Library of Medicine and which also integrates the RxNorm vocabulary.

RxNorm provides normalized names for clinical drugs and links its names to many of the drug vocabularies commonly used in pharmacy management and drug interaction software. In RxNorm, the name of a clinical drug combines its ingredients, strengths, and/or form.

RxNorm drug data source providers with a complete data set integrated within RxNorm are:

- GS (Gold Standard Alchemy)
- MDDDB (Master Drug Data Base. Medi-Span, a division of Wolters Kluwer Health)
- MMSL (Multum MediSource Lexicon)
- MMX (Micromedex DRUGDEX)
- MSH (Medical Subject Headings (MeSH))
- MTHFDA (FDA National Drug Code Directory)
- MTHSPL (FDA Structured Product Labels)
- NDDF (First DataBank NDDF Plus Source Vocabulary)
- SNOMED CT (SNOMED Clinical Terms (drug information). SNOMED International)
- VANDF (Veterans Health Administration National Drug File)

RxNorm would be the preferred standard to achieve meaningful use in 2013.

[Back to Functionality objectives table](#)

## 4. Problem Lists

### Objective:

Enable a user to electronically record, modify, and retrieve a patient's problem list for longitudinal care (i.e., over multiple office visits) based on ICD-9-CM or SNOMED CT®

### Measure:

At least 80% of all unique patients seen by the EP or admitted to the eligible hospital have at least one entry (or an indication of –none if the patient is not currently prescribed any medication) recorded as structured data

Download location for ICD-9 data - <http://www.icd9data.com/>

### Standard:

In 2010, providers must use ICD-9 or SNOMED CT to qualify, and in 2013 they must use ICD-10 or SNOMED CT. SNOMED CT will be required by 2015 for bonuses under economic recovery law

SNOMED-CT (Systematized Nomenclature of Medicine--Clinical Terms) is a clinical terminology covering most areas of clinical information such as diseases, findings, procedures, microorganisms, pharmaceuticals etc. This is developed by IHTSDO.

[Back to Functionality objectives table](#)

## 5. Active Medication List

### Objective:

Enable a user to electronically record, modify, and retrieve a patient's active medication list as well as medication history for longitudinal care (i.e., over multiple office visits) in accordance with the applicable standard, that requires the use of codes from a drug vocabulary the National Library of Medicine has identified as an RxNorm drug data source provider with a complete data set integrated within RxNorm.

### Measure:

At least 80% of all unique patients seen by the EP or admitted to the eligible hospital have at least one entry (or an indication of –none if the patient is not currently prescribed any medication) recorded as structured data

[Back to Functionality objectives table](#)

## 6. Active Medication Allergy List

### Objective:

Enable a user to electronically record, modify, and retrieve a patient's active medication allergy list as well as medication allergy history for longitudinal care (i.e., over multiple office visits).

### Measure:

At least 80% of all unique patients seen, by the EP or admitted to the eligible hospital have at least one entry or (an indication of –none if the patient has no medication allergies) recorded as structured data

### Standard:

There is no standard defined for 2011 Meaningful Use. For 2013, the EHRs should use UNII (Unique Ingredient Identifier) from FDA to represent allergies.

Find more details related to UNII in

[http://www.clinicalarchitecture.com/healthcare\\_technology\\_informatics\\_blog/?Tag=UNII](http://www.clinicalarchitecture.com/healthcare_technology_informatics_blog/?Tag=UNII)

[Back to Functionality objectives table](#)



## 7. Record Demographics

### Objective:

Enable a user to electronically record, modify, and retrieve patient demographic data including preferred language, insurance type, gender, race, ethnicity, and date of birth.

### Measure:

At least 80% of all unique patients seen by the EP or admitted to the eligible hospital have Demographics recorded as structured data

[Back to Functionality objectives table](#)

## 8. Record and chart changes in vital signs

### Objective:

- A. Enable a user to electronically record, modify, and retrieve a patient's vital signs including, at a minimum, the height, weight, blood pressure, temperature, and pulse.
- B. Automatically calculate and display body mass index (BMI) based on a patient's height and weight.
- C. Plot and electronically display, upon request, growth charts (height, weight, and BMI) for patients 2–20 years old.

