GROWING HEALTH ANALYTICS WITHOUT HIRING NEW STAFF

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we create *thinking data®*

Today's Roadmap

1 Healthcare's data problem

2 The solution: Data champions

3 Enacting the solution

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1

Healthcare's data problem

Survival depends upon competing well with data

Adapt
Change
Evolve
or be
LEFT **BEHIND**

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Without data you cannot...

- Estimate true costs of care
- Quickly diagnose inefficiencies
- Catch harm in real-time
- Measure meaningful patient outcomes
- Maintain market share
- Participate in precision medicine
- Make money under risk-based contracts
- Get paid by CMS (MACRA legislation)
- Guesstimate M&A impact

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Leveraging data is hard

CULTURE

- Knowledge fiefdoms
- Consensus-based decision making
- Financial transparency is unusual
- Exception handling is the norm

PROCESS

- Emotional barriers to data governance
- Providers used to caring for patients at unknown cost, quality, and satisfaction
- Healthcare doesn't know how to act on data-driven insights

PEOPLE

- Analytic skillsets in high demand
- Data and analytics literacy is poor
- Unclear where analytic teams should sit

TECHNOLOGY

- Technology seen as the 'T' in transformation
- Magical thinking around EHRs
- 'Hope brokers and dashboard peddlers'

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But how does YOUR organization define health analytics?

ORG MODEL

- Center of excellence
- Centralized
- Decentralized
- 'Consulting'

STAFFING

- Statisticians
- Data scientists
- Business analysts
- Chief Analytics or Data Officer

TECHNOLOGY

- Data lakes & warehouses
- Hadoop-ery
- SAS/R
- Qlik/Tableau
- SAP BO and crystal reports
- 'What Epic gave us'

DATA ACCESS

- Dashboards
- Reports
- Self-service
- Query tool
- Direct SQL

Health analytics should be defined by your financial, quality, and safety goals.

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Flint, Michigan: How did data literacy play a role in uncovering the lead crisis?

WISCONSIN STATE JOURNAL

Flint doctor used Epic Systems records to expose lead crisis

DAVID WAHLBERG dwahlberg@madison.com, 608-252-6125   Jan 30, 2016   💬 38
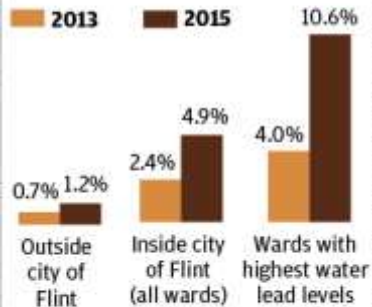
Dr. Mona Hanna-Attisha, Hurley Medical Center in Flint, Michigan, said it would have taken "forever" to discover lead poisoning using paper records. Instead, electronic medical records helped to quickly find a problem.

http://goo.gl/uaoty6

Children with elevated blood lead levels in the Flint, Michigan, area

In 2014, Flint's water source switched from Lake Huron to the Flint River, leading to more lead in drinking water and in children's blood.

Percentage of children with elevated blood lead levels, by area:

■ 2013   ■ 2015

Area	2013	2015
Outside city of Flint	0.7%	1.2%
Inside city of Flint (all wards)	2.4%	4.9%
Wards with highest water lead levels	4.0%	10.6%

FLINT

Flint River

NOTE: Study includes 3,675 children younger than 5 who had a blood lead level test processed through the Hurley Medical Center's laboratory.

SOURCE: Dr. Mona Hanna-Attisha, American Journal of Public Health

State Journal

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A success secret to succeeding with analytics is HUMAN

MINDSET

Organizationally, Dr. Hanna-Attisha had the support needed to ask questions of data when concerned about her patients' health.

SKILLSET

Dr. Hanna-Attisha had the intuition, curiosity, and analytic confidence to start the data exploration process and engage other analysts along the way.

TOOLSET

The EHR toolset provided means to stratify and review data in response to questions like that posed by this pediatrician, and the provider knew how to use it.

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2

The solution:
Data champions

Three ways to grow health analytics capacity

HIRE ANALYSTS

OUTSOURCE

DEVELOP

ISSUES

- Expensive
- High demand
- Few have healthcare knowledge
- None would know *your* business

- Need right vendor partner
- Total costs can be hard to estimate
- Must send data externally
- Someone has to be able to interpret the results

- Identify data-curious staff
- Secure training funds
- Develop on-the-job training program
- Revisit job ladders
- Provide meaningful time for professional development

TRAINING

HEALTHCARE BUSINESS

WORKING WITH DATA SCIENTISTS

RESULTS INTERPRETATION

STORYTELLING

DATA VISUALIZATION

BASIC STATISTICS

RESULTS INTERPRETATION

DATA EXPLORATION

STORYTELLING

DATA VISUALIZATION

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Who are our future data champions?

