Health Measurement and Contributing Factors

NCVHS

Population Health Subcommittee

Meeting Information Needs for Health and Health Care

National Center for Health Statistics

February 9, 2010

Objective

A comprehensive health information infrastructure with improved capability that can monitor health care system performance in the context of population health and the social determinants of health

Purpose

- Improve population health throughout the nation
- Identify and combat disparities
- Establish and maintain quality standards
- Provide evidence based services at fair prices
- Ensure coverage for the US population

How Do We Currently Measure Population Health?

- National Surveys
- NHANES – clinical examinations & survey
- Vital statistics
- Medicare & MCBS (administrative data with linked quality-functional status metrics)
- EHRs and quality-functional status metrics
- BRFSS
- Independent statewide local surveys

Social Determinants of Health (SDOH)
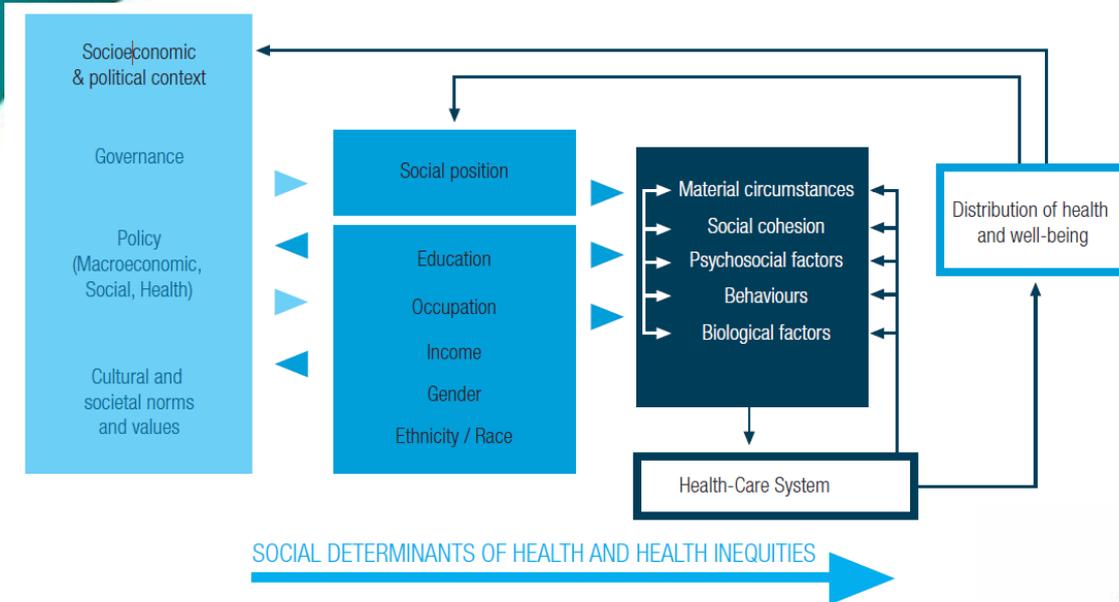
Source: Amended from Solar & Irwin, 2007

Figure 14.1 WHO Commission on the Social Determinants of Health

Dahlgren G, Whitehead M. 1993, cited in *Krieger N J Epi Comm Health* 2008;62:1098-1104.
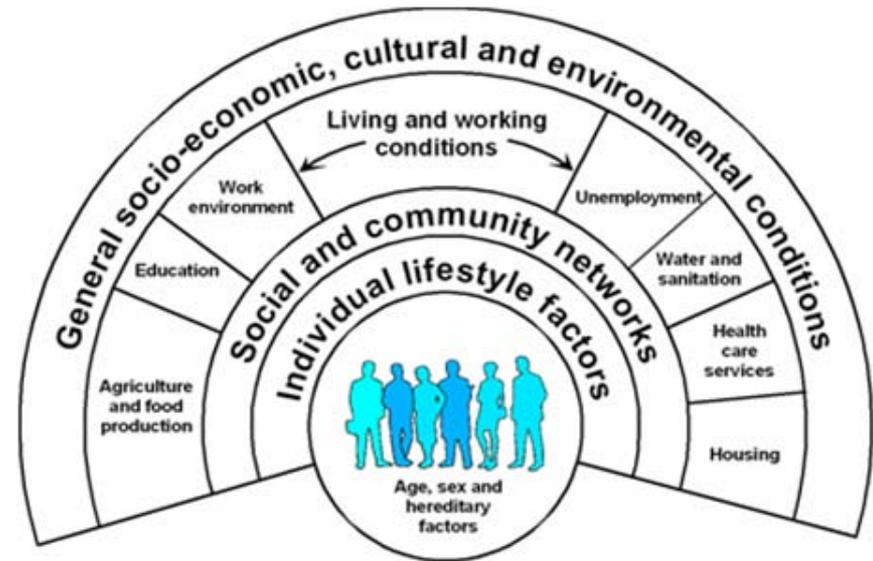
Importance of Local Data

