



# Meaningful Use Clinical Quality Measure Reporting An Open Source Solution



# Development Partners

Sponsor

The Office of the National Coordinator for  
Health Information Technology



Developer

**MITRE**

a nonprofit research and development center working  
solely in the public interest

# What is popHealth?

## Meaningful Use

Electronic  
Health Record  
Certification

Interoperability

Clinical Quality  
Measure  
Reporting

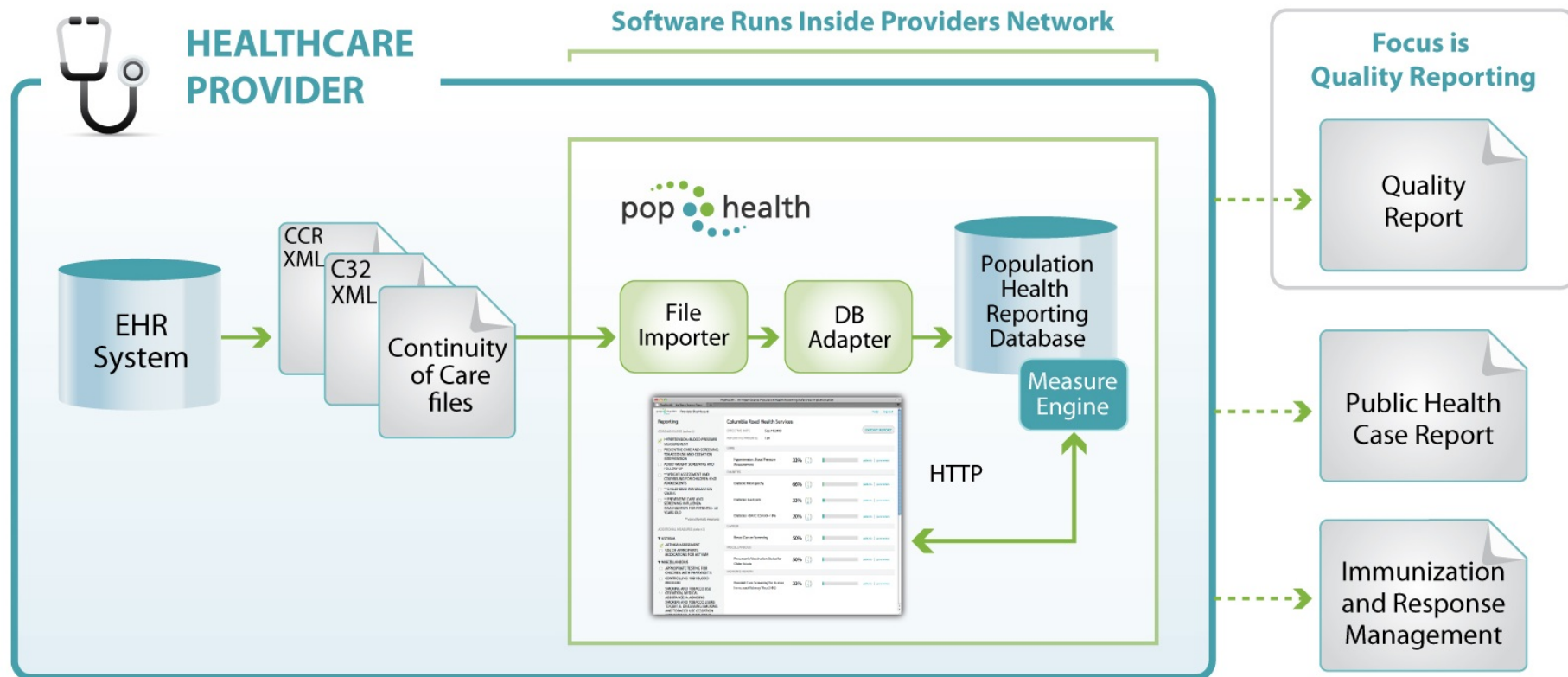


- Clinical Quality Measure reporting tool
- Features:
  - Provider-friendly user interface
  - Includes all 44 Meaningful Use Stage I ambulatory clinical quality measures encoded per CMS electronic specifications
  - Affordable, accessible, open source and multi-platform software
- A reference implementation for vendors and providers