You are.

Other industries are creating citizen data scientists

Mark Pickett
Senior Director
Online Analytics and Business Intelligence

"The business understands the business more deeply than we ever could... We're trying to coach these people up and provide them with the data they need to craft their own reporting and do their own analyses"

http://www.cio.com/article/3052886/the-rise-of-the-citizen-data-scientist.html

April 7, 2016

A success secret to succeeding with analytics is training **EXISTING STAFF**

"No amount of technology will help patients without caring and empowered doctors, nurses, and staff."

Eugene Kolker, PhD
Chief Data Officer
Seattle Children's Hospital (WA)

"Reliance on IT to perform analytics, in the place of the users, slows the process down and creates a work burden that IT cannot support."

Deepesh Chandra, MS
Director of Centralized IT Services
Mount Sinai Health System (NY)

Healthcare Workers

Knowledge Workers

Leadership
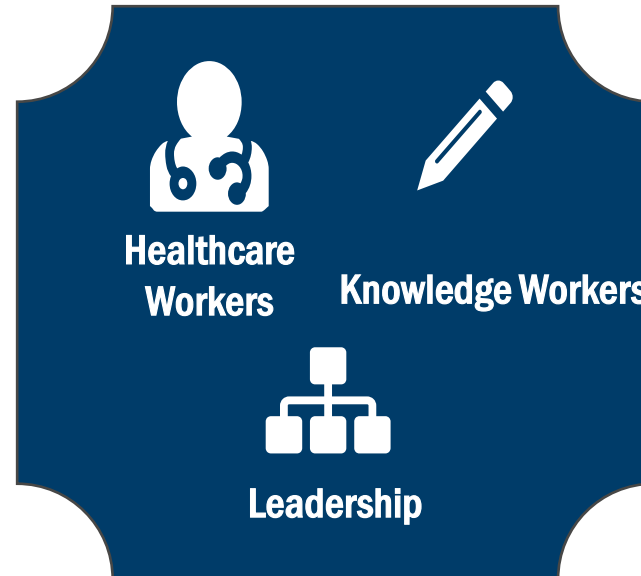
"If our doctors don't have the data, how are they going to change things? "

Meghan Brandabur
Program Coordinator for Health Intelligence
Swedish Medical Group (WA)

"There are professional and legal expectations that clinicians must acquire, analyze, and evaluation different facets of information to provide the best possible care to individual patients and entire populations."

William Hersh, MD
Professor and Chair
OHSU (OR)

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What do staff need to become data champions?

Data governance

"People have different ideas for different business purposes, but the bottom line is that you have to come together as an organization and decide. You can't have three definitions, because if you try to go forward in that way, it takes a brutal amount of work to revise your data infrastructure."

Joe Kimura
Chief Medical Officer
Atrius Health (MA)

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What do staff need to become data champions?

Data governance

Self-service access to data

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Case: Democratizing data is a strategy to grow literacy and improve care

Released self-service tool focused on business line analysis with the goal of allowing physicians to access care data of cohorts, not just individuals. Investment made into training for end users.

Enhancing literacy through self-service access to interactive reports discovers missing screening opportunities

Stanford Children's Health

- First Epic site to rollout Epic 'SlicerDicer' tool for faculty and administrative leaders to explore care, operations, and quality improvement

- Developed training for providers and eLearning

SWEDISH Medical Center

- Screening for patients at risk for 3+ cancers moved from 30 to 62%

- Patients were diagnosed with cancer at earlier, more treatable stages

Analytics training gives existing healthcare workers the skills and competencies needed to become the 'citizen data scientist.' Stanford Children's Health (Bay area, CA) and Swedish Medical Center (Seattle, WA) are two recent examples where analytics expertise created awareness of gaps in care.

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What do staff need to become data champions?

