What Data can bring to Accountable Care Communities

John Meier MD, MBA, CPE

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Objectives

- Stimulate thought and debate regarding Data, Population Health, Accountable Care Communities
  - Role of Data
  - Application of Data
  - Why Now?
  - Issues/Challenges of Data
  - Future of Data
  - Not: sources, templates, formats, standards, committees, councils, acronym download
- Neither I nor my spouse/partner have a financial/professional relationship with the manufacturer(s) or commercial product(s) and/or any commercial service(s) discussed in this presentation.

Data - Overview

Big Data in the Healthcare Sector
Scope (1 of 2)
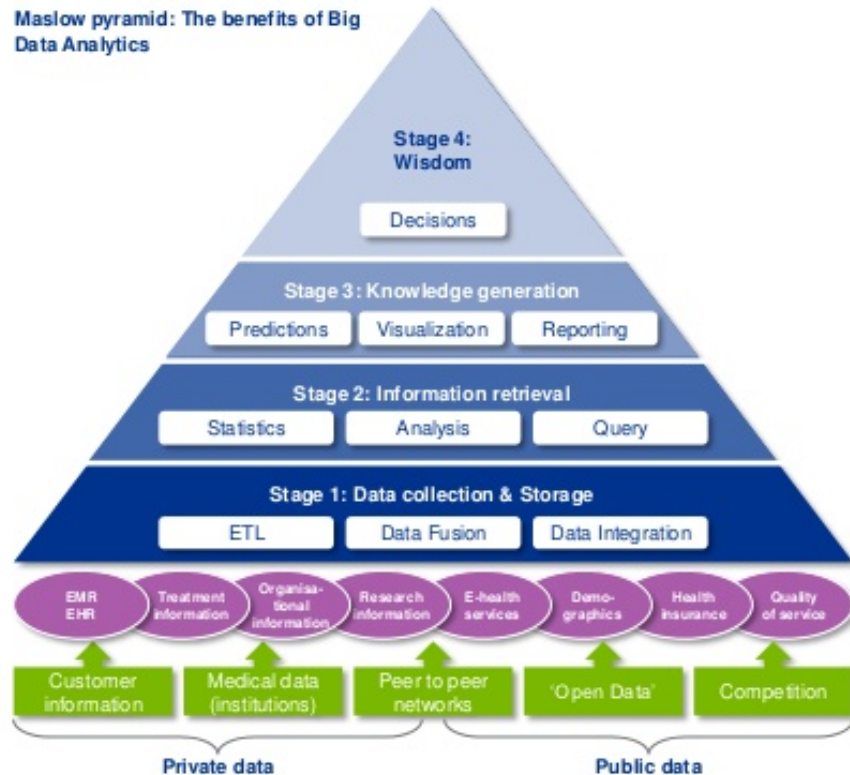
The Information Pyramid

More and more, IT is starting to play an important role in supporting the improvement and efficiency of healthcare. The amount of data is growing exponentially like storing electronic health records of patients (eg. MRI scans, charts, or telehealth video's), or all the organisational data of healthcare institutions and other medical data (eg. manuals, guidelines, clinical research).