# Key Design Features

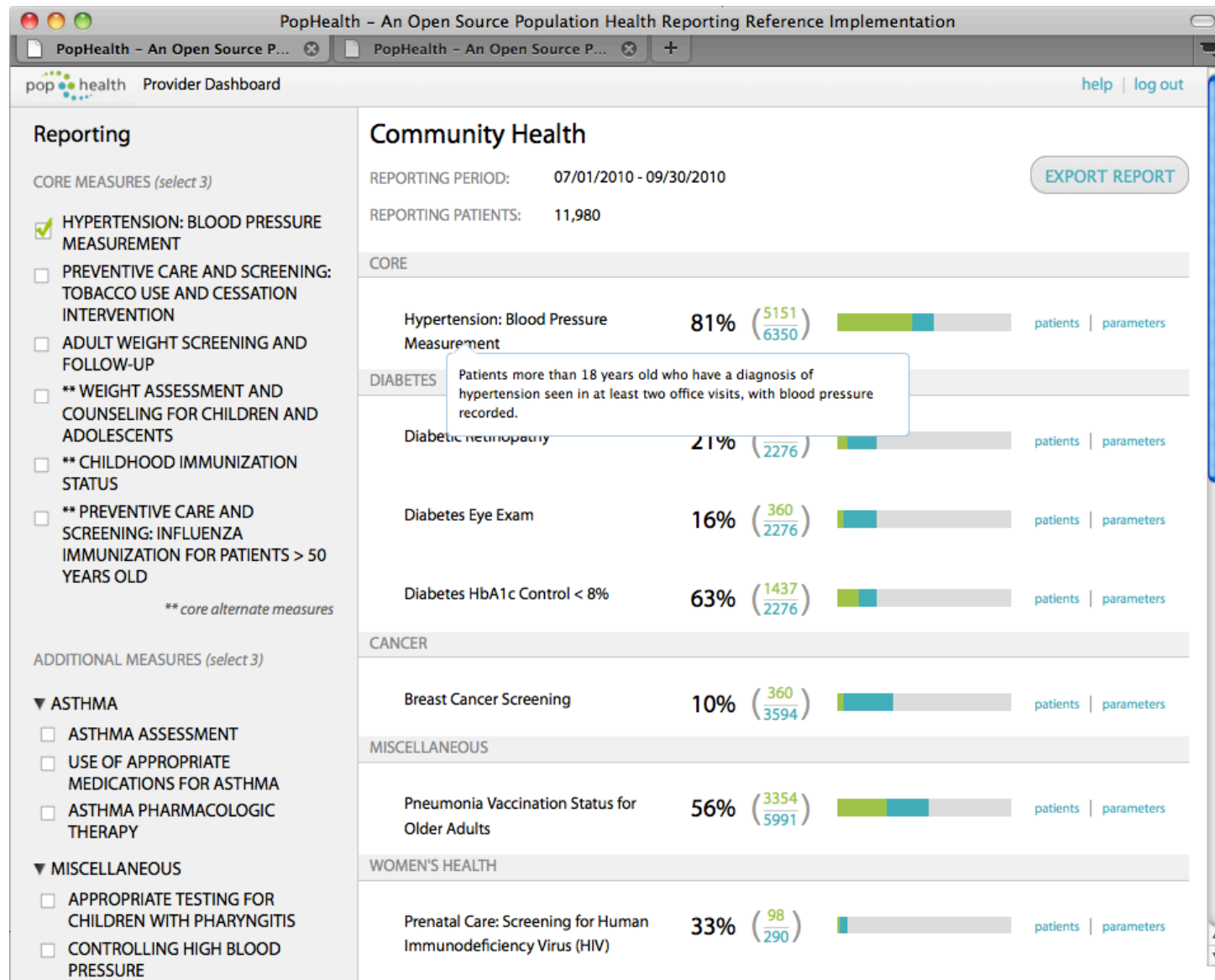
- **Standards-based data input**
  - Utilizes **ONC-certified EHR Continuity of Care data transmission standard** as patient data source
    - HITSP C32 XML
    - ATSM CCR XML
- **Open source solution easily deployed within Provider's firewall**
- **All identifiable patient data remains in provider practice to address security and privacy issues**
- **Provides aggregate stats and ability to drill down to named individuals**

