

Healthcare Transformation

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A Frightening Journey For Healthcare Systems...

Value Capable + Risk Capable + Margin Capable



Fee-for-service

- Reduced ER visits
- Reduce re-admissions
- Reduce admissions
- Reduced specialty visits
- Reduced procedures /1000

Revenue

Value-based

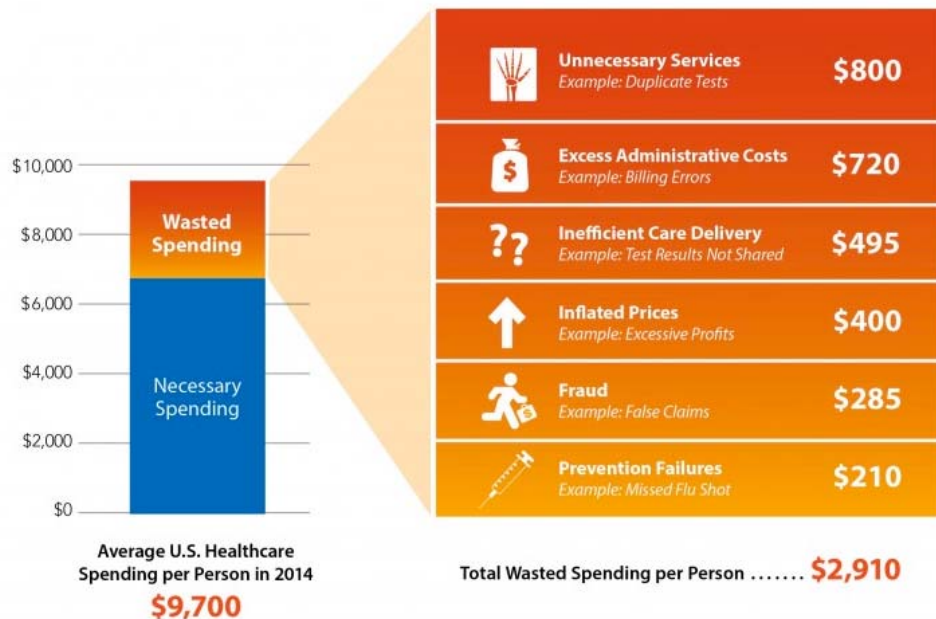
- Capitated risk
- Gainshare contracting
- Care coordination/Patient engagement
- Patient Care Medical Home/Primary Care Physician engagement
- Electronic Medical Record/Central Data Repository
- Grow marketshare
- Improve margin

