Chasing the Transformative Promise of Data & Analytics in Healthcare

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About Me…

- Shannon earned her Ph.D. in Psychology from Ohio State where she researched mechanisms of change in the treatments of depression

- Since leaving academia, she's spent her career operating at the intersection of data and behavioral science to create value with data. She has applied her skill set to tackle complex challenges in insurance, finance and, most recently, healthcare industries.

- In her current role at Front Health, she supports healthcare organizations with strategies and data-driven insights to succeed confidently in value-based care

Healthcare lags behind other industries in unlocking value from data and analytics, despite exponential growth in data resources in recent years

POPULATION HEALTH MANAGEMENT

Study: Healthcare Lags Other Industries in Digital Transformation, Customer Engagement Tech

A recent study examining the digital maturity of six industries found that the healthcare industry ranked third in terms of overall digital maturity, as healthcare firms typically lag about a decade behind other industries in adopting business technologies that would help with customer engagement.

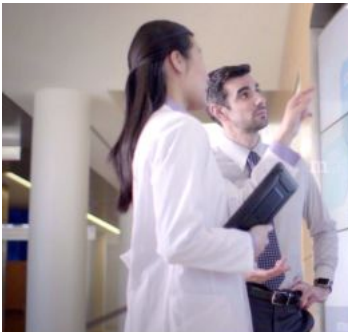BY **HEATHER LANDI** — MARCH 30, 2018

Economic Policy

The tech industry thinks it's about to disrupt health care. Don't count on it.

(Washington Post illustration; iStock)

By **Carolyn Y. Johnson**

Feb. 9, 2018 at 10:18 a.m. EST

Harvard Business Review

Internet | Google Flu Trends' Failure Shows Good Data > Big Data

INTERNET

Google Flu Trends' Failure Shows Good Data > Big Data

by Kaiser Fung

56% of Hospitals Lack Big Data Governance, Analytics Plans

Enterprise-wide big data governance frameworks are hard to find in hospitals, which lack the time and resources to implement guiding data integrity principles.

Source: Thinkstock

By Jennifer Bresnick

The slow grind: why the healthcare industry won't change overnight

David Feygin, Ph.D., MBA on LinkedIn
May 3, 2018

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A growing recognition of the transformative potential of data is evident across government policies and healthcare investments

Government policies and programs have progressively intensified efforts **to promote widespread health information collection, accessibility, and use**

At the same time, **investments in healthcare technology are increasing** globally and are projected to continue to grow over the coming years

- Electronic Health Record (EHR) incentive programs sought to increase adoption and interoperability

- HITECH Act develops Health IT Certification Criteria, for interoperability and Health Information Exchange (HIE) capabilities

- Medicare Access and CHIP Reauthorization Act (MACRA) established a value-based payment model to incentivize high-quality care, enabled by EHR adoption and use

Healthcare IT Global Growth Forecast[1]
5-year projected CAGR

+16%

$$390.7B

$187.6B

2019   2024
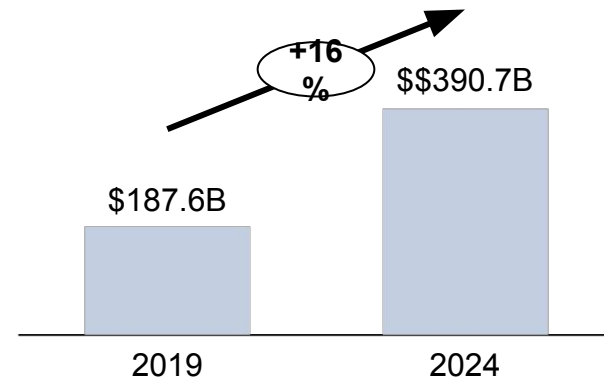
Both industry-led and government-backed efforts reflect a growing consensus on the vital role data must play in improving the quality and affordability of care

1) "Healthcare IT Market worth 280.25 Billion USD by 2021," MarketsandMarkets, 2018, https://www.marketsandmarkets.com /PressReleases/healthcare-it-market.asp.

These developments are occurring within the context of an industry-wide transition from volume to value-based payment models

Studies suggest **health care spending does not always go toward services for improving health** and as much as 30%[1] of spending may be wasteful.

