Using Semantics, Machine Learning, & Data Science for Personalized Health Care Guidance

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Director, Product, Data Intelligence Platform

Topics

- What is personalized healthcare guidance?
- Our data basics
- Challenges
- Summary and the future

Anthem BlueCross

Home | Plan Details | Benefits | 1

Nice to see you again, Christina.

See what we can do for you as your personalized health assistant.

Take the tour

Wellbeing Programs

Get Active

Track your steps and earn 10 points daily.

Start

Sleep Well

Track your sleep and earn 5 points daily.

Start

Eat Smart

Track your calories and earn 10 points daily.

Start

Earn 50 Points

Register for Engage

Meet your personalized health assistant!

Popular Programs

Telemedicine
LiveHealth Online

Health savings account (HSA)
Spending Account (HSA)

Prescription plan
Pharmacy

Health Plans

Updated 5 minutes ago

Christina's summary

MEDICAL

Spent to date	$0
Plan phase	Deductible

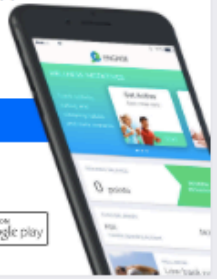
Rewards

Redeemable points 0 pts

Health info, in your pocket.

By clicking below, we'll text you a link to install our mobile app.

Standard messaging rates apply.



Text Me

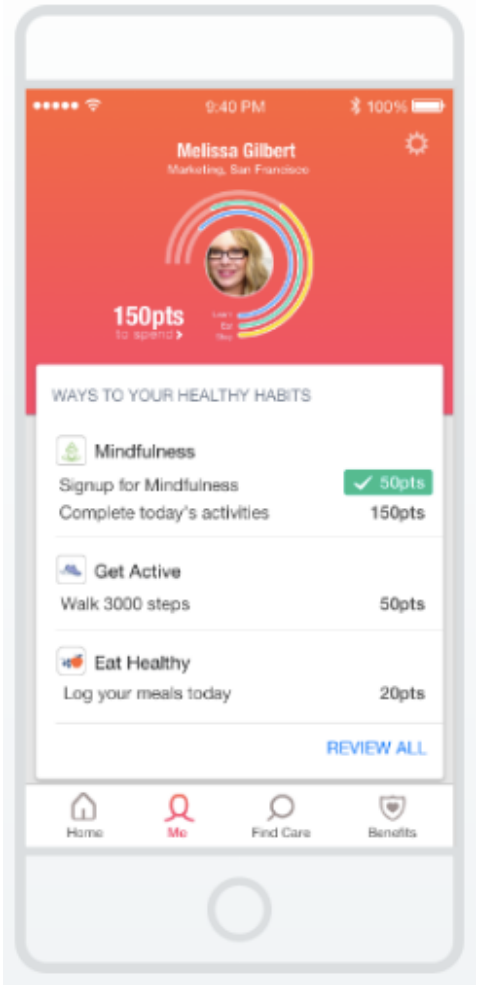
Available on

App Store | Google play

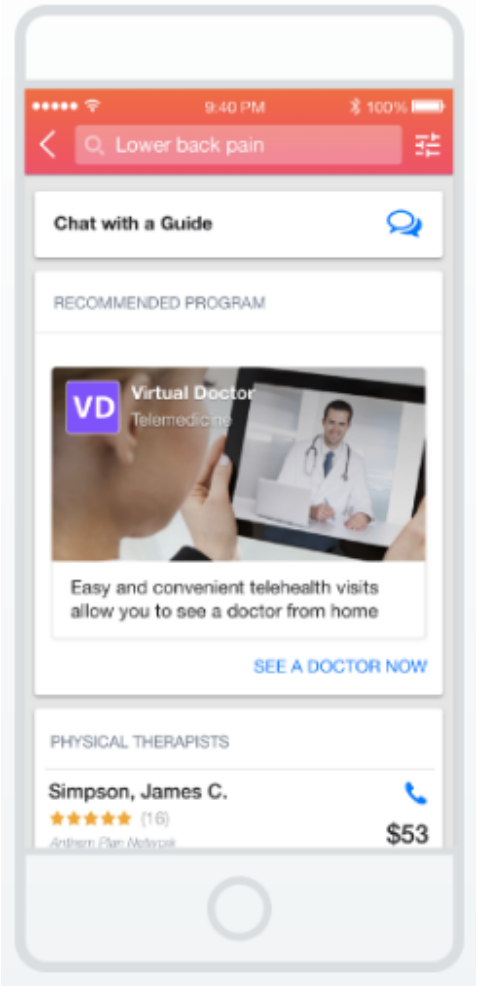
Need Help?

