

COLLEGE OF POPULATION HEALTH

# Population Health Intelligence Turning Data into Action

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**Jefferson**  
Thomas Jefferson University

# Today's Presenters

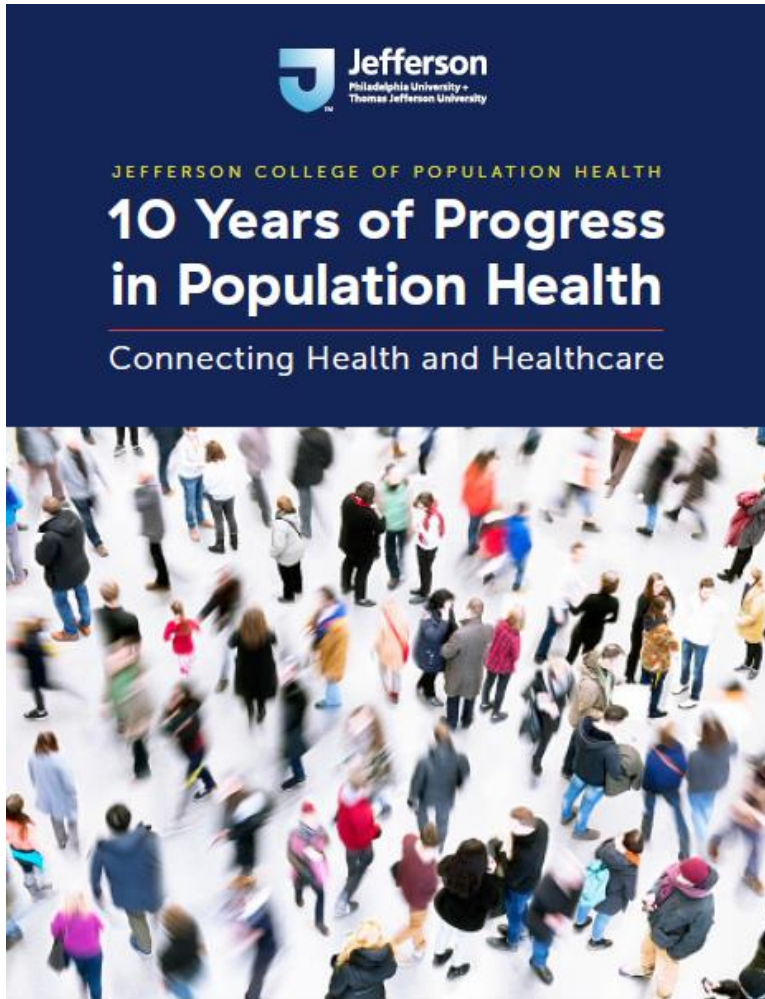


**Karen Walsh, MS, MBA**  
*Program Director, Population  
Health Intelligence Program  
Jefferson College of  
Population Health*



**Harm Scherpbier, MD, MS**  
*Chief Medical Information  
Officer  
HealthShare Exchange*

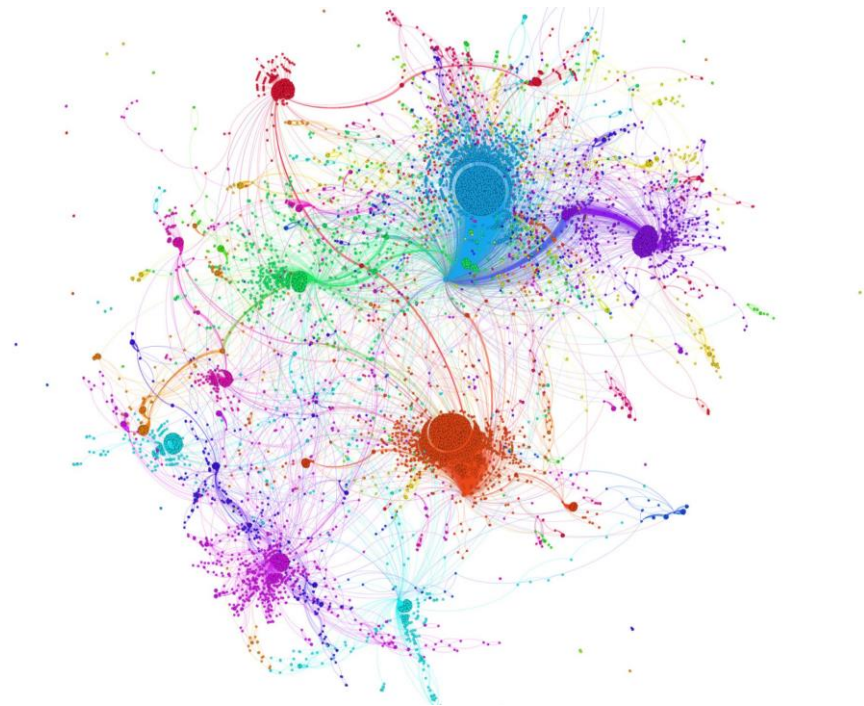
# Jefferson College of Population Health