### Measure:

For at least 80% of all unique patients age 2 and over seen by the EP or admitted to eligible hospital, record blood pressure and BMI; additionally plot growth chart for children age 2-20

[Back to Functionality objectives table](#)

## 9. Record smoking status (13 years old and older)

### Objective:

Enable a user to electronically record, modify, and retrieve the smoking status of a patient to current smoker, former smoker, or never smoked

### Measure:

At least 80% of all unique patients 13 years old or older seen by the EP or admitted to the eligible hospital have —smoking status|| recorded

[Back to Functionality objectives table](#)

## 10. Incorporate clinical lab-test results into EHR as structured data

### Objective:

- A. Electronically receive clinical laboratory test results in a structured format and display such results in human readable format.
  - B. Electronically display in human readable format any clinical laboratory tests that have been received with LOINC® codes.
  - C. Electronically display all the information for a test report specified at 42 CFR 493.1291(c)(1) through (7) like:
    1. For positive patient identification, either the patient's name and identification number, or a unique patient identifier and identification number.
    2. The name and address of the laboratory location where the test was performed.
    3. The test report date.
    4. The test performed.
    5. Specimen source, when appropriate.
    6. The test result and, if applicable, the units of measurement or interpretation, or both.
    7. Any information regarding the condition and disposition of specimens that do not meet the laboratory's criteria for acceptability.
- Ref: <http://law.justia.com/us/cfr/title42/42-3.0.1.5.29.11.220.57.html>
- D. Enable a user to electronically update a patient's record based upon received laboratory test results.

### Measure:

At least 50% of all clinical lab tests ordered whose results are in a positive/negative or numerical format are incorporated in certified EHR technology as structured data

Content Exchange Standard - HL7 2.5.1

[Back to Functionality objectives table](#)

## 11. Patient Lists

### Objective:

Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, and outreach.

Enable a user to electronically select, sort, retrieve, and output a list of patients and patients' clinical information, based on user-defined demographic data, medication list, and specific conditions.

### Measure:

Generate at least one report listing patients of the EP or eligible hospital with a specific condition

[Back to Functionality objectives table](#)

## 12. Quality Measures Reporting to CMS or the States

### Objective:

- A. Calculate and electronically display quality measure results as specified by CMS or states.
- B. Enable a user to electronically submit calculated quality measures in accordance with the standard – CMS PQRI 2008 Registry XML Specification

### Measure:

For 2011, provide aggregate numerator and denominator through attestation. For 2012, electronically submit the measures

### Standard:

CMS PQRI 2008 Registry XML Specification

To electronically submitting the measures, HL7 Quality Reporting Document Architecture (QRDA) standards should be used.

[Back to Functionality objectives table](#)

## 13. Patient Reminders

### Objective:

Electronically generate, upon request, a patient reminder list for preventive or follow-up care according to patient preferences based on demographic data, specific conditions, and/or medication list.

### Measure:

Reminder sent to at least 50% of all unique patients seen by the EP that are age 50 or over

[Back to Functionality objectives table](#)

## 14. Clinical Decision Support

### Objective:

- A. Implement automated, electronic clinical decision support rules (in addition to drug-drug and drug-allergy contraindication checking) according to specialty or clinical priorities that use demographic data, specific patient diagnoses, conditions, diagnostic test results and/or patient medication list
- B. Automatically and electronically generate and indicate (e.g., pop-up message or sound) in real-time, alerts and care suggestions based upon clinical decision support rules and evidence grade.
- C. Automatically and electronically track, record, and generate reports on the number of alerts responded to by a user.

### Measure:

Implement 5 clinical decision support rules relevant to the clinical quality metrics the EP/Eligible Hospital is responsible for

[Back to Functionality objectives table](#)

## 15. Insurance Eligibility

### Objective:

Enable a user to electronically record and display patients' insurance eligibility, and submit insurance eligibility queries to public or private payers and receive an eligibility response

### Measure:

Insurance eligibility checked electronically for at least 80% of all unique patients seen by the EP or admitted to the eligible hospital

### Standard:

ASC X12N 270/271—Health Care Eligibility Benefit Inquiry and Response, Version 4010 (004010X092) and Addenda to Health Care Eligibility Benefit Inquiry and Response (004010X092A1) as well as ASC X12 Standards for Electronic Data Interchange Technical Report Type 3, Version 5010 (ASC X12N/005010X279).