- Public health action occurs at the local level
- Outcomes, programs, events and policies occur in specific places
- Effectiveness of interventions can be more specifically discerned with local data
- Health Services are delivered at the local level
- Health Disparities are in specific places
- Local population data provides context for clinical research and can be used to monitor natural experiments
- Low response rates -- need calibration

Building a Local, State and National Health Survey System

National and **<u>state</u>** NHIS estimates

Calibration
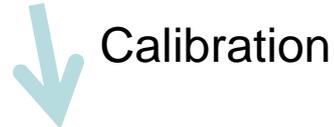
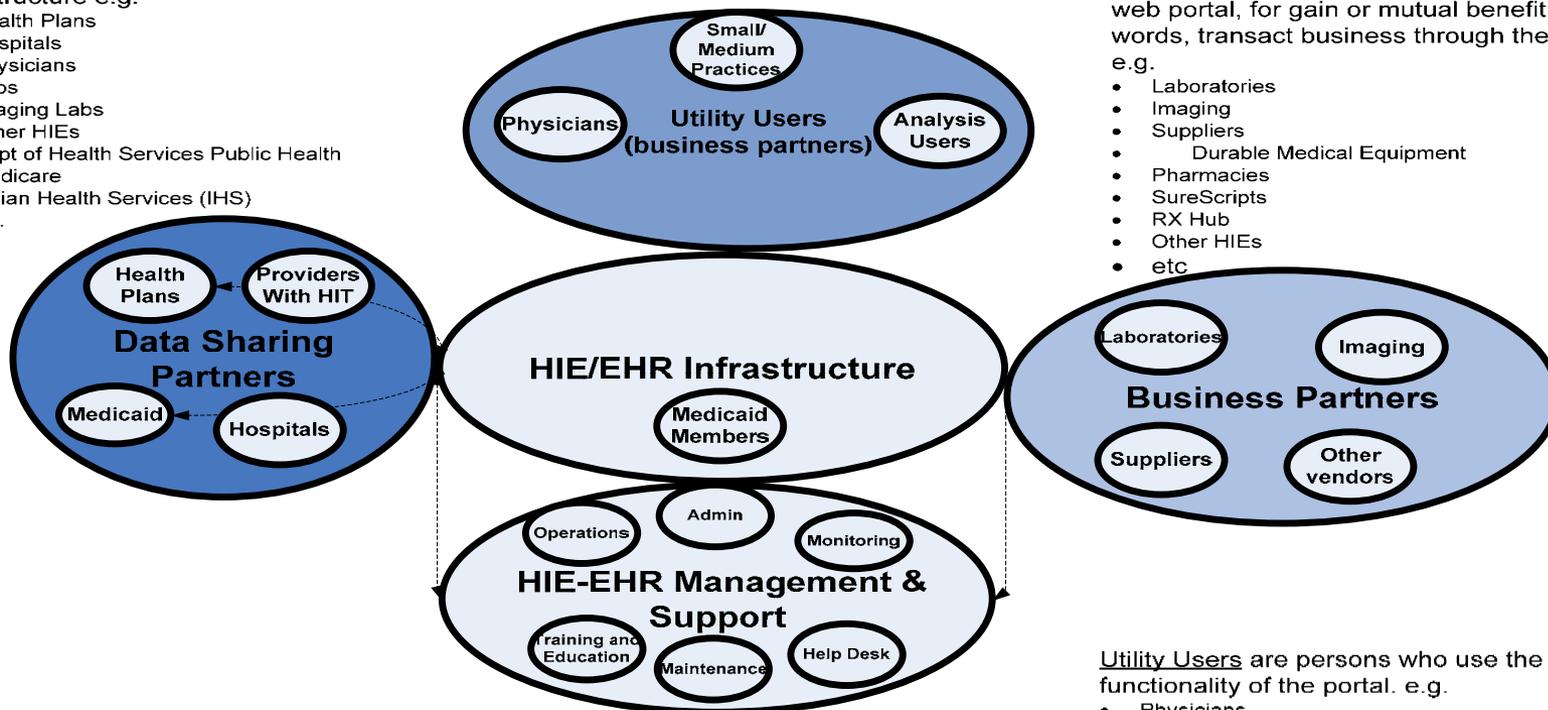National Network of **<u>state</u>**-wide local surveys