Big Data Analytics is the missing link in organising all this data and creating valuable knowledge for all the involved parties. Cost reduction can for instance be achieved by improving the quality of healthcare by using the analysis of medical records to get insight into ineffective treatments or by elimination (human) errors.
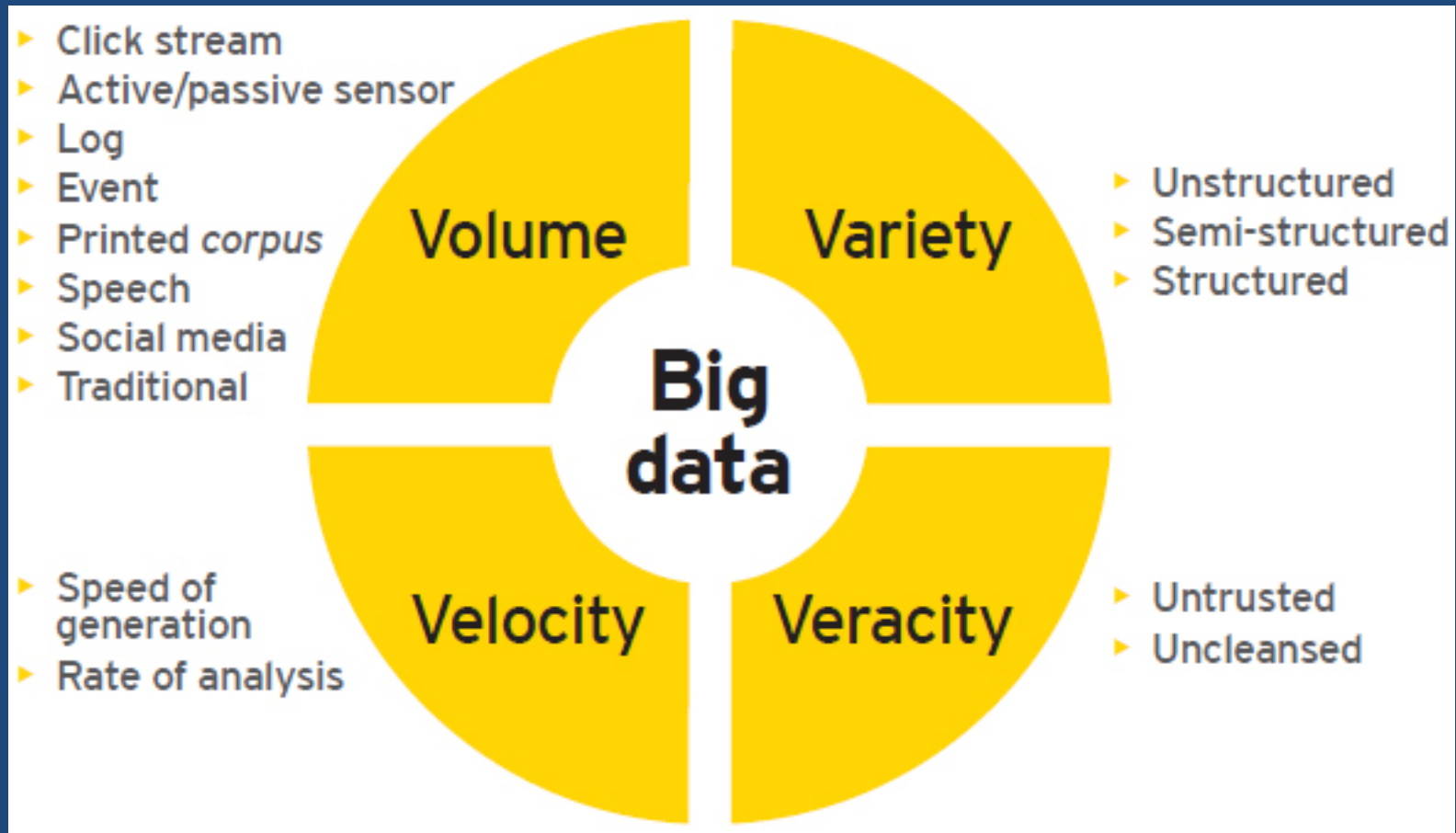
Another important focus is to use all the existing data from specific treatments to find new leads for ground breaking research. This type of analysis is now available because more and more data is stored digitally and accessible for different parties. Data of different types of sources like national or global demographics, Open Data and other relevant data can be combined with medical data to find clues for correlation and insights into a specific area.

The figure on the right shows the Maslow information pyramid. Effective Big Data analysis is the key component in providing Unique Customer Benefits (UCBs)

Maslow pyramid: The benefits of Big Data Analytics

- **Stage 4: Wisdom** — Decisions
- **Stage 3: Knowledge generation** — Predictions | Visualization | Reporting
- **Stage 2: Information retrieval** — Statistics | Analysis | Query
- **Stage 1: Data collection & Storage** — ETL | Data Fusion | Data Integration

EMR EHR | Treatment information | Organisational information | Research information | E-health services | Demographics | Health insurance | Quality of service

Customer information | Medical data (institutions) | Peer to peer networks | 'Open Data' | Competition

Private data | **Public data**

Data - Overview

Big Data: Changing the ways business compete and operate: Ernest and Young; April, 2014