[Back to Functionality objectives table](#)

## 16. Insurance Claims

### Objective:

Enable a user to electronically submit claims to public or private payers in accordance with the applicable standard

### Measure:

At least 80% of all claims filed electronically by the EP or the eligible hospital

### Standard:

ASC X12N 837—Health Care Claims: Professional, Volumes 1 and 2, Version 4010 (004010X098) and Addenda to Health Care Claims: Professional, Volumes 1 and 2, Version 4010, (004010x098A1), as well as ASC X12 Standards for Electronic Data Interchange Technical Report Type 3—Health Care Claim: Professional (837), (ASC X12N/005010X222)

[Back to Functionality objectives table](#)

## II. Engage Patients and Families

### 1. Patient Electronic Copy of Health Information

**Objective:**

Provide patients with an electronic copy of their discharge instructions and procedures at time of discharge, upon request

**Measure:**

At least 80% of all patients who request an electronic copy of their health information are provided it within 48 hours

**Options:**

1. Through patient portal (or)
2. Provide the patient health record in human readable format and in CCR/CCD standard format to the patient on electronic media

[Back to Engage Patients and Families table](#)

### 2. Patient Electronic Access to Health Information

**Objective:**

Provide patients with timely electronic access to their health information (including lab results, problem list, medication lists, and allergies) within 96 hours of the information being available to the eligible professional

Enable a user to provide patients with online access to their clinical information, including, at a minimum, lab test results, problem list, medication list, medication allergy list, immunizations, and procedures.

**Measure:**

At least 10% of all unique patients seen by the EP are provided timely electronic access to their health information

**Options:**

1. Can integrate with –Google Health or –Microsoft Health vault
2. A stand alone patient portal which provides the PHR (Personal Health Record) along with additional features like appointment scheduling, provider-patient communication will be an added advantage

[Back to Engage Patients and Families table](#)

## 3. Patient Clinical Summaries

### Objective:

Enable a user to provide clinical summaries to patients (in paper or electronic form) for each office visit that include, at a minimum, diagnostic test results, medication list, medication allergy list, procedures, problem list, and immunizations.

### Measure:

Clinical summaries are provided for at least 80% of all office visits

### Options:

1. Through patient portal (or)
2. Provide the patient health record in human readable format or in CCR/CCD standard format to the patient on electronic media

[Back to Engage Patients and Families Table](#)

## III. Improve Care Co-ordination

### 1. Exchange Clinical Information

#### Objective:

Capability to exchange key clinical information (for example, problem list, medication list, allergies, diagnostic test results), among providers of care and patient authorized entities electronically

#### Measure:

Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information

#### Options:

1. To electronically send a patient summary record to other providers/organizations through standard format (CCR/CCD)
2. To electronically receive a patient summary record from other providers/organizations (any format CCR or CCD) and display in human readable format

## Standard:

Certified EHR Technology should be capable of using the following standards to electronically exchange a patient summary record

Purpose	Standard for MU Stage 1	Standard for MU Stage 2
Patient Summary Record	HL7 CDA R2 CCD Level 2 or ASTM CCR	To be narrowed down
Problem List	Applicable HIPAA code set required by law (i.e., ICD-9-CM); or SNOMED CT®	Applicable HIPAA code set required by law (e.g., ICD-10-CM) or SNOMED CT®.
Medication List	Any code set by an RxNorm drug data source provider that is identified by the United States National Library of Medicine as being a complete data set integrated within RxNorm	RxNorm
Medication Allergy List	No standard	UNII (Unique Ingredient Identifier)
Procedures	Applicable HIPAA code sets required by law (i.e., ICD-9-CM or CPT-4®).	Applicable HIPAA code sets required by law (i.e., ICD-10-PCS or CPT-4®).
Vital signs	No	CDA template
Units of measure	No	UCUM (Unified Code for Units of Measure)
Lab orders and results	LOINC® when LOINC® codes have been received from a laboratory.	LOINC®.

Once the patient summary is received in an alternative standard, it should be displayed in human readable format. In instances where LOINC® codes have not been received from a laboratory, the use of any local or proprietary code is permitted.

[Back to Improve care co-ordination table](#)



## 2. Summary Care Record for Transition of Care/Referral

### Objective:

Provide summary care record for each transition of care and referral

### Measure:

Provide summary of care record for at least 80% of transitions of care and referrals

### Options:

1. To electronically send a patient summary record to other providers/ organizations through standard format ( CCR/CCD)
2. To electronically receive a patient summary record from other providers/ organizations (CCR/CCD) and display in human readable format

[Back to Improve care co-ordination table](#)

## 3. Medication Reconciliation

### Objective:

Perform medication reconciliation at relevant encounters and each transition of care

### Measure:

Perform medication reconciliation for at least 80% of relevant encounters and transitions of care

[Back to improve care co-ordination table](#)

## IV. Improve Population and public health

### 1. Immunization Registries

#### Objective:

Electronically record, retrieve, and transmit immunization information to immunization registries in accordance with:

- a. CVX – the standard code set to represent vaccine information
- b. The applicable state designated standard format

#### Measure:

Performed at least one test submission to immunization registries and public health agencies

**Standard:**

Content Exchange Standard - HL7 2.3.1 or HL7 2.5.1

Vocabulary Standard - CDC maintained HL7 standard code set CVX—Vaccines Administered, the CDC's National Center of Immunization and Respiratory Diseases (NCIRD) maintained HL7 code set.