Data governance

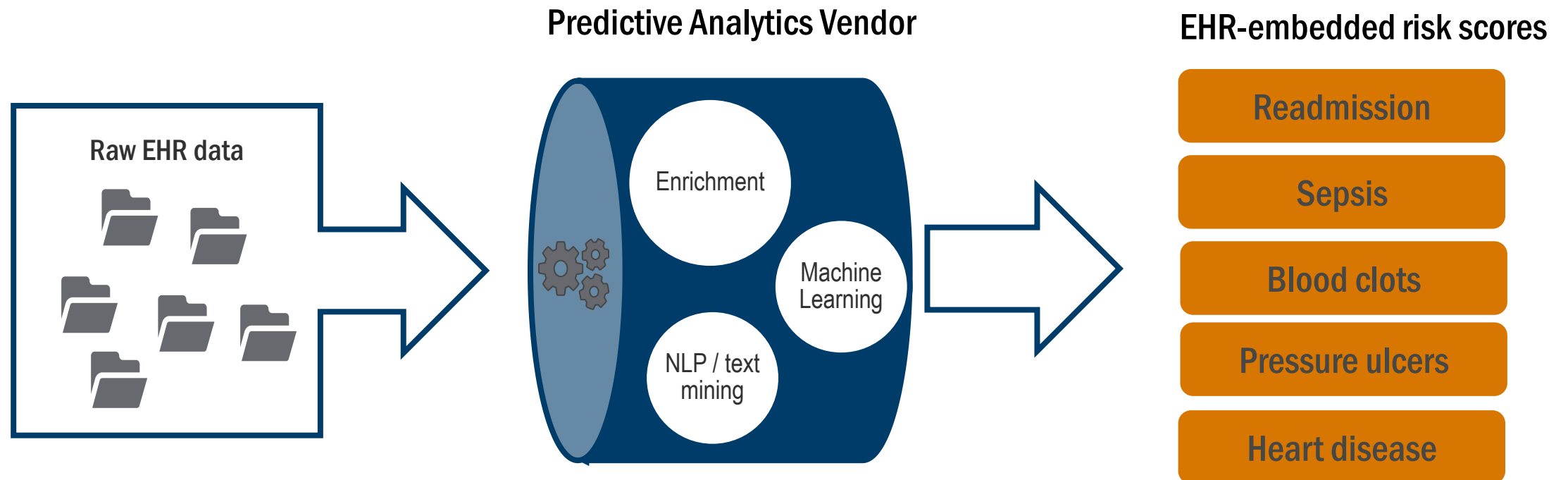Self-service access to data

Access to advanced analytics services

Case: Analytics as a Service (AaaS)

Reduce the time-to-value for data

Raw data to new prediction in infrastructure in 6-10 weeks

Predictive Analytics Vendor

Raw EHR data

Enrichment

Machine Learning

NLP / text mining

EHR-embedded risk scores

Readmission

Sepsis

Blood clots

Pressure ulcers

Heart disease

What do staff need to become data champions?

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Access to advanced analytics services

Data and analytics education

Case: New York University School of Medicine

"Healthcare By Numbers" curriculum

NYU seeks to help students develop the skills to care for populations as well as patients

Students execute projects using data from the New York State Department of Health Statewide Planning and Research Cooperative System (SPARCS) (4,5M patients from 2013, 2014)