\$765 Billion

In Avoidable Costs

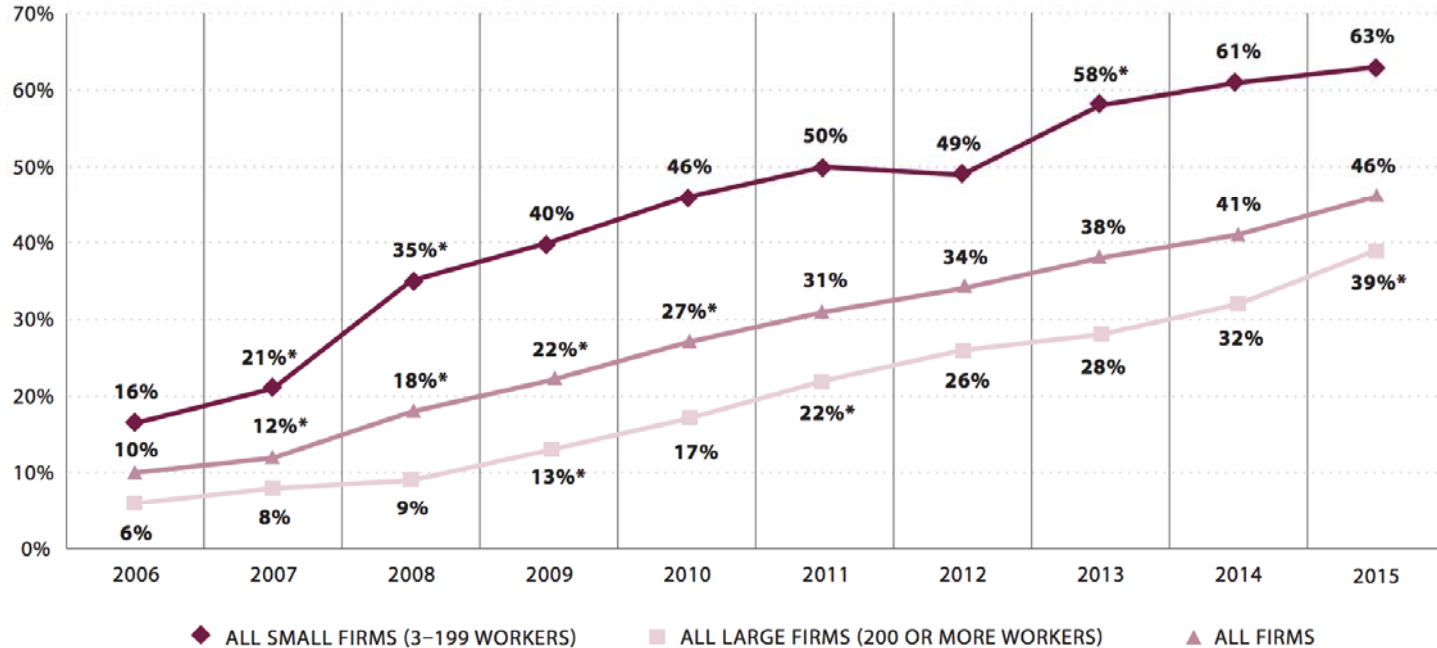
Source: Kaiser Family Fund

Approximately 1 in 3 Health Care Dollars is Waste
Can We Afford This?



High Deductible Health Plans on the Rise...

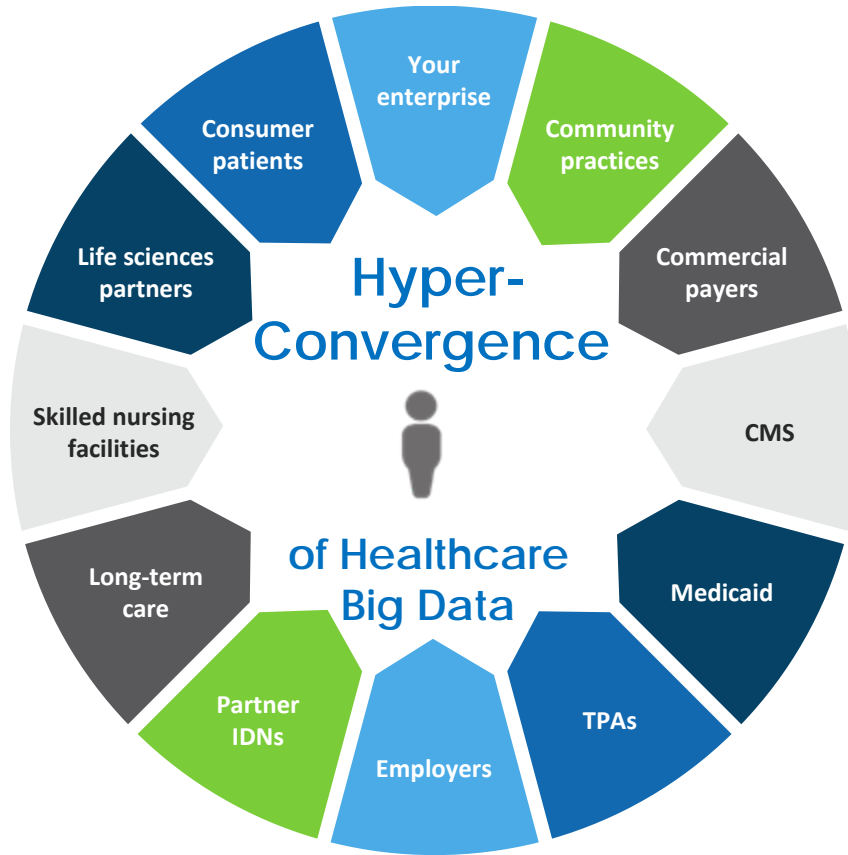
Percentage of Covered Workers Enrolled in a Plan with a General Annual Deductible of \$1,000 or More for Single Coverage, by Firm Size, 2006–2015



* Estimate is statistically different from estimate for the previous year shown ($p < .05$).

NOTE: These estimates include workers enrolled in HDHP/SO and other plan types. Average general annual health plan deductibles for PPOs, POS plans, and HDHP/SOs are for in-network services.

SOURCE: Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 2006-2015.