The Relationships:
Development for the Structural Phase

Data Partners are organizations that share or exchange data through the HIE-EHR Infrastructure e.g.
- Health Plans
- Hospitals
- Physicians
- Labs
- Imaging Labs
- Other HIEs
- Dept of Health Services Public Health
- Medicare
- Indian Health Services (IHS)
- etc.

Business Partners are organizations that expose web content and applications through the Utility web portal, for gain or mutual benefit; in other words, transact business through the Utility. e.g.
- Laboratories
- Imaging
- Suppliers
-     Durable Medical Equipment
- Pharmacies
- SureScripts
- RX Hub
- Other HIEs
- etc

Small/ Medium Practices

Utility Users (business partners)

Physicians

Analysis Users

Health Plans

Providers With HIT

Data Sharing Partners

Medicaid

Hospitals

HIE/EHR Infrastructure

Medicaid Members

Laboratories

Imaging

Business Partners

Suppliers

Other vendors

Admin

Operations

Monitoring

HIE-EHR Management & Support
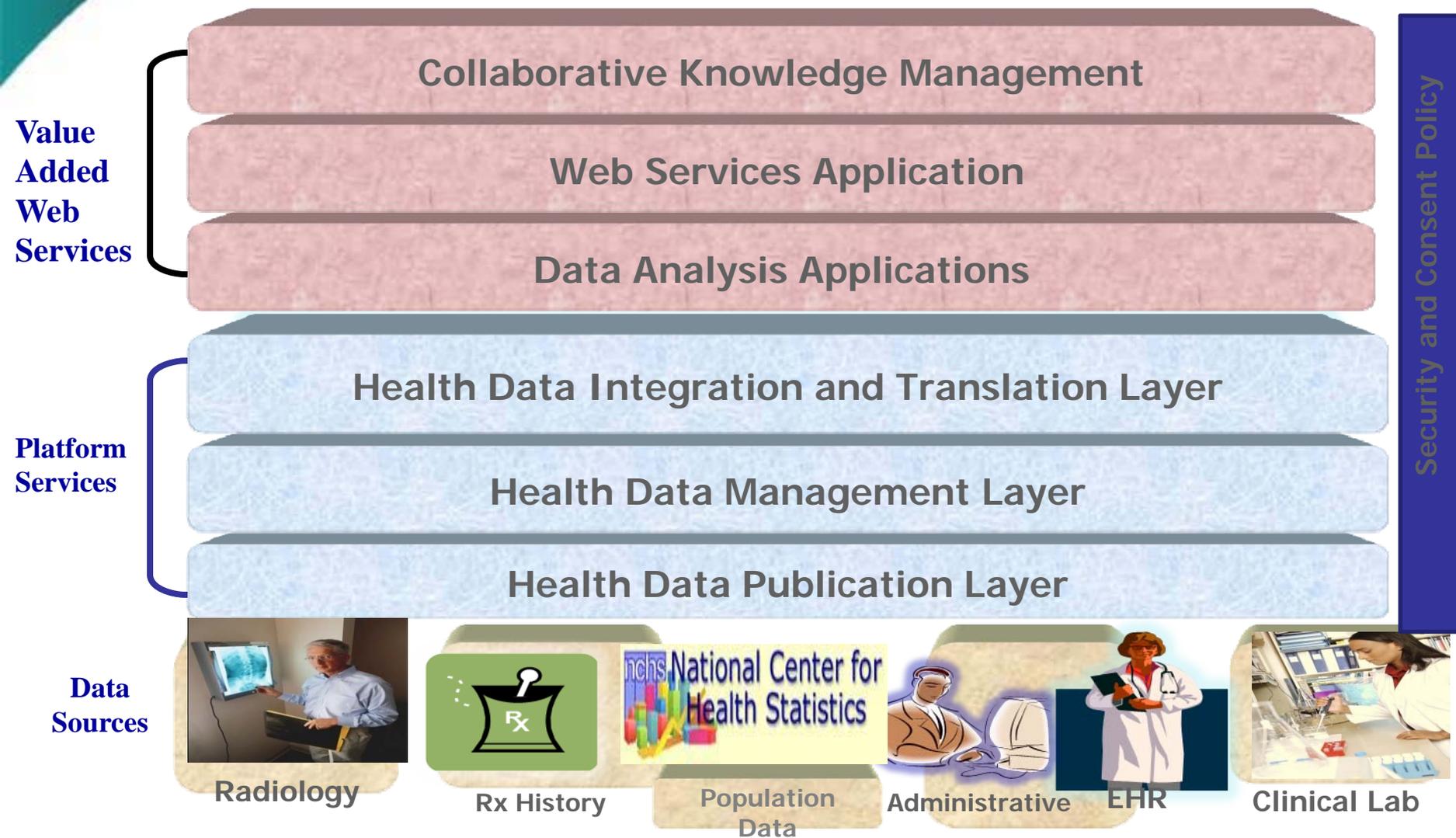
Training and Education