The CDC maintains the HL7 external code set CVX at

<http://www.cdc.gov/vaccines/programs/iis/stds/cvx.htm>

[Back to improve population and public health table](#)

## 2. Electronic Syndromic Surveillance

**Objective:**

Electronically record, retrieve, and transmit syndrome-based (e.g., influenza like illness) public health surveillance information to public health agencies

**Measure:**

Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies.

Content Exchange standard to be used – HL7 2.3.1 or HL7 2.5.1

**Standard:**

GIPSE or According to Applicable Public Health Agency Requirements.

GIPSE – Geocoded Interoperable Population Summary Exchange is a data format created by the U.S. Centers for Disease Control and Prevention (CDC) to allow the electronic exchange of health condition/syndrome summary data that has been stratified by a number of variables, including geography. GIPSE data will be utilized by public health agencies in the U.S. to conduct situational awareness, including early event detection and monitoring, for potential public health events.

**Reference**

[http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS\\_0\\_11673\\_909195\\_0\\_0\\_18/GIPSEProfileSpecification.pdf](http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_11673_909195_0_0_18/GIPSEProfileSpecification.pdf)

[Back to improve population and public health table](#)

## V. Privacy and Security

### Objective:

1. Assign a unique name and/or number for identifying and tracking user identity and establish controls that permit only authorized users to access electronic health information.
2. Permit authorized users (who are authorized for emergency situations) to access electronic health information during an emergency.
3. Terminate an electronic session after a predetermined time of inactivity.
4. Encrypt and decrypt electronic health information according to user-defined preferences (e.g., backups, removable media, at log-on/off) in accordance with the standard - A symmetric 128 bit fixed-block cipher algorithm capable of using a 128, 192, or 256 bit encryption key must be used (e.g., FIPS 197 Advanced Encryption Standard,(AES), Nov 2001
5. Encrypt and decrypt electronic health information when exchanged in accordance with the standard - An encrypted and integrity protected link must be implemented (e.g., TLS, IPv6, IPv4 with IPSec).
6. Record actions (e.g., deletion) related to electronic health information (i.e., audit log); provide alerts based on user-defined events, and electronically display and print all or a specified set of recorded information upon request or at a set period of time.
7. Verify that electronic health information has not been altered in transit and detect the alteration and deletion of electronic health information and audit logs in accordance with the standard - A secure hashing algorithm must be used to verify that electronic health information has not been altered in transit. The secure hash algorithm used must be SHA-1 or higher (e.g., Federal Information Processing Standards (FIPS) Publication (PUB) Secure Hash Standard (SHS) FIPS PUB 180-3)
8. Verify that a person or entity seeking access to electronic health information is the one claimed and is authorized to access such information.
9. Verify that a person or entity seeking access to electronic health information across a network is the one claimed and is authorized to access such information using Cross Enterprise Authentication, Use of a cross-enterprise secure transaction that contains sufficient identity information such that the receiver can make access control decisions and produce detailed and accurate security audit trails (e.g., IHE Cross Enterprise User Assertion (XUA) with SAML identity assertions). This feature is still under discussion.
10. Record disclosures made for treatment, payment, and health care operations. The date, time, patient identification (name or number), user identification (name or number), and a description of the disclosure must be recorded.

[Back to privacy and security table](#)

## Appendix A – References

1. CMS Final Rule – <http://www.govhealthit.com/newsitem.aspx?nid=74215>
2. ONC Temporary Certification – <http://edocket.access.gpo.gov/2010/pdf/2010-14999.pdf>
3. NIST Test Procedures – <http://healthcare.nist.gov/>
4. NPRM for meaningful use – <http://edocket.access.gpo.gov/2010/pdf/E9-31217.pdf>
5. Meaningful Use – Interim Final Rule - <http://edocket.access.gpo.gov/2010/pdf/E9-31216.pdf>
6. HHS Certification Program – <http://edocket.access.gpo.gov/2010/pdf/2010-4991.pdf>
7. HHS – <http://healthit.hhs.gov>
8. CMS – <http://www.cms.gov/apps/media/press/factsheet.asp?Counter=3564>
9. HIMSS – <http://www.himss.org/EconomicStimulus/>
10. ARRA Grants – <http://grants.gov/>
11. Recovery – <http://www.recovery.gov/>
12. Healthcare IT news – <http://healthcareitnews.com/>