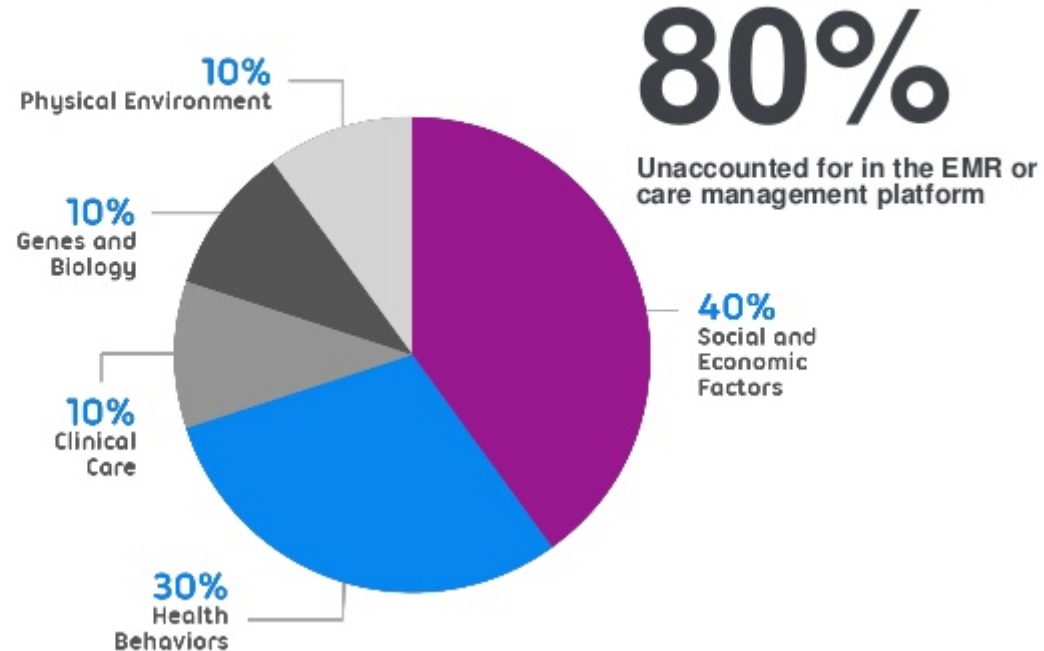# Evolution of Data/Sources in HealthCare

- Phase 1 – Revenue Cycle Management
- Phase 2 – Electronic Health Records
- Phase 3 – Population Health
- Phase 4 – Patient Centered Data

HealthITAnalytics, June 2016

- **EHR Socioeconomic Data a Must for Population Health Management**
- **Adding socioeconomic data into the electronic health record should be a top priority for providers and developers seeking to enable meaningful population health management.**
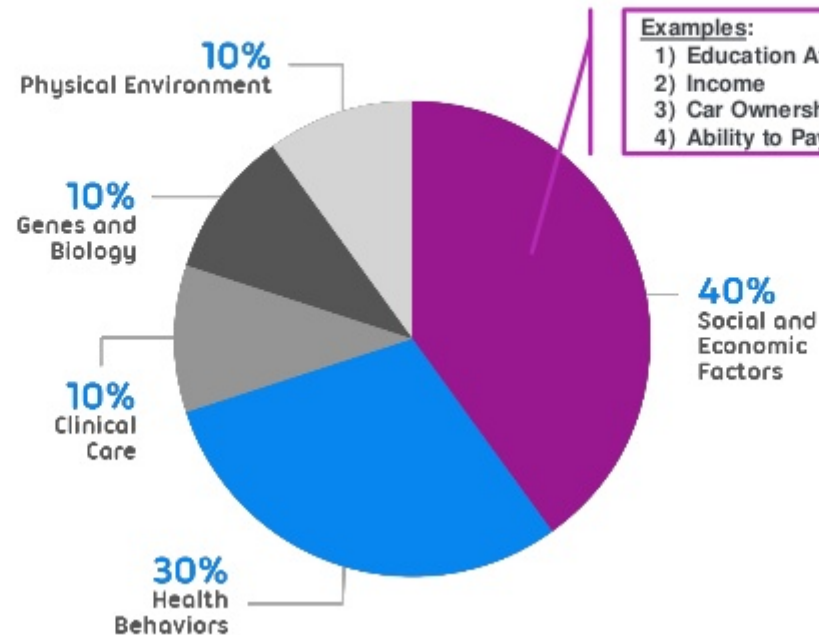
Health Drivers and Sources