Click here to start the tour

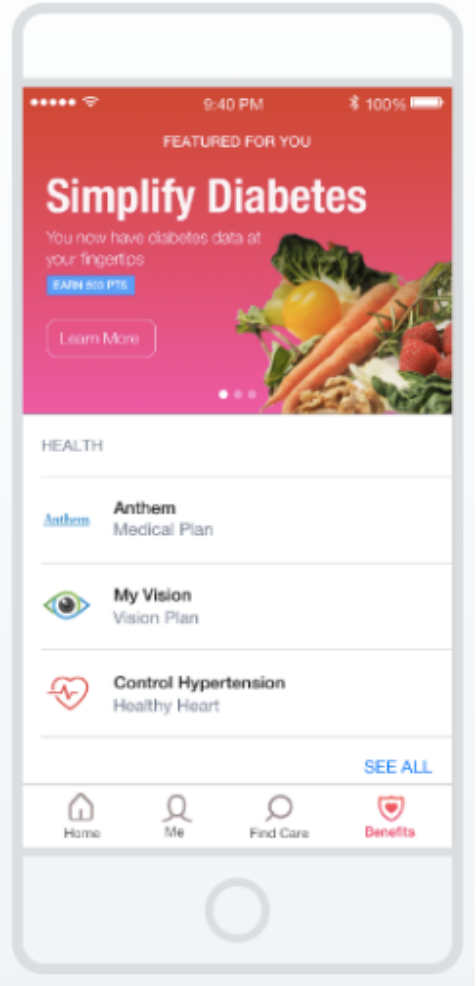
Personalized healthcare guidance



Stay Healthy



Access Care



Manage Conditions

Castlight Genius

Predicts which people are likely to:

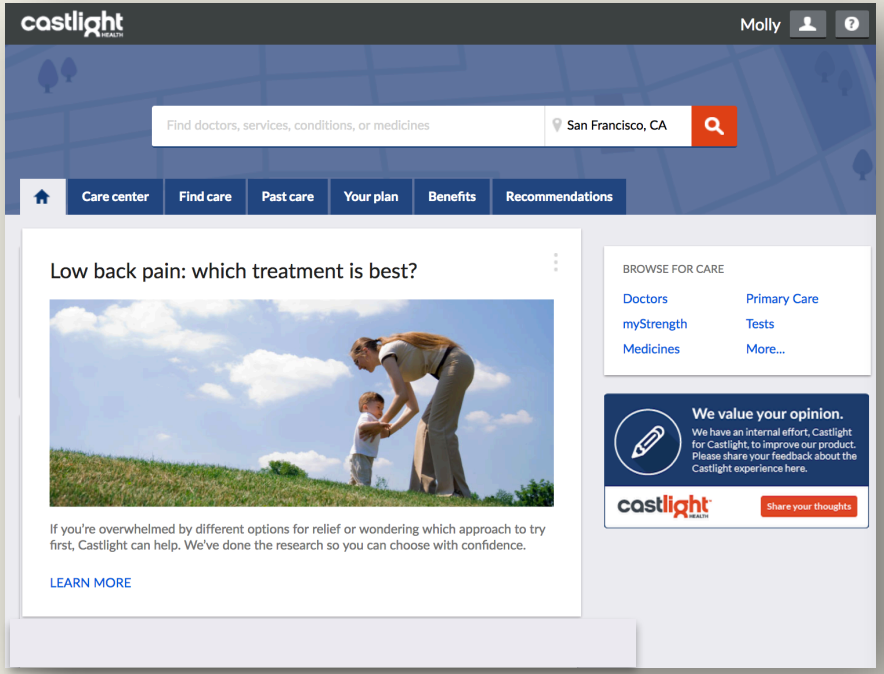
- consider back surgery,
- get diagnosed with diabetes,
- suffer from anxiety,
- consider pregnancy,
- And other.

We reach out with helpful messaging.