# Data Process Flow

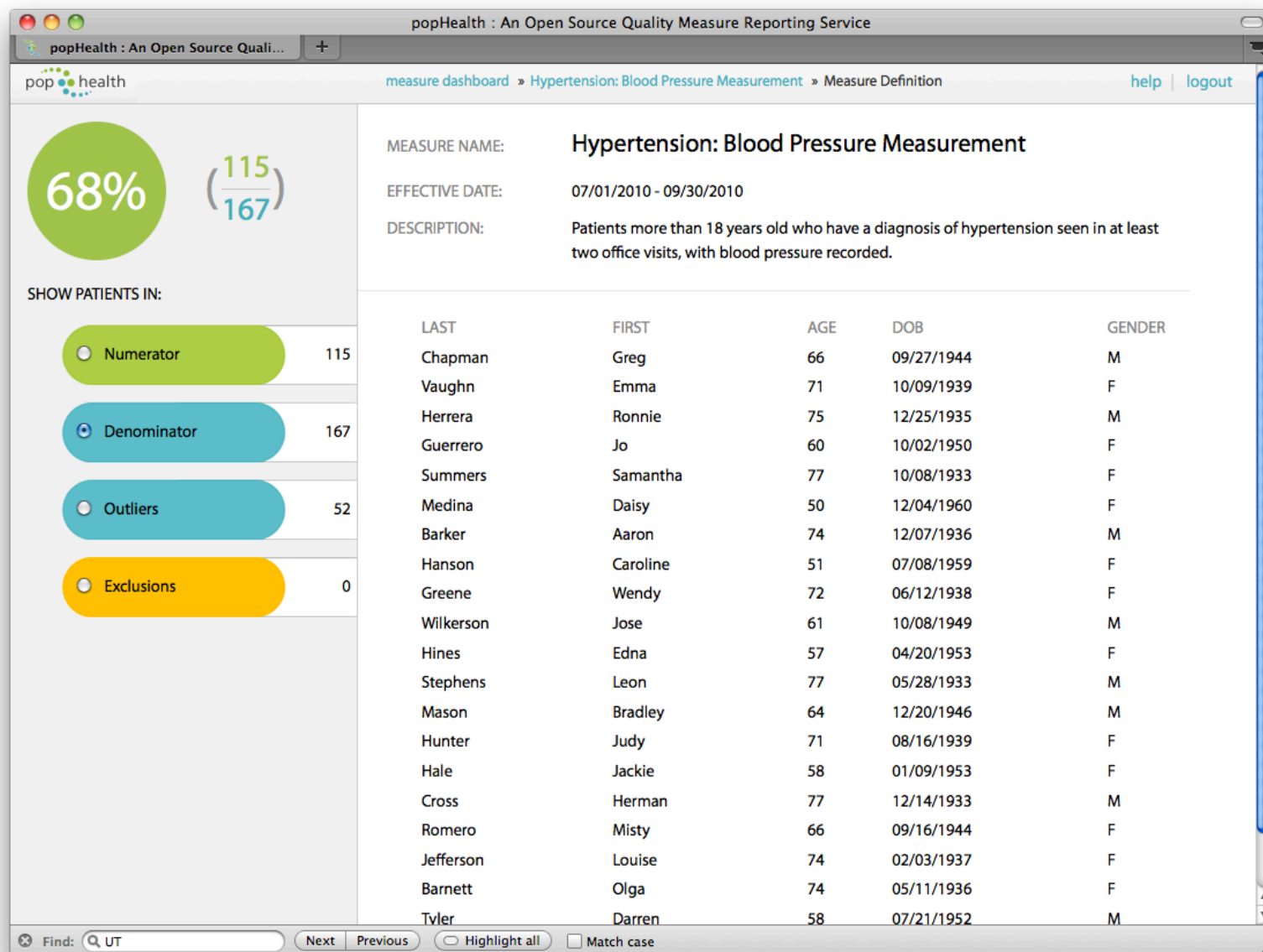




# Provider Dashboard



# Patient List



# Measure Definition Sample

popHealth : An Open Source Quality Measure Reporting Service

popHealth : An Open Source Quali...