Physical Environment

Population Health Drivers

10% Physical Environment
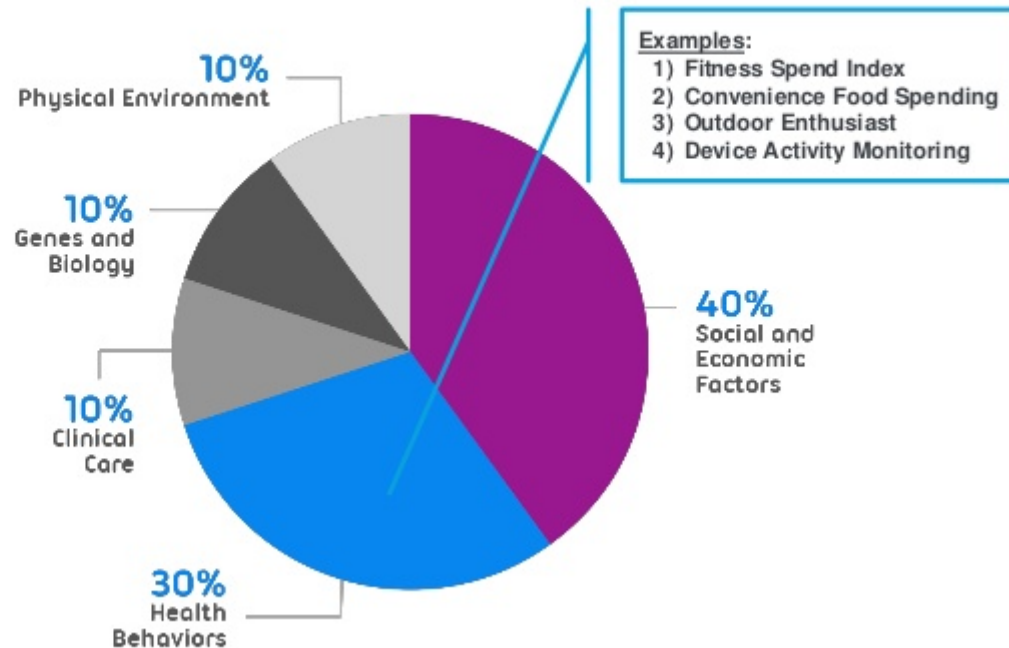
Examples:
1) Pollen Counts
2) Food Deserts
3) Distance to PCP
4) Distance to Fitness Facilities

10% Genes and Biology

10% Clinical Care

40% Social and Economic Factors

30% Health Behaviors
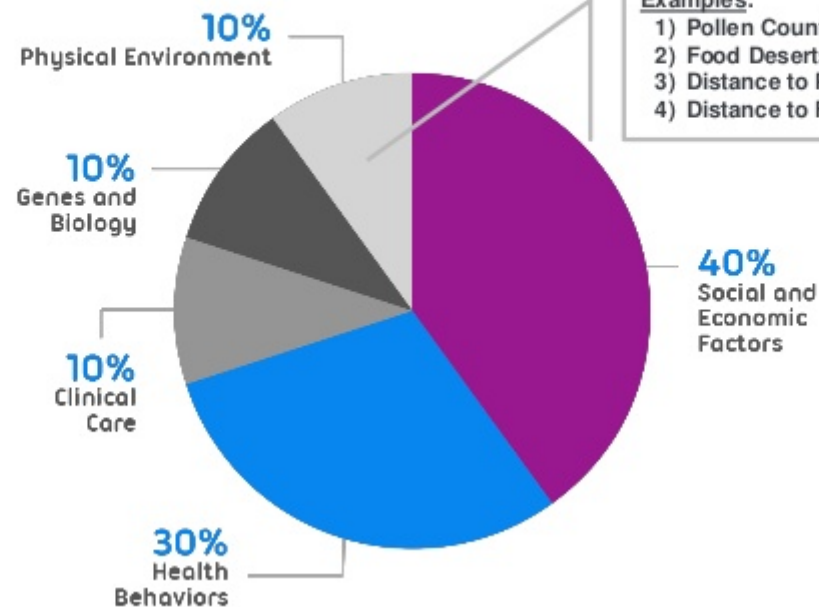
Social and Economic