Examples

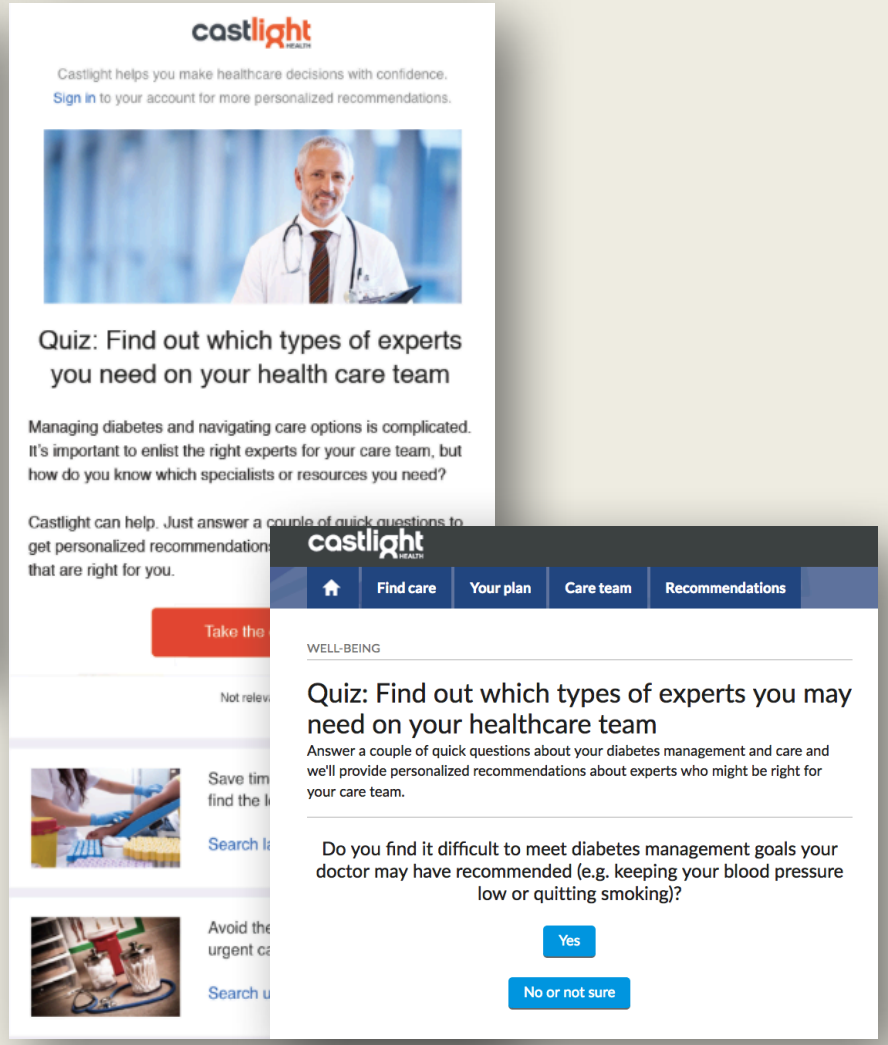
Segment: New low back pain

Goal: Avoid unnecessary MRI, consider physical therapy if appropriate



Segment: Uncontrolled