



ePhysician's Office, Inc.
Doctors with AI solutions

Why Use IT for clinical application?

Bedside signs and symptoms that are common aspects of any health record, including unstructured data, are necessary in addition to codes and data fields to represent the true clinical condition.

Aggregation, assembly and interpretation of such data in real time at the clinical site would be ideal.

Building the Solution

- How?** Formatting collection and retrieval uniformly
- What?** Type of data: a fully evolved EHR
- Where?** Site of the Collection: Any clinical site
- When?** Real-time (prospective>retrospective)
- Who?** Physician, physician extender, paramedical staff, administrator/clerk
- Why?** Stated objectives supported by advanced metrics





The ideal EHR



Contains all the elements of a traditional medical record, in a traditional medical format.



All data fields, representing both structured and unstructured data, are extractable and accountable.



Personal Health Information is easily sanitized for data analytics.

The ideal EHR analytics tool

(How We Do It)



Mining from a specific EHR data base, using a generic template (design, matrix)



Identical method of aggregation, assembly and Bayesian analysis

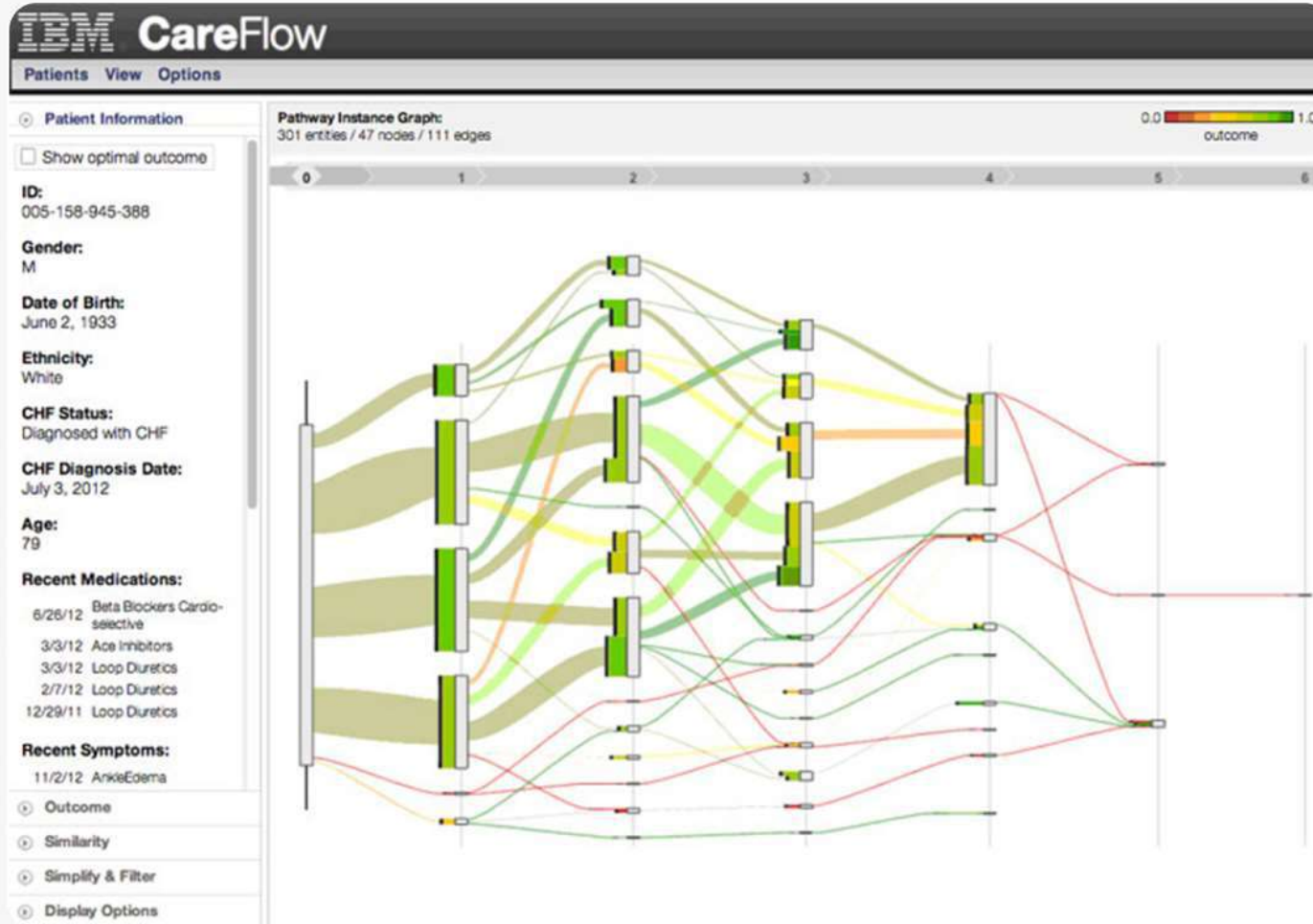


Same access/usability at multiple sites

Different topics, different objectives

Example of Similarity Analytics