To prepare leaders with global vision to *develop, implement* and *evaluate* health policies and systems that improve the health of populations and thereby enhance the quality of life

# Agenda

- Population Health
- Population Health Intelligence
- The MS-PHI Program



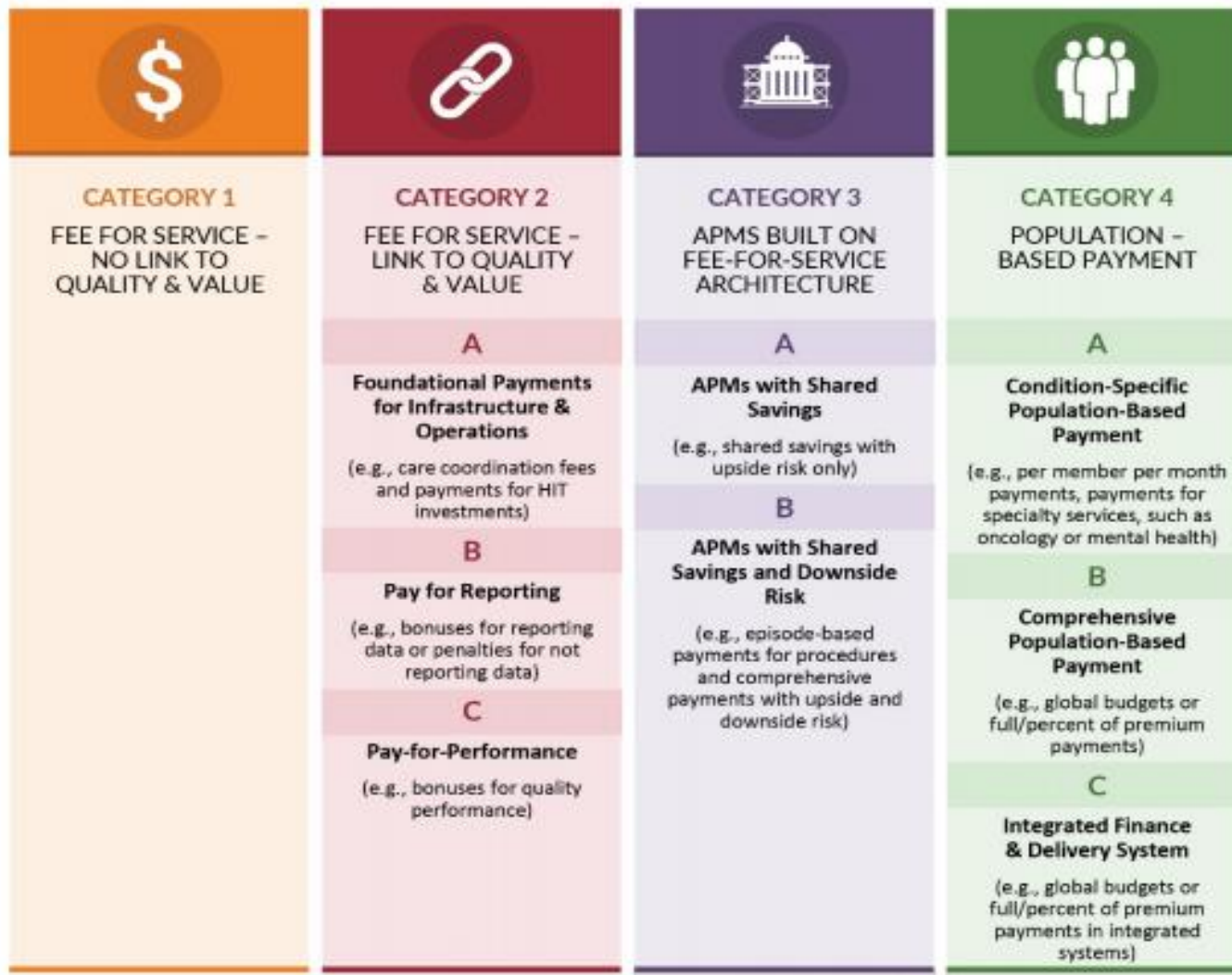
Source: <https://www.flickr.com/photos/104820964@N07/15380881731/>