diabetes, at risk for complications

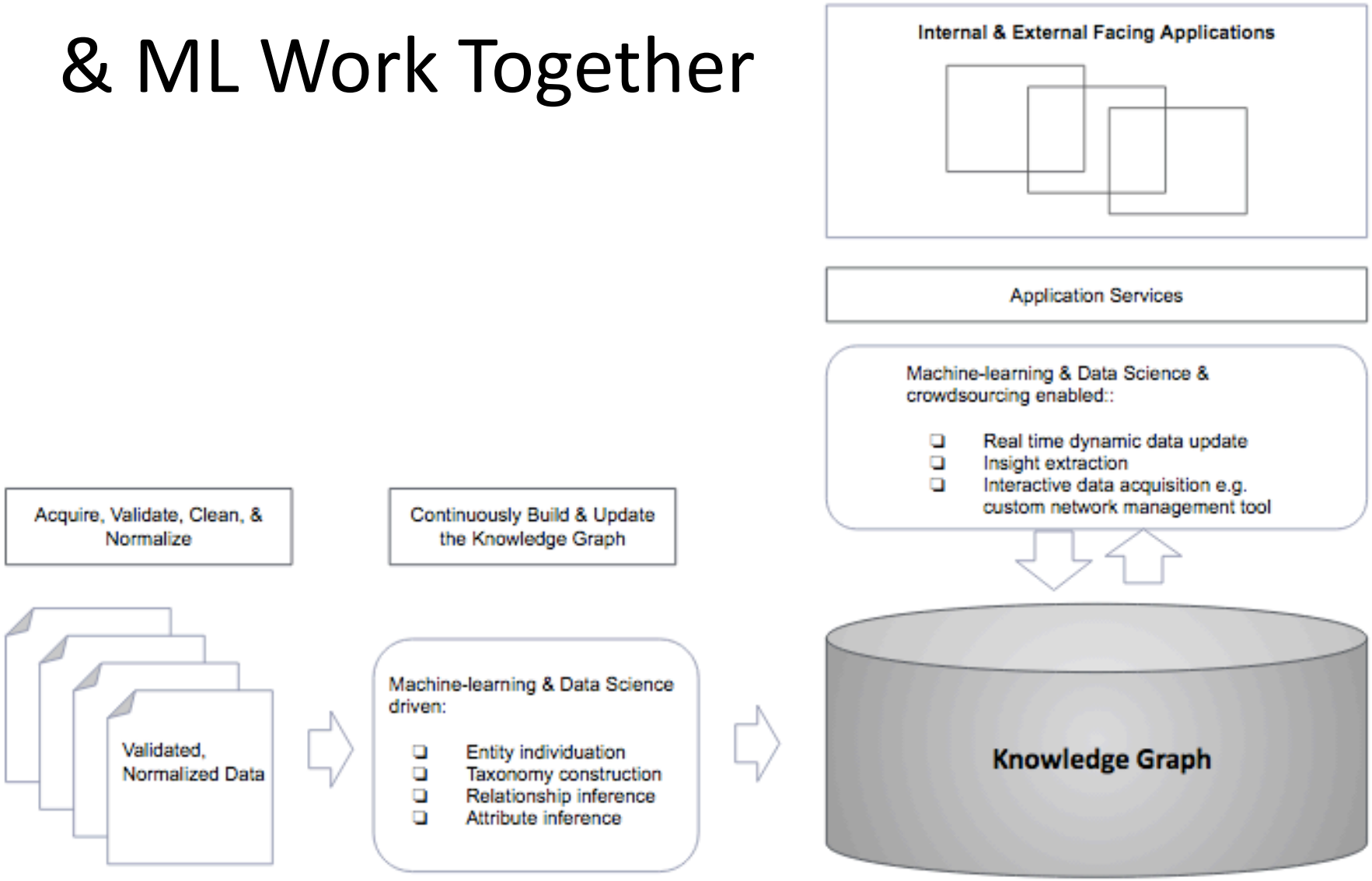
Goal: Find a high-quality PCP add to care team, if particularly hard to manage, consider endocrinologist