Students work in pairs to explore data from every inpatient discharge from New York State
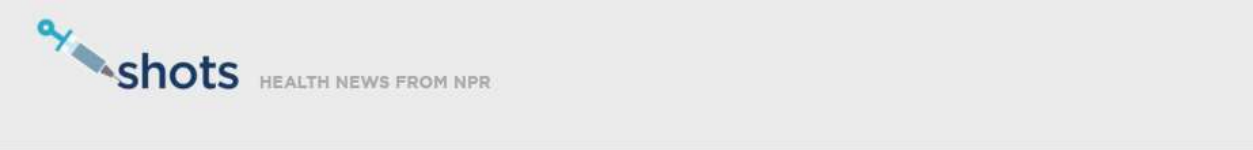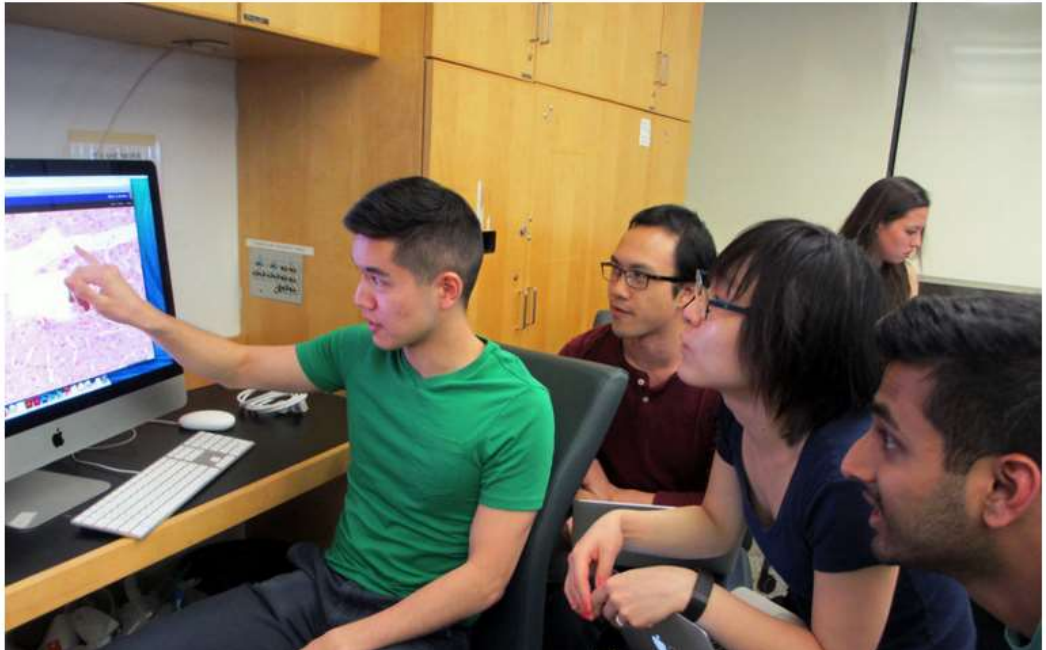
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Enacting a
solution

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Challenge: Training Your Data Champions

The cost and duration of analytics training programs can be a barrier to many

	Certificates and Degree Programs	Massive Open Online Courses (MOOCs)	Bootcamps & Workshop Series
Learning modality	Live, instructor-driven training	Self-guided, virtual learning	Experiential learning
Outcome	Diploma or certificate (accredited)	Certificate of completion (non-accredited)	Portfolio of applied projects
Duration	9 - 20 months (full time)	6 - 18 months (part-time)	2 - 3 months equivalent of full-time effort
Cost per individual	$20,000 - $70,000	$0 - $1000	$1,000 - $14,000
Projects	Internship + practicum projects	Projects on 'own time"	Hands-on projects built into program experience
Ideal candidate	Individuals with time to immerse in a full degree program and seek a traditional educational experience	Self-motivated individuals able to design their own curriculum paths and demonstration projects to prove competency.	Those desiring structured learning in intensive episodes that can be organized either in collaboration with current employer or as personal development

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So can we train 'on the job'?

Training isn't just courseware: It's a journey

Prepare
Deliver
Sustain

Change Management Support

Technology Demos

Skills Assessment

Core Competency Definition

Training Modality Selection

Team Meetings

Town Halls

Hands-On Workshops

Hackathons

Instructor-Led Training

Practicum Projects

eLearning

Lunch-and Learn Groups

Peer Mentoring

Writing & Blogging

Curated Content

Tool-Based User Groups

'Ask the Expert' Office Hours

Performance Assessments

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Sample Roadmap: Educating an Existing Team of Business Analysts at a Midwestern Health System

01

Prepare

- *Task analysis*
- *Performance Mapping*
- *Curriculum Plan*
- *Course review and adaptations*

02

Deliver – Phase 1

- *Individualized performance plans*
- *30 Minute mentoring session with each student (weekly)*
- *Management touchpoint call (monthly)*
- *Case study development (for use in workshops)*

03

Deliver– Phase 2

- *Instructor led training (monthly)*
- *Microlearning prescriptions*
- *Virtual workshop (bi-monthly)*

04

Sustain

- *Follow-up eLearning*
- *Progress management with performance plans (online)*
- *Curated healthcare analytics content*
- *Access to visualization mentoring*
- *Journal club set-up*

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Summary: How to Grow Health Analytics Without Hiring New Staff

Odontopteryx toliapica

Larger brain for areas that control sight, flight, and memory. They were able to adapt better to mass extinction events and are believed to be the ancestors of many modern birds

Invest in self-service data access

Use analytic commodities when possible

Create a plan to develop enterprise analytics literacy

Invest in training for those who are curious about data– create data champions

Contact

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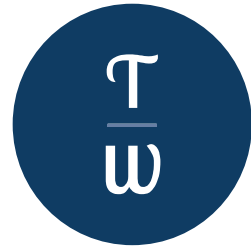@academyhc

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