# Population Health Definition

- Population Health is:
- A healthcare delivery model,
- Coupled with a reimbursement or payment model,
- Designed to deliver the most health, at the lowest cost, to a defined population,
- Supported by a data infrastructure.

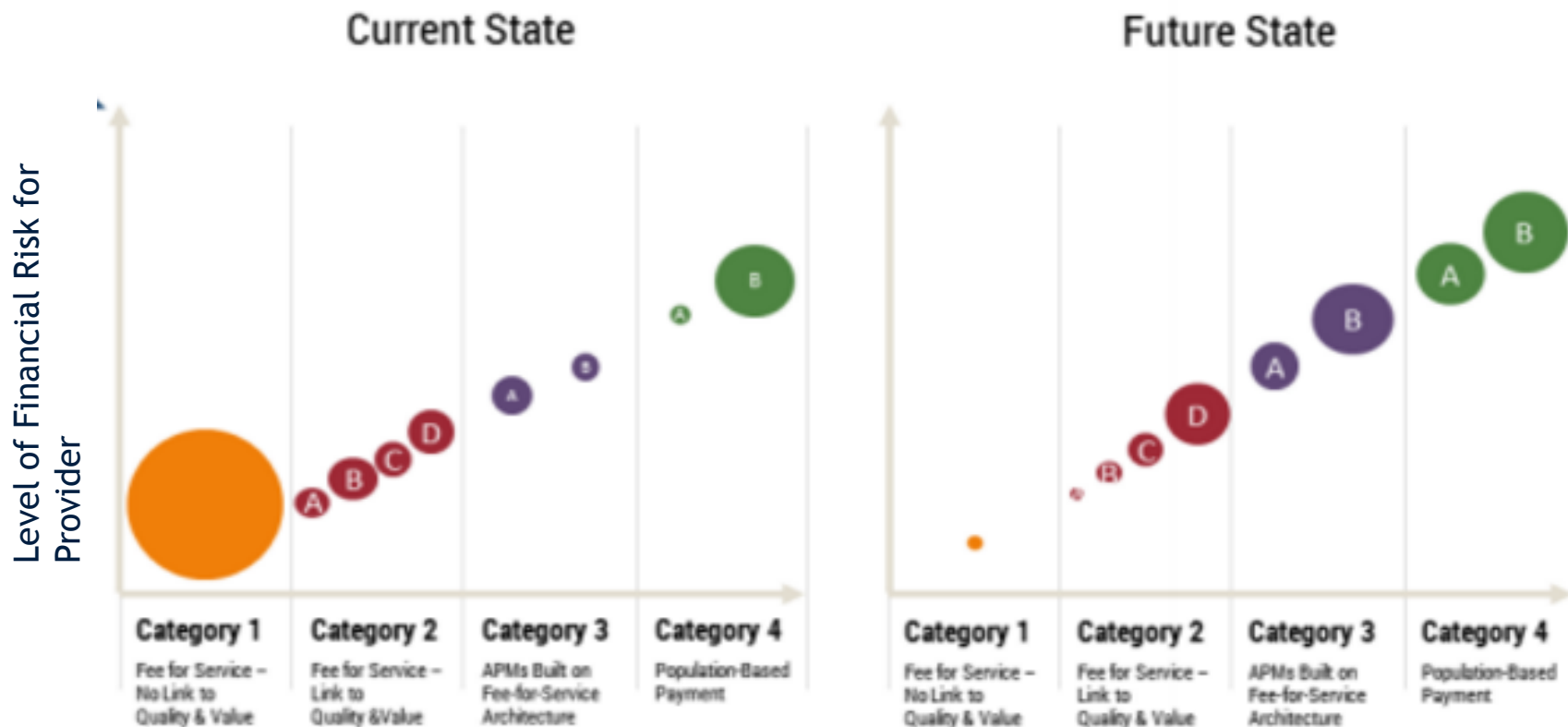
<http://scherpbier.health/population-health-needs-a-tight-definition-to-succeed/>