Healthcare Data is the baddest of Big Data...

- Volume
- Velocity
- Variety
- Veracity**

Exogenous data

(Behavioral, socioeconomic environmental / weather, behaviors, habits, family history, education, living situation, access, satisfaction)

60% of data

1100 TB

generated per lifetime

Genomics data

30% of data

6 TB

generated per lifetime

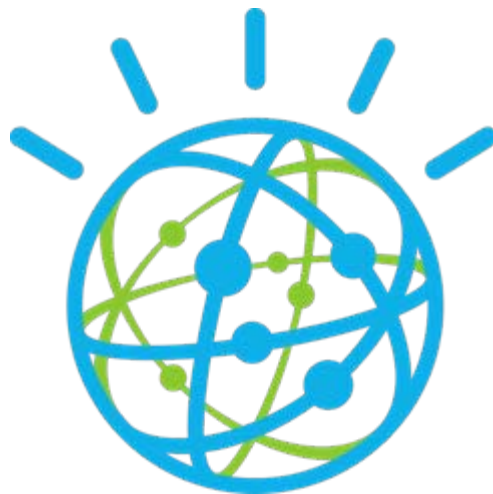
Clinical & claims data

10% of data

0.4 TB

generated per lifetime





Hello, my name is Watson

The Growth of Watson Health

IBM Steps Up to the Challenge of Transformation



PhyTEL, enabling the delivery of a 'Best-in-KLAS' suite of population health management tools, leverages evidence-based chronic and preventive care protocols that address the entire spectrum of timely, coordinated, and provider-led care directly to your members.



Explorys, housing the most powerful clinical and claims dataset in the world, applies powerful analytics to a broad range of clinical data to drive provider-led solutions for population health management, value-based care delivery, and benchmarking across 55 million patients.



Merge Healthcare, bringing 30 billion processed images from 7,500 facilities in the United States, helps imaging-intensive provider specialists reduce cost, increase efficiency, and improve quality.



The Weather Channel, generating differentiating insights from proprietary Weather Company models and air quality and pollen data, receives 26 billion daily requests from a growing mobile device network of 40 million current users.



Truven Health Analytics, implementing and maintaining SSAE 16 certified data aggregation, provides warehousing and analytic services on 4 Petabytes of data impacting decisions for 1 in 3 Americans.



Benchmark Network

Net-New Knowledge Through a Learning Network

UNIQUE LIVES 55 MILLION	U.S. POPULATION 15%	HEALTHCARE NETWORKS 28
PROVIDERS 317 THOUSAND	HOSPITALS 360	LONGITUDINAL DATA POINTS 315 BILLION
LIVE CONNECTORS 4,000+	COMBINED COST OF CARE \$69 BILLION	PRE-BUILT ANALYTICS 1,000+

