Evidence2Health

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Expertise: Data Science, Machine Learning, Advanced Statistical Modeling, Causal Inference

CarDS-Lab.org
Evidence2Health: Improving Health with Evidence

Current Inference

Data from Randomized Clinical Trials That Can Impact Health

Evidence2Health
How Randomized Clinical trials are interpreted now: Average effects across groups

Enroll & Randomize

Treatment A

Outcome events
Treatment A

VS

Outcome events
Treatment B

Treatment B

Expensive

Inefficient: 40% Null

~$100 million for getting drugs through trials

Annual total spending on trials $60 Billion
The Evidence2Health Approach: A patient-centered interpretation of trial effects

- **Enroll & Randomize**
- **Detailed characterization**

**Treatment A**

**Treatment B**

- **Outcome heterogeneity**

Multidimensional space around each person

“Phenomap”

Outcomes compared in multidimensional “neighborhood”

Machine Learning-based tool for individualized benefit profile

Precise Inference

Patent pending (submitted 4/20/21)
How does E2H achieve this?

Clinical Medicine  
Clinical Investigation  
Machine Learning
Evidence2Health tool #1: ASSIST©
Anatomical OR Functional testing in patients with chest pain

Original PROMISE trial (NEJM 2015)
No difference in 10,003 patients

Traditional approach
Average effect ~ null
“Patients can undergo either anatomical or functional testing”

An E2H™ tool for personalized trial interpretation

Oikonomou, Khera. *European Heart Journal*. 2021

- Traditional approach
- Average effect ~ null
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An E2H™ tool for personalized trial interpretation

Oikonomou, Khera. *European Heart Journal*. 2021
Machine Learning Helps Choose Best Test for Chest Pain

A machine learning tool can help providers choose between two non-invasive tests for patients with chest pain.
Evidence2Health tool #2: INSIGHT©

Canagliflozin
$600 per month

↓15% Cardiovascular risk in Diabetes

16 Million Eligible
<1 Million Receiving

INSIGHT©

40% RISK REDUCTION WITH THERAPY

NO BENEFIT WITH THERAPY
Who can benefit from the E2H™ Approach to Clinical Trials

Drug/Device manufacturers

Health systems/ACOs

Health Insurers
E2H: Our Business Model

Evidence2Health™ Tools

E2H Products
- ASSIST©
- INSIGHT©
- MI-ASSIST©
- ARREST©

Evidence2Health™ Optimization

E2H Consulting → Personalized Tools to implement in Data

- Evidence evaluation
- Personalized algorithm design
- Deployable tool
E2H: Self-sustaining Business model

Evidence2Health™ Tools

**Year 1-2**
- Computation – $20K
- Advertising - $15K
- Project Management – $20K

**Earnings:**
$10K to $50K per deployment

Evidence2Health™ Optimization

**Year 3-5**
- Computation – $50K
- Advertising - $20K
- Business Management – $100K

**Earnings:**
$50K to $250K per 1 year contract
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