# HCP-LAN Alternative Payment Model Categories



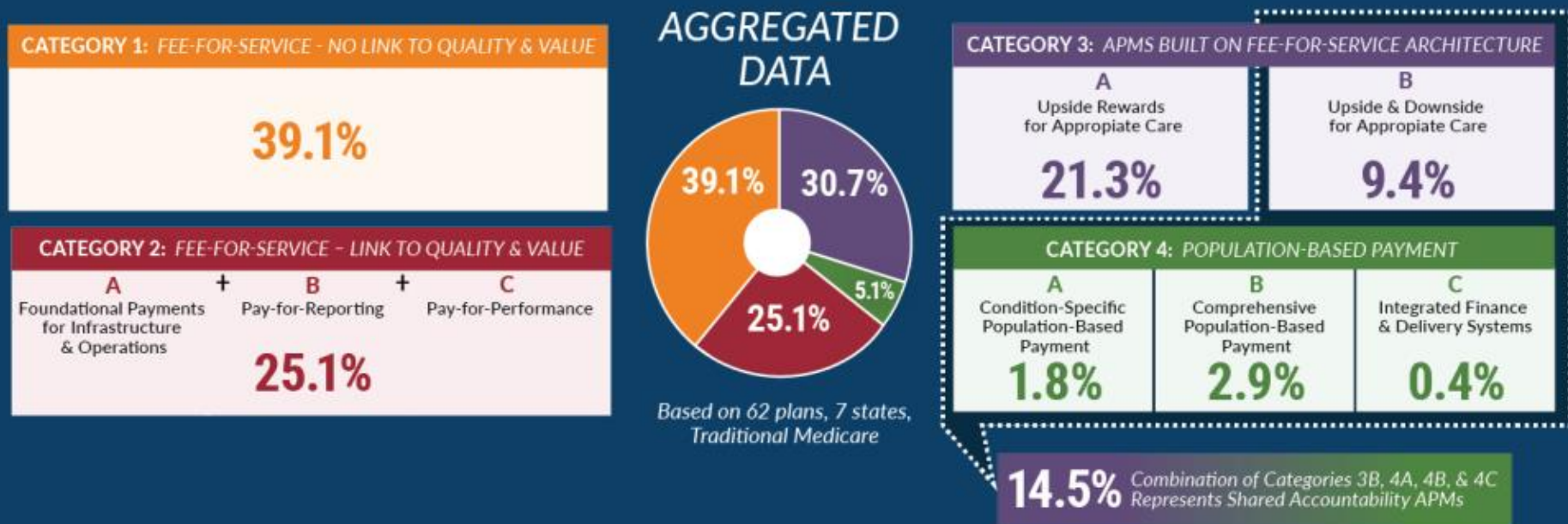
<https://hcp-lan.org/workproducts/apm-methodology-2019.pdf>

# Current State and Future State



Health Care Payment Learning & Action Network - Alternative Payment Model Framework - 1/12/2016

# 2019 HCPLAN update on 2018 payments



- Takeaway:
- Shift to value-based care and population health models is well underway - and will continue
- Operationalizing Population Health requires a data analytics and intelligence framework

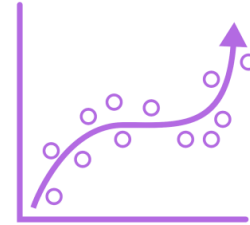


# What is Population Health Intelligence?

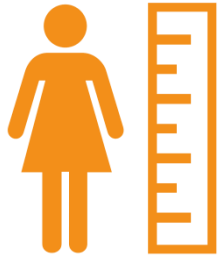
We coined the term Population Health Intelligence® to describe a new discipline whose role is to collect, organize, harmonize, analyze, disseminate and act upon the data available to clinicians, health system leaders, the pharmaceutical and biotechnology industry, and healthcare payers. The mantra of Population Health Intelligence is “turning data into insight and action.”



# What is Population Health Intelligence?




True population health improvement will be driven by insights derived and distilled from vast amounts of heterogeneous and distinct data that are no longer limited to the physician office or hospital medical record system.