LEARN & ACT



Explorys Analytics & Reporting Apps



Explorys SuperMart



Phytel Population Health Management Apps

TRANSFORM

BIG DATA

Data Curation Engine



Patient Matching Engine



Data Governance Engine



Risk & Prediction Engine



Measure and Gap Engine



Benchmark Engine



Smart List Engine



Search Engine



Data Publishing Engine



ACQUIRE

Health Data Gateway

Ambulatory EHRs

Inpatient EHRs

Laboratory

Exogenous Data

Pharmacy

Satisfaction Surveys

Claims & Health Plans

Billing & Accounting

Data Warehouses

HIE/HL7

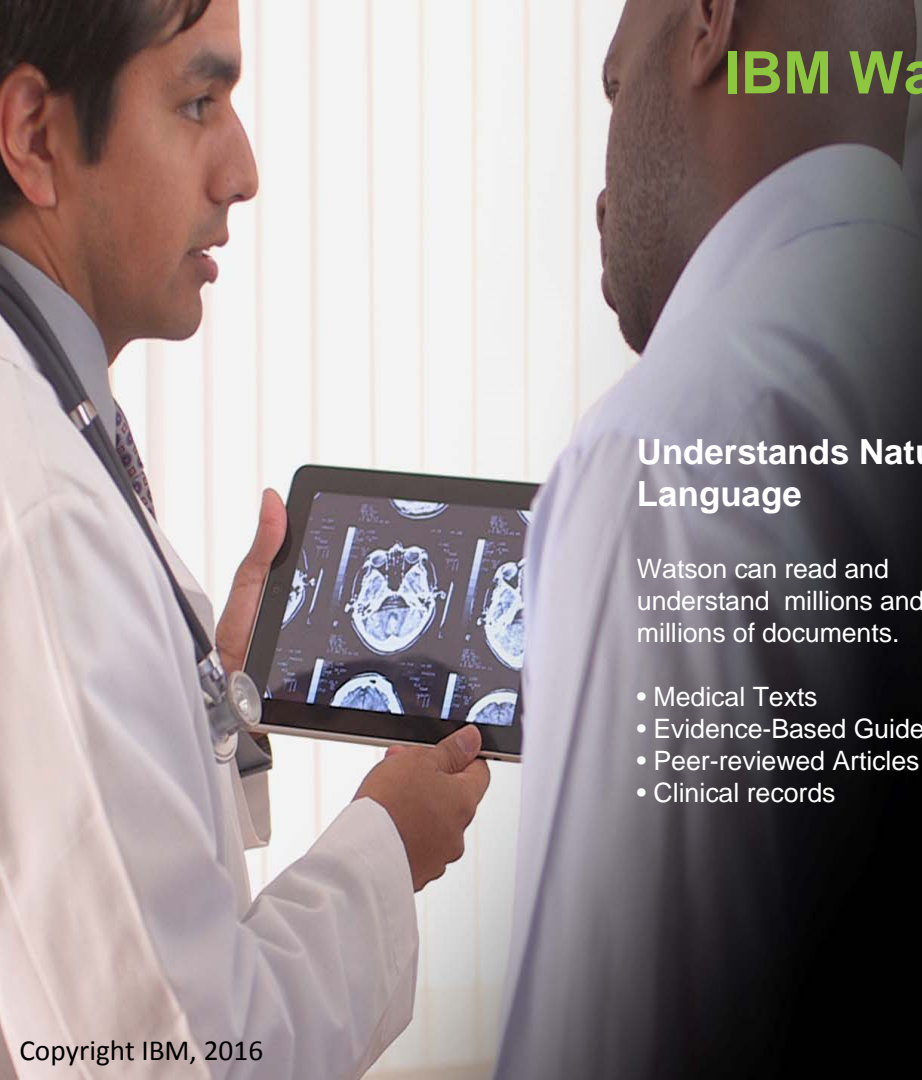
Patient Portal

Care Mgmt. Systems

IBM Enterprise Data Warehouse

IBM Watson Health Healthcare Big Data Platform

IBM Watson: A Cognitive System



Generates and Evaluates

Watson searches, extracts candidate recommendations scores and ranks decisions

Learns and Adapts

Decisions being made by leading Physicians feed the engine

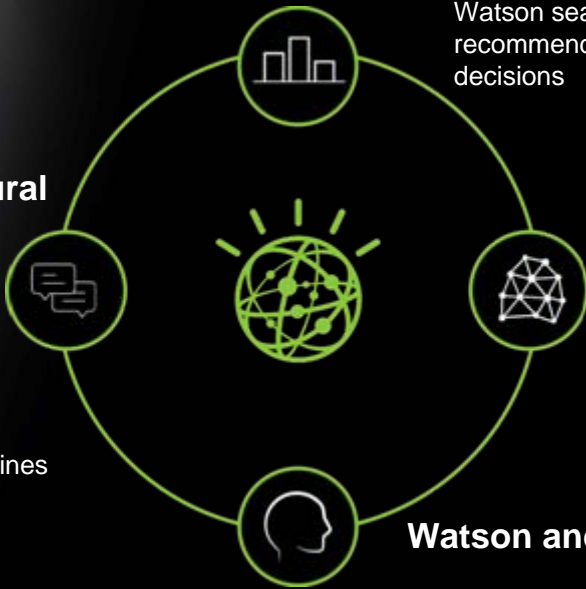
Watson and Me

Understands and engages me
Learns and improves over time
Helps me discover
Establishes trust
Has endless capacity for insight
Operates in a timely fashion

Understands Natural Language

Watson can read and understand millions and millions of documents.

- Medical Texts
- Evidence-Based Guidelines
- Peer-reviewed Articles
- Clinical records



“Healthcare and the economy are in the midst of historical realignments. Organizations that leverage their clinical data to improve care, speed innovation, and reduce delivery costs **will shape the future of medicine.**”

Toby Cosgrove, MD
President and CEO
Cleveland Clinic