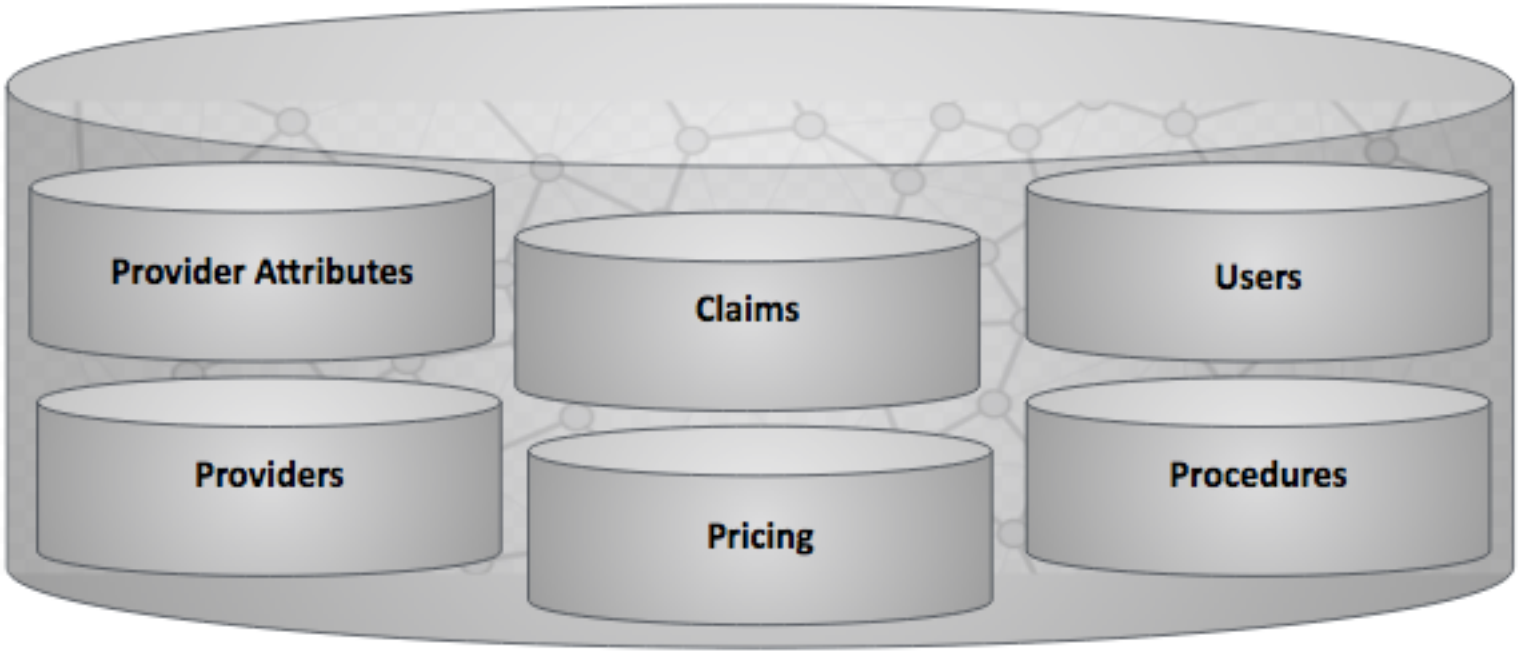
Disclaimer

All statements about technologies used at Castlight are conceptual and visionary --