Value Base Care (VBC) payment models **align** provider payments **to cost, quality, and outcome measures**

Volume Based Care

- Payments reward volume of services
- No shared financial risk; payer assumes all risk
- Acute inpatient focus
- Payments equal across range of patient severity

Value Based Care

- Payments reward quality and efficiency of care
- Providers and payers share financial risk
- Preventative care and disease management focus
- Payments proportional to clinical severity of patient

1) Institute of Medicine, 2012

There are systemic problems in healthcare that resemble issues already solved with data and analytics in other industries

| Relevant healthcare use cases	Parallel use cases in other industries	Shared data and analytic approaches
Identifying and intervening with patients at risk of developing chronic conditions to prevent or delay onset of disease	Retailers target customers when they are most likely to purchase by predicting major life events before they happen	Developing **predictive models to identify life events** before they happen
Alert care managers and providers when patients are admitted to the hospital to ensure timely transitions of care	Process international ATM transactions with foreign banks and automatically update customer account balances	Establishing **interoperable systems for data sharing**
Compare outcomes across physicians to identify high quality providers and detect potentially avoidable utilization	Compare KPIs to evaluate performance of a retail bank against leading competitors	**Creating meaningful benchmarks** to understand performance

Key challenges endemic to the industry have stymied development of data and analytic solutions in healthcare

	Challenges	**Consequences**
Sensitivity of healthcare decision making	Health care decisions are highly sensitive in nature, requiring providers to appraise **and act on vast sums of information in real time, potentially with life or death consequences**	▪ Analysts have **struggled to create and calibrate models that make better insights than physicians** ▪ **Data entry burden** for physicians ▪ **Physician resistance** to adopt new tools
Poor alignment and accountability of stakeholders	**Ownership of managing a patient is splintered** between their insurer, various providers and vendors, each with **different incentives**	▪ Poor sharing of patient information ▪ Failure to coordinate to holistically improve the patient care process
Lack of data standards and interoperability	Healthcare data **lack standard formats and conventions** and are disaggregated across **poorly integrated systems**	▪ Data and analytic tools perform poorly due to **poor quality data** ▪ **High cost to normalize** data sources ▪ **Inability to exchange** data across systems ▪ **Full visibility to patient data is lacking**

Data and analytics alone will not solve these challenges

Greater nontechnical expertise is required to affect change in healthcare than in most other industries leveraging analytics

Technical skills tend to dominate common definitions of data science skill sets…
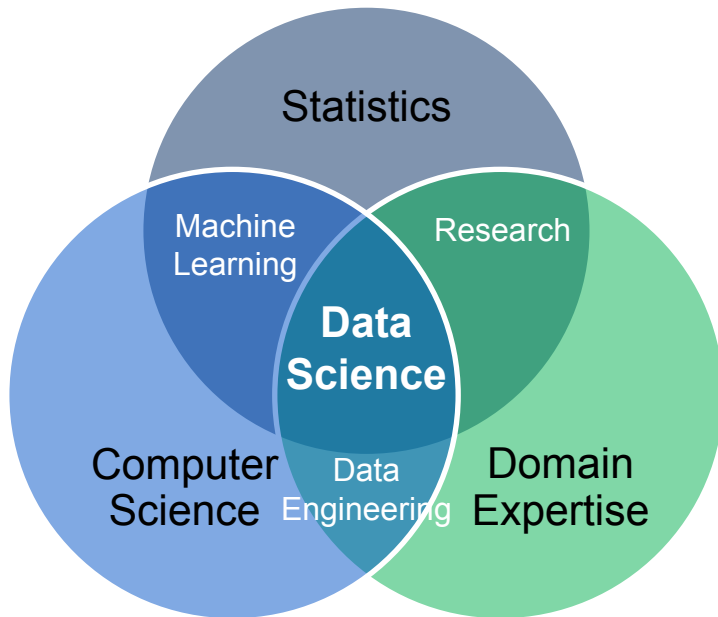
In healthcare, a more accurate depiction would emphasize and articulate domain expertise and "soft skills" as essential ingredients for creating value out of data resources

Domain expertise

- *Claims data*
- *Electronic Health Record*
- *Federal and State health policy*
- *Population Health Management*
- *Industry insight*

Soft Skills

- Effective communication skills
- Strategic planning
- Organizational change management

Fostering nontechnical expertise demands top down and bottom up efforts

Top-down leadership support

Bottom-up employee engagement

Top-Down

Bottom-Up

Approaches to fostering nontechnical skills

Staffing

- Prioritize this skill set when recruiting and hiring
- Invest in onboarding and cross-training
- Retain skilled colleagues

Org Structure

- Give analysts a seat at the table with decision makers OR be prepared to give context for analyses
- Breakdown silos and foster knowledge sharing
- Partner closely or embed analytics in clinical teams
- Set industry-appropriate goals

Employee Engagement

- Read literature and attend presentations/conferences
- Establish good working relationships with clinicians
- Choose the simple analysis that drives action over the more complex one that creates confusion
- Be patient