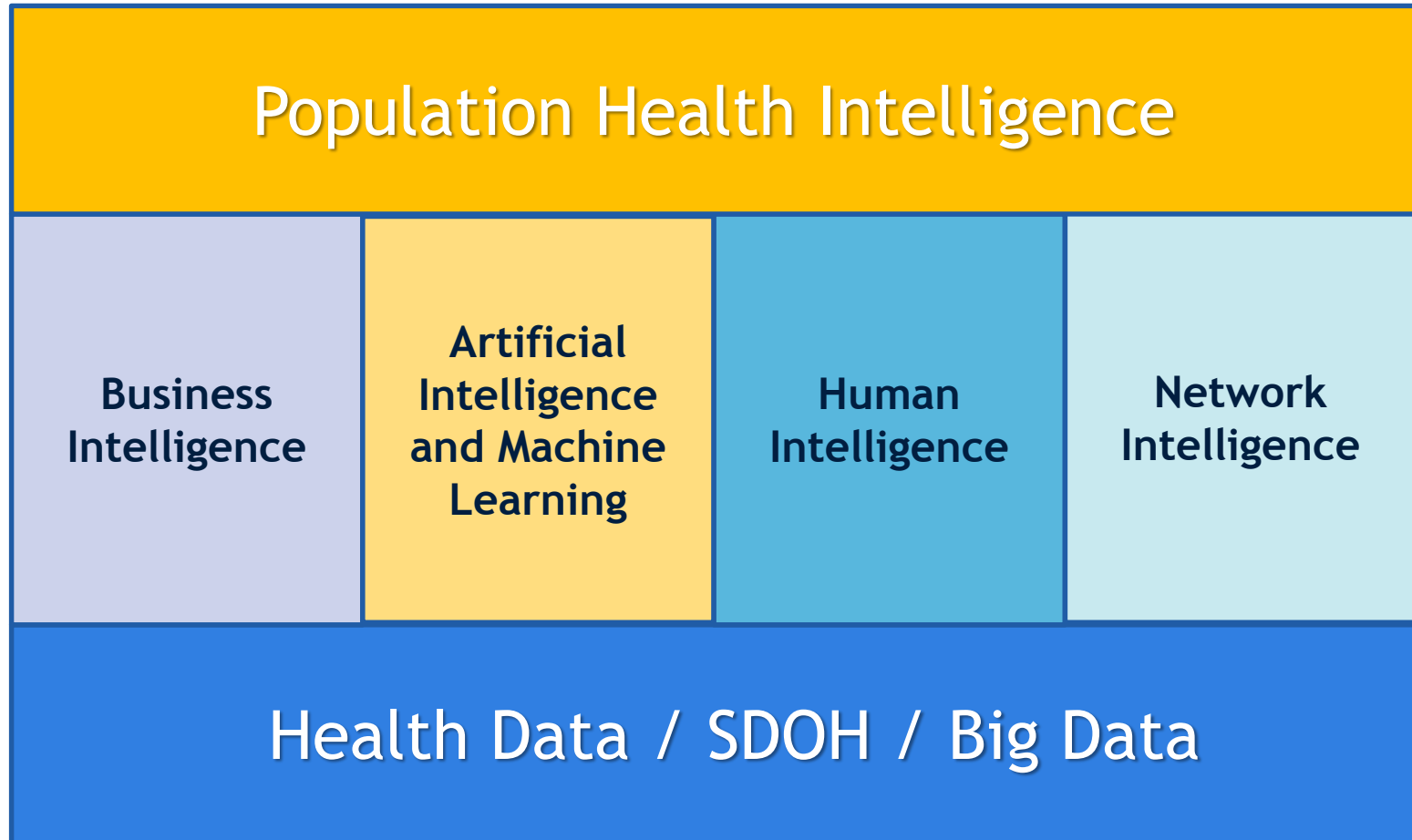
In addition to understanding data, these individuals must also be experts in population health, health system organization, terminology and culture.