Population Health Drivers

10% Physical Environment

10% Genes and Biology

10% Clinical Care

30% Health Behaviors

40% Social and Economic Factors

Examples:
1) Education Attainment
2) Income
3) Car Ownership
4) Ability to Pay

Health Behaviors

Data Hierarchy

Levels of SDH Precision

Precision

High
Low

1 Individual Person
2 Individual Household
3 U.S. Census Block Group
4 U.S. Census Tract
5 ZIP Code
6 County / MSA
7 State / Region
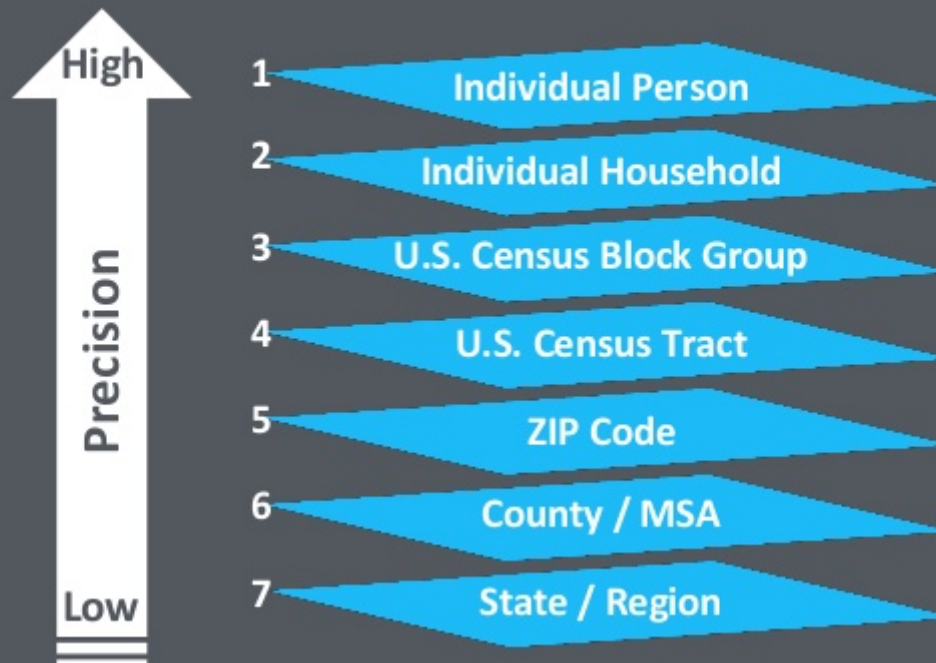
Precision vs. Action

Why Now?

- Move to "value"
  - Health entity taking on *RISK*
    - Quality
    - Health
    - Financial Outcomes
- Spectrum
  - Upside Only Shared Savings
  - Pay for Performance
  - Mix of limited Upside/Downside
  - Percentage of Premium
  - Medicare Advantage/Capitated
  - Insurance Product with full premium risk

Data Application - Mining

Top Five Data Mining Techniques: Benjamin Goeway; October 13, 2015

Data Application - Analytics

Data – Issues/Challenges

Data – Issues/Challenges

- Source
  - EMR vs. Insurance Company vs. Credit Company
- Age
  - EMR vs. Insurance Company vs. Credit Company
- Actionable
  - Who is the target
- Integrating into the workflow

Role of ACO/AHC

"

The costs of adding social and behavioral domains to EHRs, such as programming, modifying workflows, and intervening on positive screens often fall on the individual health practice or hospital. The movement toward population health management and ACOs may address this malalignment over time. In the meantime, costs remain a barrier.

Capturing Social and Behavioral Domains and Measures in Electronic Health Records
PHASE 2

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

ACO

- ACO – Accountable Care Organization
  - Physician/Health System Lead
  - CIN (clinically integrated network)
    - Special government rules for Stark and Anti-competitive behavior
  - Movement to "Value"
    - Taking on more and more financial risk for
      - Quality, Health and Financial outcomes
  - Forms
    - Government: MSSP, Next Gen, CPC+
    - Commercial