pop health

[measure dashboard](#) » [Childhood Immunization Status](#) » Measure Definition

[help](#) | [logout](#)

82%

(<sup>126</sup>/<sub>153</sub>)

MEASURE NAME:

Childhood Immunization Status

EFFECTIVE DATE:

07/01/2010 - 09/30/2010

DESCRIPTION:

The percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DTaP); three polio (IPV); one measles, mumps and rubella (MMR); two H influenza type B (HiB); three hepatitis B (Hep B), one chicken pox (VZV); four pneumococcal conjugate (PCV); two hepatitis A (Hep A); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. The measure calculates a rate for each vaccine and two separate combination rates.

denominator ( 153 )

patient characteristic gender male

or

patient characteristic gender female

and

patient characteristic age between 1 and 2

and

encounter outpatient with pcp and obgyn

exclusions ( 0 )

medication administered >= 1 count measles, mumps and rubella (mmr) vaccine prior to 2 years old

or

medication administered >= 1 count mumps vaccine prior to 2 years old

or

diagnosis mumps resolved

or

allergy mumps vaccine allergy

and

medication administered >= 1 count measles vaccine prior to 2 years old

or

Find:

☐ Match case

Phrase not found



# Benefits:

## Quality Measure Integrity

### Validate Accuracy

- **Partnerships** with Measure Stewards to identify and resolve issues
  - American Medical Association (AMA)
  - National Committee for Quality Assurance (NCQA)
- **Testing** performed, both in-house and at provider pilot sites ensures accurate and reliable quality measure reporting

### Ensure Confidence

- **Providers** are empowered to improve care with accurate and reliable clinical quality measure reports
- **Vendors** incorporate quality measure programming that meets Meaningful Use certification requirements; relieved from parallel development

# Benefits of an Open Source Community

## **Creativity:**

- Stimulates design and programming innovation

## **Transparency:**

- Allows access and freedom to view, inspect, modify and re-distribute open source work

## **Auditability:**

- Provides accessibility to inspect and scrutinize the underlying source code for the software

## **Lower Cost:**

- Lowers financial costs normally associated with software development. Costs incurred by users to install, integrate and modify open source software

## For More Information

For more information on popHealth,  
please visit the project website at:

*[www.projectpophealth.org](http://www.projectpophealth.org)*

popHealth was featured at the HIMSS 2011  
Interoperability Showcase

Sponsored by:  
Office of the National Coordinator for Health IT  
Meaningful Use Division

# Backup Material

# Using Continuity of Care Records

- **popHealth's innovative design leverages the certified EHR generation of Continuity of Care records to produce clinical quality measure reports**
- **Benefits of this approach include:**
  - Utilizes standard CCR or C32 Continuity of Care files available per ONC Standards and Certification rule
  - Opportunity to reduce costs and speed implementation for quality measure reporting
  - Works with multiple EHR systems
  - Promotes Interoperability
  - Easily scales for new measures
- **Vendors/providers using clinical repositories for source data may directly integrate with popHealth and leverage the quality measure engine**





## **The MITRE Corporation**

**Operates Federally Funded Research and Development Centers (FFRDCs) in the public interest**

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**Assists the U.S. Government with scientific research & analysis, development & acquisition, and/or systems engineering & integration**

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**Refrains from manufacturing products, competing with industry, or working for commercial companies**

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**Previous technical background with continuity of care standards,  
Developed Laika, an open source EHR testing framework  
used in EHR certification process**