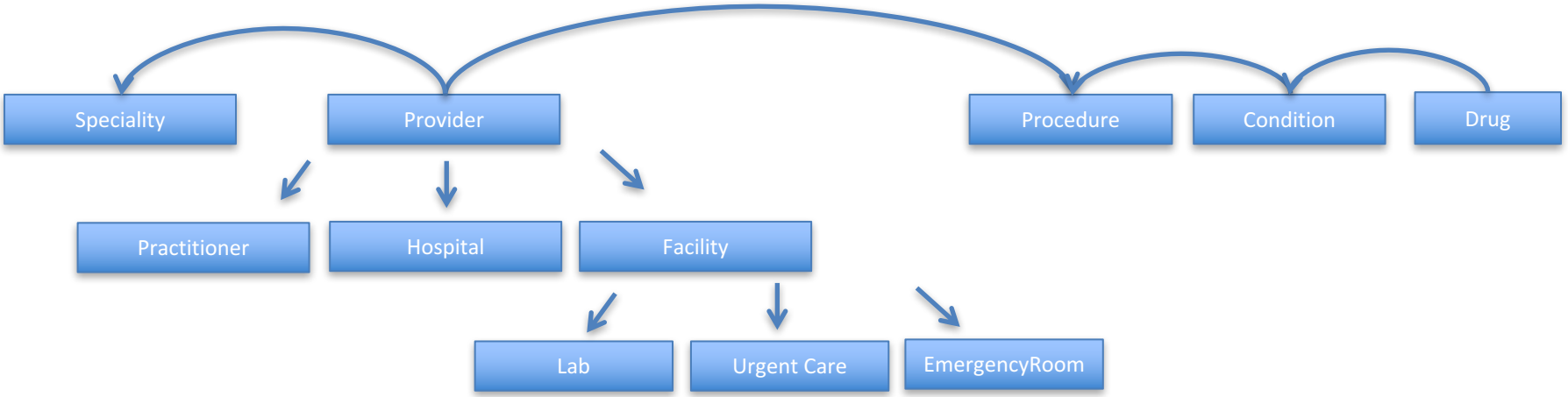
How Structured Data & ML Work Together



Data Basics: Types of Data



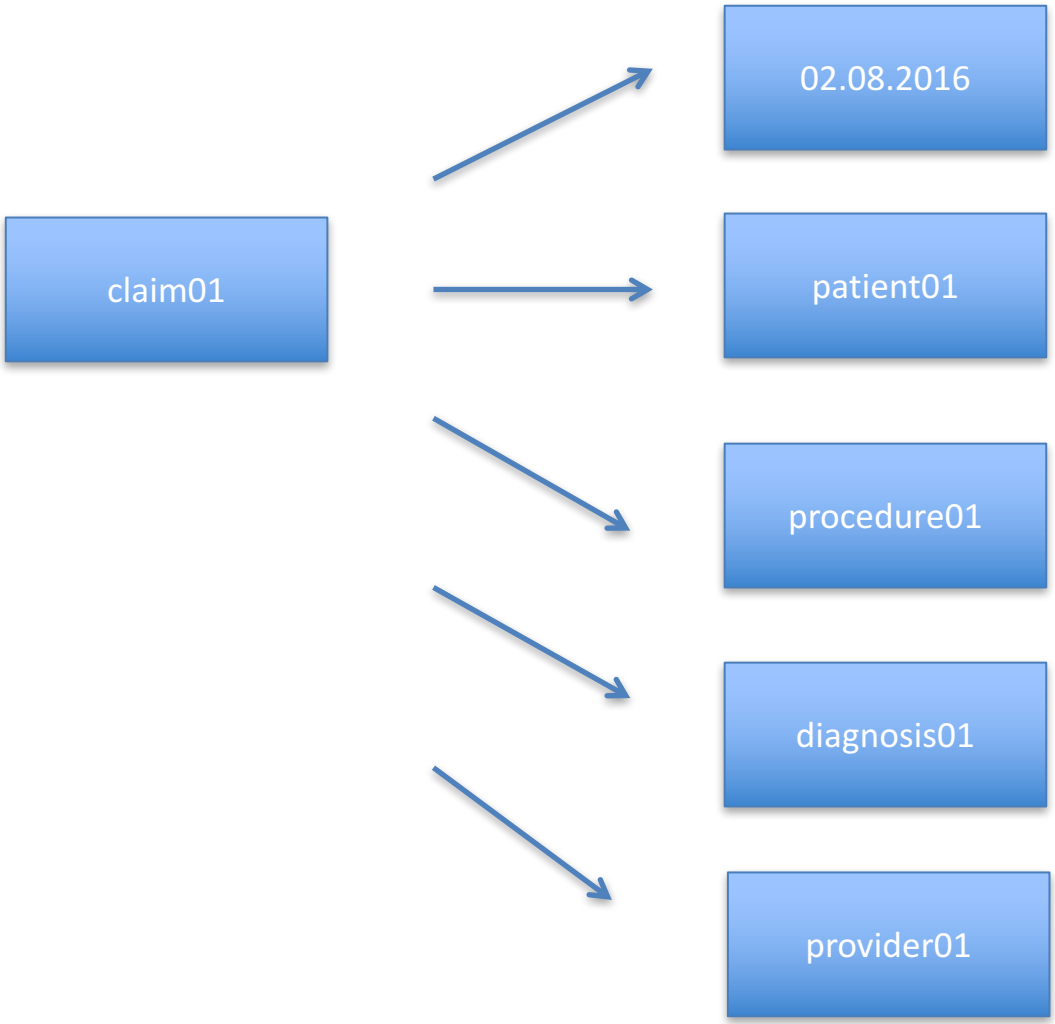
Data Basics: How they all relate



Example Rules
subclassOf Practitioner Provider
subclassOf Hospital Provider
implies (and (performsProcedure ?pract ?proc) (isa ?proc Neurosurgery)) (hasSpecialty ?pract Neurosurgeon)

Example learning (or inferred data)
Every claim for a certain type of procedure at a certain type of lab is evidence that that type of lab performs that procedure (in general).
The amount paid in the past for a certain type of procedure at a certain type of provider can be used to predict how much you would pay for a similar procedure at a similar provider

Data Basics: Anatomy of a Claim



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Challenges

Entity disambiguation

- Which provider is mentioned on the claim?
- Which patient is the claim for?

Provider networks

- Which providers are associated with supplemental data?
- Which providers are in which networks?
- Complex network definitions

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Example: Provider Entity Resolution

Search results for "Mary Washington"
Before:

1-2 of 2

Mary Washington Hospice
Home Health Services
In-Network
2300 Fall Hill Ave, Suite 401
Fredericksburg, VA 22401 (1 mi)

Mary Washington Home Health Age
Home Health Agency
In-Network
2300 Fall Hill Ave, Suite 401
Fredericksburg, VA 22401 (1 mi)

1-2 of 2

Search results for "Mary Washington"
After:

1-3 of 3

Mary Washington Hospice
Home Health Services
In-Network
2300 Fall Hill Ave, Suite 401
Fredericksburg, VA 22401 (1 mi)