Maintenance

Help Desk

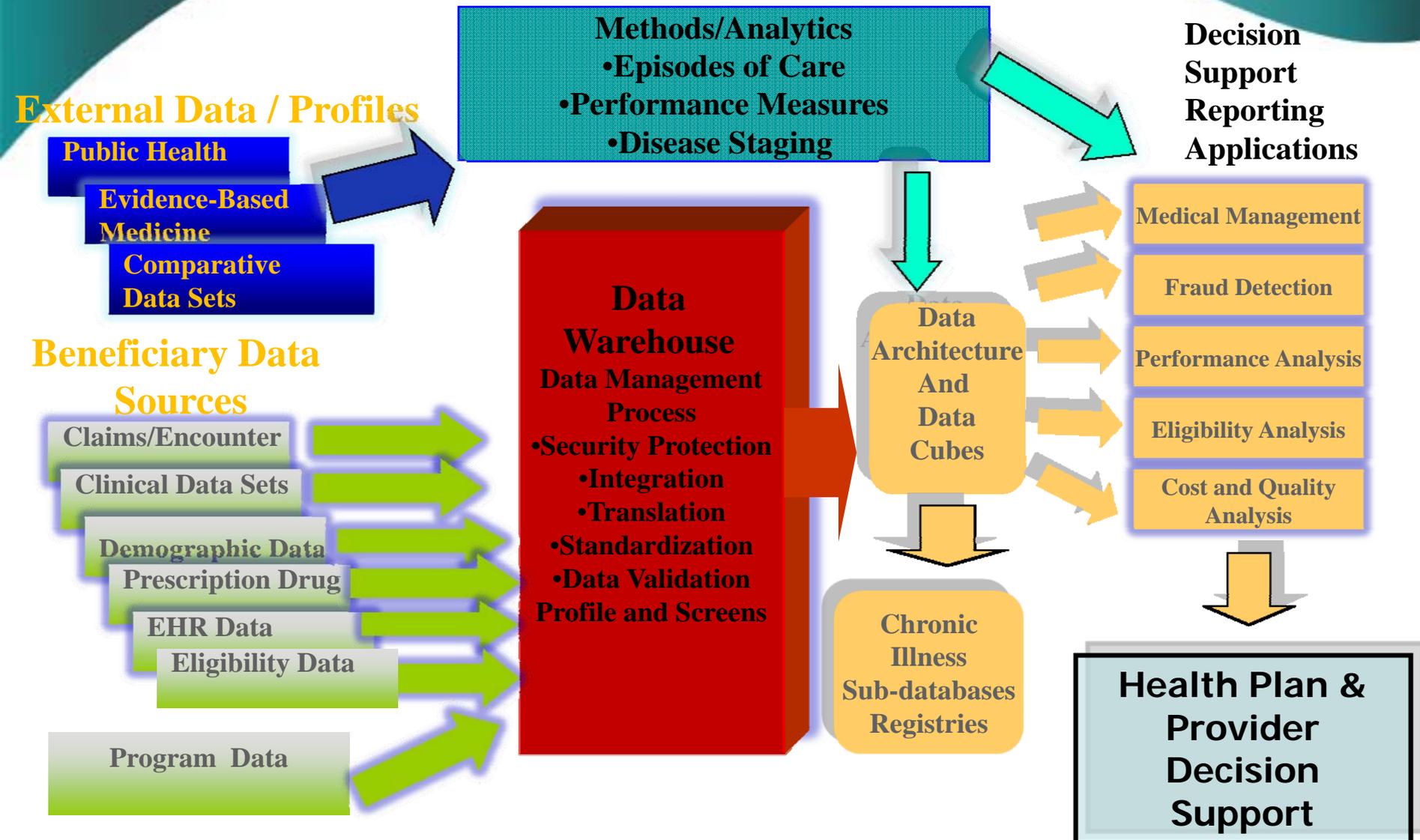Utility Users are persons who use the functionality of the portal. e.g.
- Physicians
- Small/medium Practices
- Analysis users (TBD)
- Emergency Depts
- Dept of Public Safety
- Department of Health Services
- etc

Administrative and management users use the portal to access administrative and management applications supported by the portal.

Health Information Exchange Platform Architecture

Value Added Web Services

- Collaborative Knowledge Management
- Web Services Application
- Data Analysis Applications

Platform Services

- Health Data Integration and Translation Layer
- Health Data Management Layer
- Health Data Publication Layer

Security and Consent Policy

Data Sources

Radiology

Rx History

National Center for Health Statistics

Population Data

Administrative

EHR

Clinical Lab

Enterprise Level Data Repository and Decision Support Infrastructure

Methods/Analytics
- Episodes of Care
- Performance Measures
- Disease Staging

Decision Support Reporting Applications

External Data / Profiles

Public Health

Evidence-Based Medicine

Comparative Data Sets

Beneficiary Data Sources

Claims/Encounter

Clinical Data Sets

Demographic Data

Prescription Drug

EHR Data

Eligibility Data

Program Data

Data Warehouse
Data Management Process
- Security Protection
- Integration
- Translation
- Standardization
- Data Validation
Profile and Screens