ACH

- AHC – Accountable Health Community
  - CMS Medicare/Medicaid Initiative (32 participants)
    - Screening of community-dwelling beneficiaries to identify certain unmet health-related social needs;
    - Referral of community-dwelling beneficiaries to increase awareness of community services;
    - Provision of navigation services to assist high-risk community-dwelling beneficiaries with accessing community services; and
    - Encouragement of alignment between clinical and community services to ensure that community services are available and responsive to the needs of community-dwelling beneficiaries.
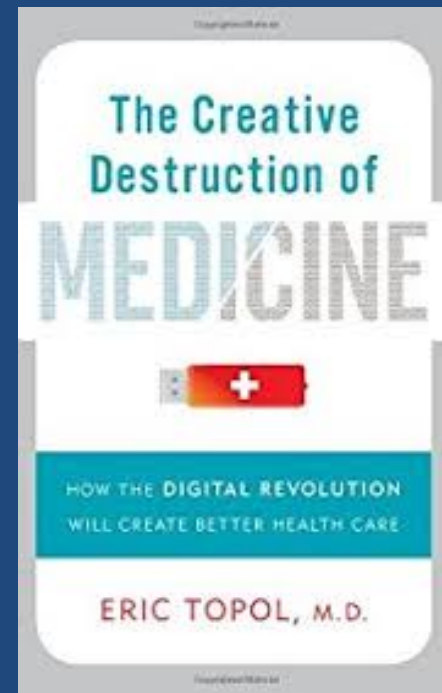
Data - Future

Figure 1. Vision of the Health IT Ecosystem
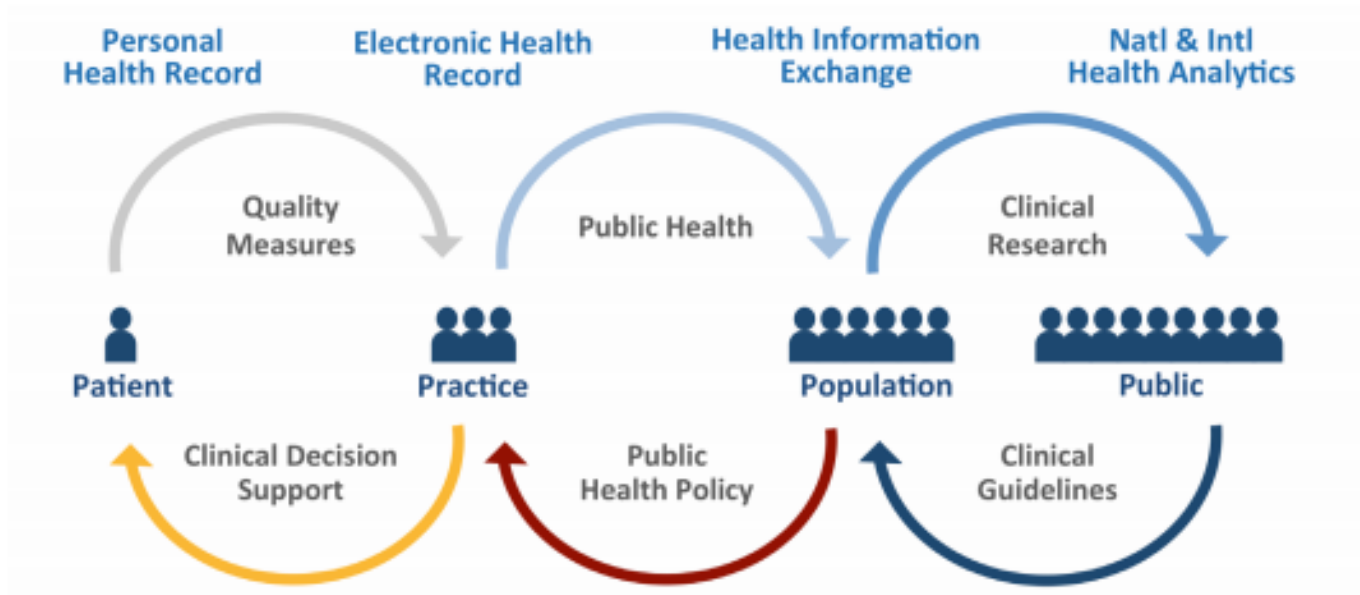
Source: Office of the National Coordinator

Health Data Future

Conclusion

- Health Data Evolution
- Social Determinants of Health
  - Type
  - Use
- ACO vs. OR with ACH
- Challenges
- Future