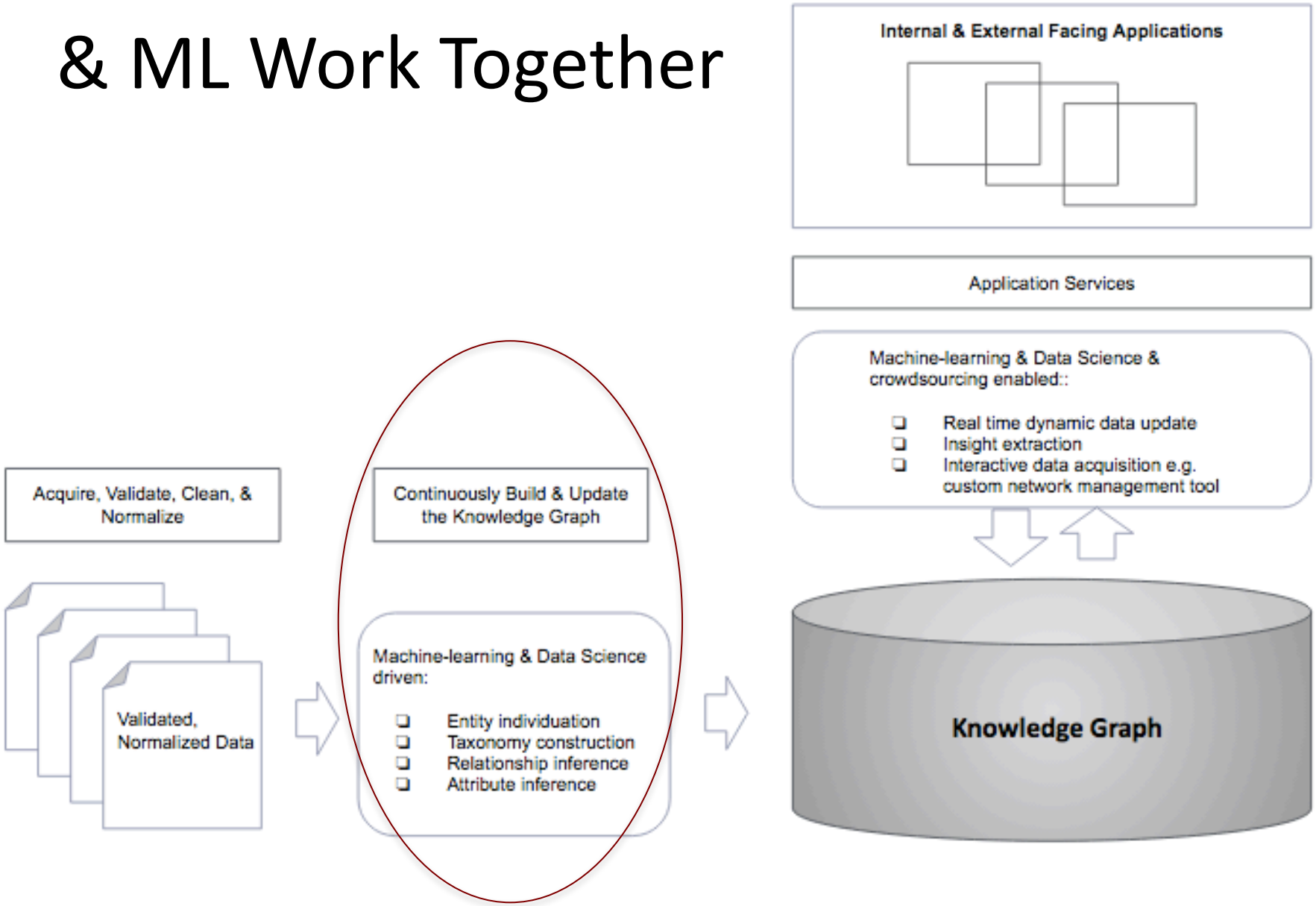
Mary Washington Hospital Inc
Acute Care Hospital, Independent Lab
Blue Distinction Center+ |
In-Network
1001 Sam Perry Blvd
Fredericksburg, VA 22401 (1 mi)

Overall surgical quality
(300+)
patient ratings

Mary Washington Home Health Age
Home Health Agency
In-Network
2300 Fall Hill Ave, Suite 401
Fredericksburg, VA 22401 (1 mi)

1-3 of 3

How Structured Data & ML Work Together



Questions?