Data Architecture And Data Cubes

Chronic Illness Sub-databases Registries

Medical Management

Fraud Detection

Performance Analysis

Eligibility Analysis

Cost and Quality Analysis

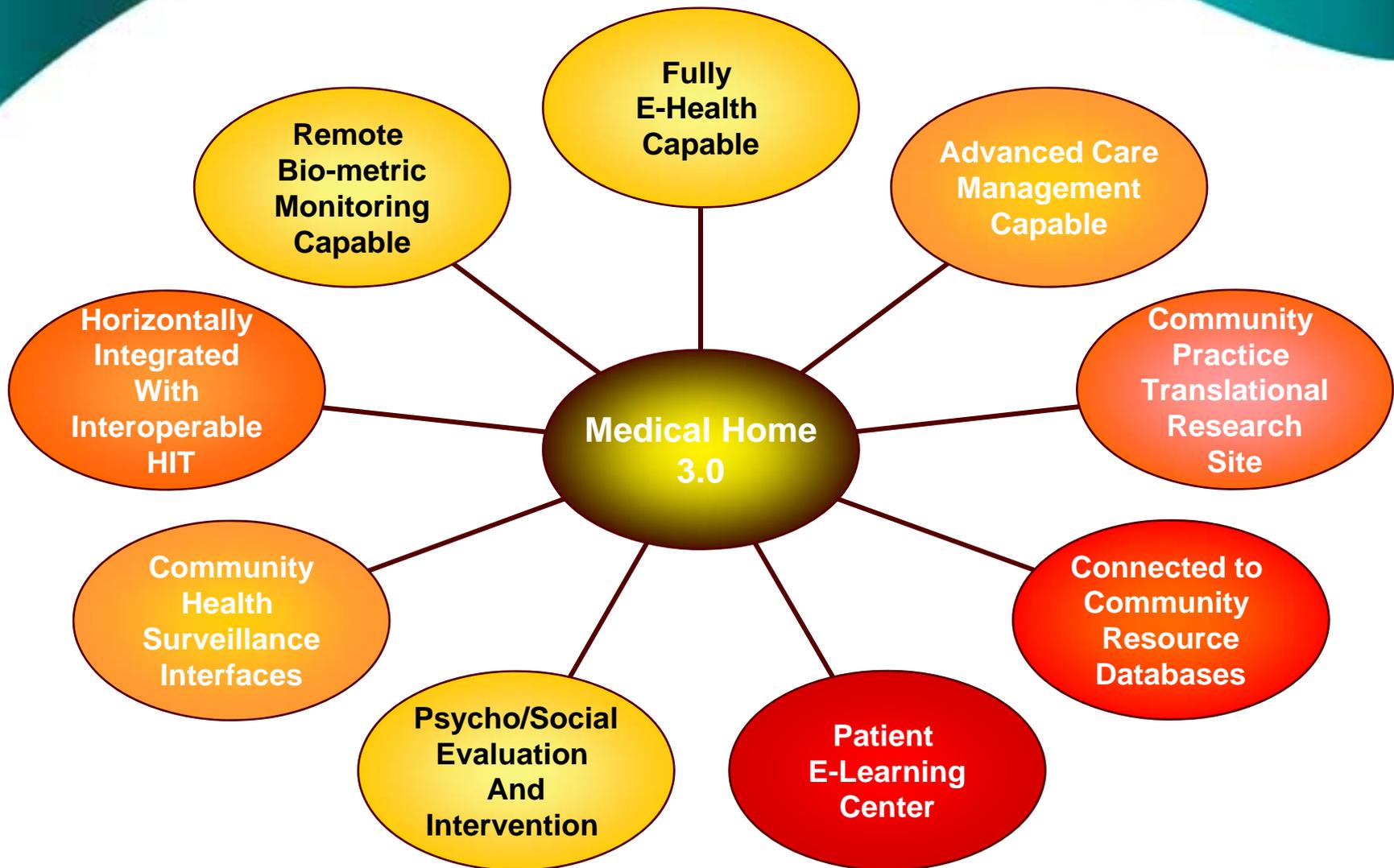**Health Plan & Provider Decision Support**