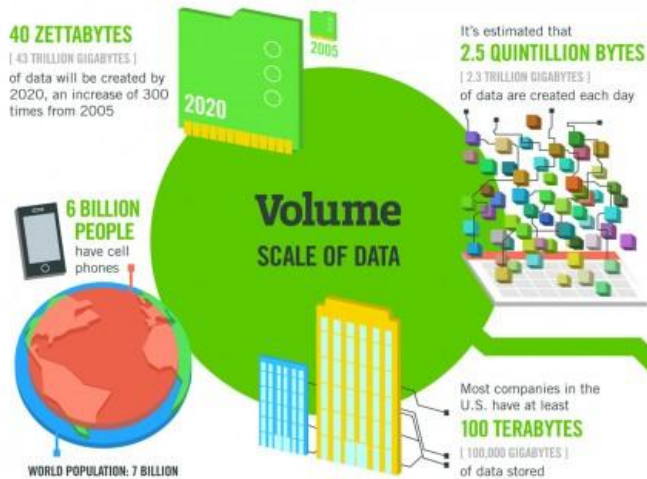
# HIMSS Analytics Maturity Stack

STAGE	 Adoption Model for Analytics Maturity Cumulative Capabilities
7	Personalized medicine & prescriptive analytics
6	Clinical risk intervention & predictive analytics
5	Enhancing quality of care, population health, and understanding the economics of care
4	Measuring and managing evidence based care, care variability, and waste reduction
3	Efficient, consistent internal and external report production and agility
2	Core data warehouse workout: centralized database with an analytics competency center
1	Foundation building: data aggregation and initial data governance
0	Fragmented point solutions

# Population Health Intelligence Foundations



# What is Big Data?



## The FOUR V's of Big Data

From traffic patterns and music downloads to web history and medical records, data is recorded, stored, and analyzed to enable the technology and services that the world relies on every day. But what exactly is big data, and how can these massive amounts of data be used?

As a leader in the sector, IBM data scientists break big data into four dimensions: **Volume, Velocity, Variety and Veracity**

Depending on the industry and organization, big data encompasses information from multiple internal and external sources such as transactions, social media, enterprise content, sensors and mobile devices. Companies can leverage data to adapt their products and services to better meet customer needs, optimize operations and infrastructure, and find new sources of revenue.

By 2015, **4.4 MILLION IT JOBS** will be created globally to support big data, with 1.9 million in the United States.



As of 2011, the global size of data in healthcare was estimated to be **150 EXABYTES** [ 161 BILLION GIGABYTES ]



**30 BILLION PIECES OF CONTENT** are shared on Facebook every month



By 2014, it's anticipated there will be **420 MILLION WEARABLE, WIRELESS HEALTH MONITORS**

**Variety**  
DIFFERENT FORMS OF DATA

**4 BILLION+ HOURS OF VIDEO** are watched on YouTube each month



**400 MILLION TWEETS** are sent per day by about 200 million monthly active users



The New York Stock Exchange captures **1 TB OF TRADE INFORMATION** during each trading session



Modern cars have close to **100 SENSORS** that monitor items such as fuel level and tire pressure

**Velocity**  
ANALYSIS OF STREAMING DATA

By 2016, it is projected there will be **18.9 BILLION NETWORK CONNECTIONS** - almost 2.5 connections per person on earth



**1 IN 3 BUSINESS LEADERS** don't trust the information they use to make decisions



Poor data quality costs the US economy around **\$3.1 TRILLION A YEAR**



**27% OF RESPONDENTS**

in one survey were unsure of how much of their data was inaccurate

**Veracity**  
UNCERTAINTY OF DATA

Sources: McKinsey Global Institute, Twitter, Cisco, Gartner, EMC, SAS, IBM, MEPTec, QAS



# What is Big Data?

Organizations believe they lack the capabilities to generate meaningful business insights from their data.