Includes patient features that may not ultimately be relevant determinants for outcomes



Similarity Analytics

WHAT ARE THE DRAWBACKS?



What qualifies as a feature?

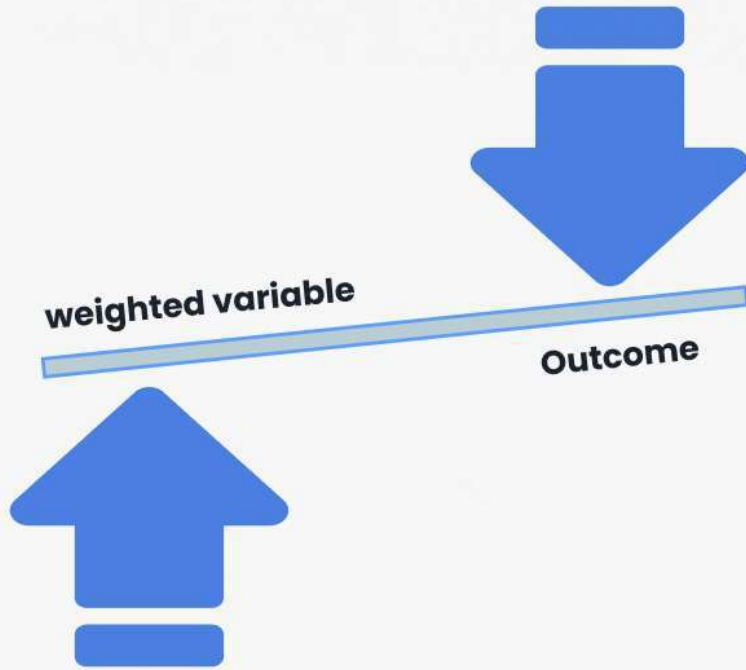
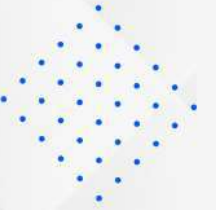


How do the weights change across judgment contexts?



What determines the feature weights?

Behavioral and Brain Sciences



Each piece of data is a weighted variable that impacts on each outcome

Bayesian Based Metrics

Allow for detection of nuances in a disease pattern/presentation.

HOW?

Application of such a tool have shown valid predictability with a short "**ramp-up**" period (number of cases required for validity) because of the number of data fields collected per encounter.

Bayesian Models

Designed to deal with uncertainty.

Transparency, so the model is easily interpreted.

Intuitive usage, which is attractive in complex modeling problems such as systematic review.



Bayesian Models

Probabilistic inference capability facilitates predictions about unobserved data that could allow for filling of data gaps.

Bayesian Networks and machine learning technology support complex optimizations.



AHIMA



"To answer not only
the questions we
cannot answer today,
but to answer the
questions we cannot
envision today"



AHRQ conference



- Use of the tool within standard clinical processes does not require additional personnel
- One template multiple applications
- Multiple management decisions