Medical Home 1.0

Medical Home 2.0
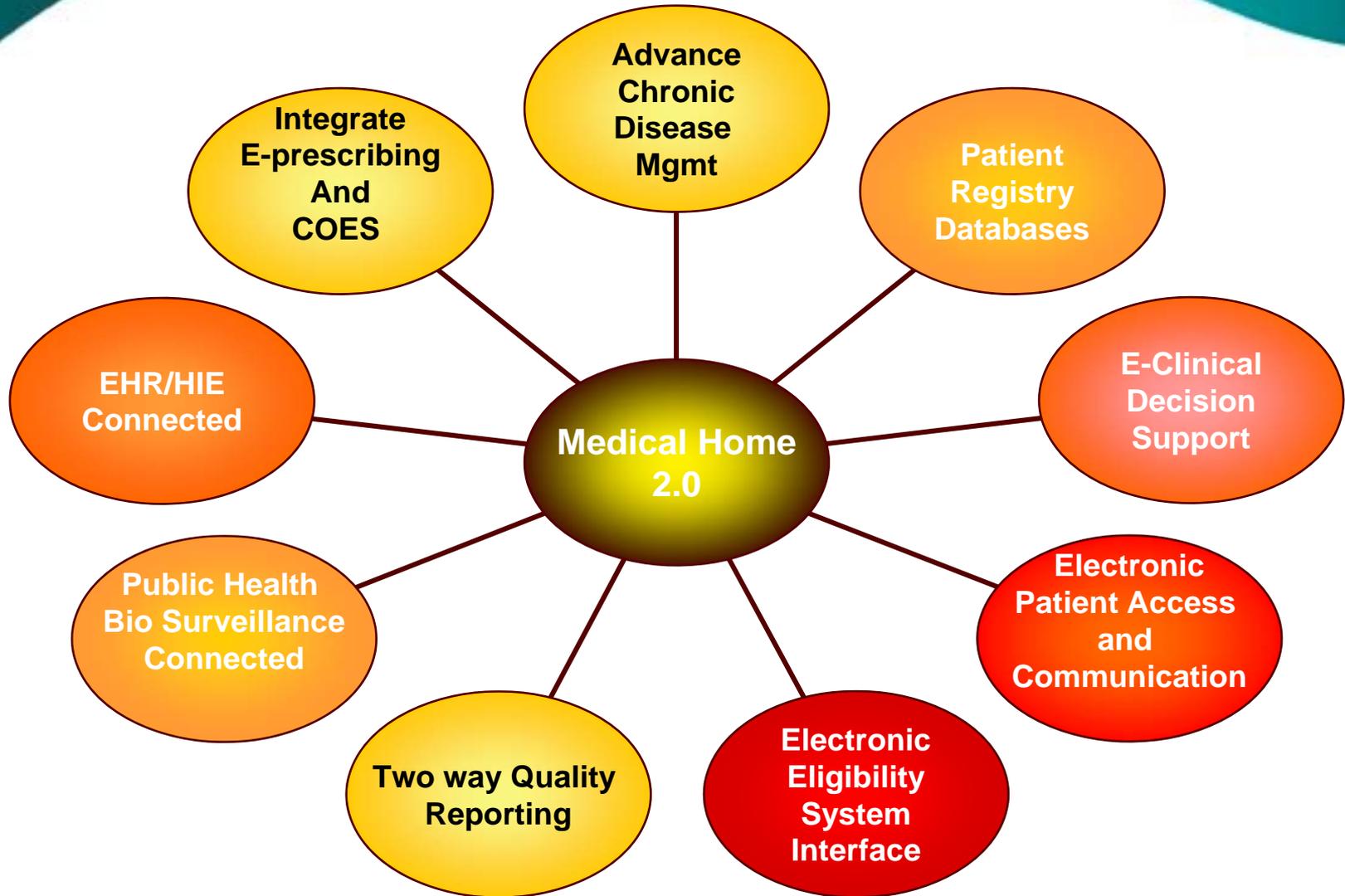
Medical Home 3.0

Findings

- National Surveys and Vital Statistics are our primary source of population-based information
- Administrative and Clinical data are limited for understanding population health needs
- Social Determinants provide a more comprehensive perspective on health
- A national system of statewide local data is needed
- HIE is emerging at the state and local levels
- Independent surveys are emerging at the state and local levels

Conclusions

- HIE and survey data need to be integrated into the same infrastructure

- Comparable data are needed at the local, state and national levels

- Clinical data needs to be understood in the context of population health and the SDOH

- Moving forward we need population-based data matched with health and medical records, and linked with SDOH for specific places

Discussion Question

What ***standards***, ***guidelines*** and ***requirements*** are needed to ensure data integration from surveys representing the US population, information from HIE, and SDOH data will be available to:

- Improve population health throughout the nation
- Identify and combat disparities
- Establish and maintain quality standards
- Provide evidence based services at fair prices
- Ensure coverage for the US population