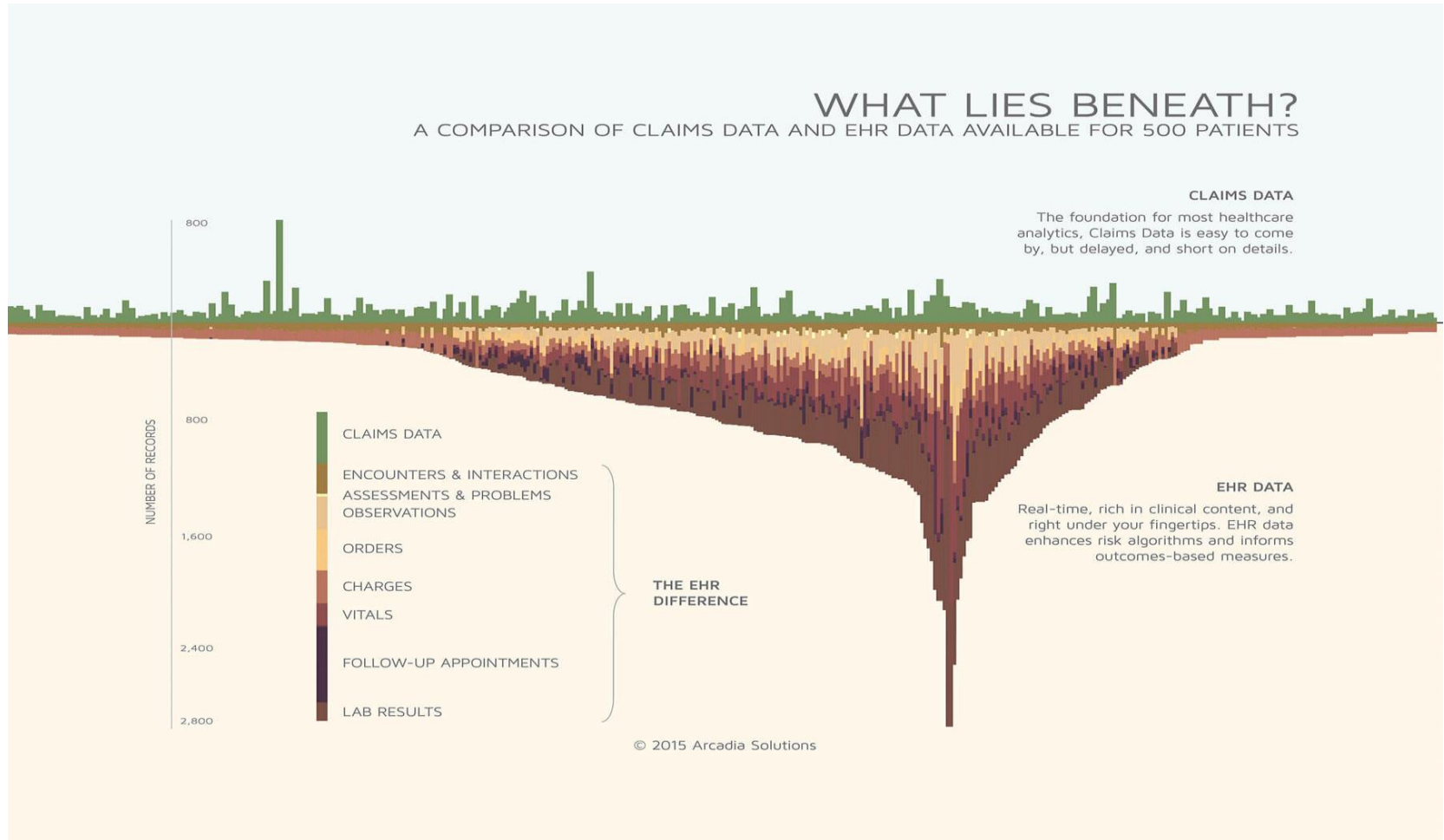


<https://www.informatica.com/products/big-data.html#fbid=9apcWPrU6Ob>

# HealthCare Data

## WHAT LIES BENEATH?

A COMPARISON OF CLAIMS DATA AND EHR DATA AVAILABLE FOR 500 PATIENTS



Source: <https://whatsthebigdata.com/2016/04/12/comparing-claims-data-and-ehr-data-for-the-same-patients/>

# Population Health Intelligence Training

Population  
Health  
Strategy

Healthcare  
Data

Data  
Science

Data  
Visualization

Data  
Governance

Analytical  
Leadership

Statistics

Epidemiology

Tools and  
Technology

Case  
Studies

Implementation  
Science

Social  
Determinants  
of Health



# Who should consider PHI training?

**Healthcare  
Plans**

**Community  
Organizations**

**Pharmacy  
or Biotech**

**Healthcare  
Settings**

**Academic  
Organizations**

**Public/  
Government**

**Healthcare  
Business  
Consulting**

**Healthcare  
Administration**

**Healthcare  
Professional  
Organizations**

# Population Health Intelligence



- Certificate and Master's Degree Program
- 2-day Boot Camp (Fall 2020)

Learn more at: [Jefferson.edu/PHI](https://jefferson.edu/PHI)  
Information Session: 2/25/20 from 12-1pm Eastern

Contact: [Karen.Walsh@Jefferson.edu](mailto:Karen.Walsh@Jefferson.edu)