From Chasing My Cure to Every Cure

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Co-Founder & President, Every Cure

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Sirolimus identified for iMCD by uncovering a novel target

-Disease targets drug to modulate activity of biological processes or activities

Fajgenbaum et al. JCI, 2019.
Treatment identified for AS by uncovering published link

2013 paper links PD1/PDL1 and angiosarcoma (AS)

Testing confirmed increased PDL1 in 2016

First AS patient treated with PD1 inhibitor in remission >8 years, many more benefitting

Recommended by NCCN and widely used off-label worldwide

Kim et al. PLOS ONE. 2013.
3,000 medicines are approved for 3,000 diseases, but 19,000+ diseases don’t have a single approved therapy
Many diseases share mechanisms and many drugs have multiple targets, highlighting the potential of drug repurposing.

“There is a missing link in the system that isn’t filled by NIH, FDA, or pharma... No one is responsible for making sure that drugs are fully utilized across diseases.

— JANET WOODCOCK, MD
PRINCIPAL DEPUTY COMMISSIONER, FDA
Unleashing the potential of every approved medicine to treat every disease and every patient possible.
Advancing a new field of computational pharmaco-phenomics to save lives

Traditional Drug Repurposing

\[ \text{Disease} \rightarrow \text{Drugs} \]

Drug Repurposing: Indication Expansion

\[ \text{Diseases} \rightarrow \text{Drug} \]

Computational Pharmacophenomics / All vs All Drug Repurposing

\[ \text{Diseases} \rightarrow \text{Drugs} \]

Korsunskaya, et al. 2024 (in submission).
We train on **known** treats relationships:

- Drug A
- Gene B
- Disease C

We unleash the algorithm on **unknown** relationships:

- Drug A
  - Disease B: 0.89
  - Disease F: 0.12
- Drug C
  - Disease D: 0.69
3,000 approved drugs → 22,000 diseases

Gain FDA approval
Ensure treatment is covered
Enable appropriate patient use
Gain FDA approval

Knowledge Graphs of drugs, targets, and diseases
Donated data from partner organizations
Insights from pharma on additional uses for generic drugs

Public CureMap

Evaluate hits
Study in trials
Optimize clinical use

Perform clinical trial
Study in trials

0.93

Use world's knowledge to grade all 66M drug-disease links
Every Cure’s Key Features

Computational pharmacophenomics has the power and potential to rapidly save lives, reduce costs, and improve health inequities.

End-to-end responsibility.
Every Cure is predicting and advancing the most promising treatments all the way to patients.

All drugs and all diseases.
Every Cure is not focused on a specific disease, drug, or profits—just impact.

Collaborative by nature.
As a nonprofit, Every Cure wants to serve as a central resource for sharing and accessing data and insights.

Built for purpose.
Every Cure’s platform and data infrastructure was built with repurposing in mind.
First ‘All drugs vs All diseases’ analysis generated promising results!

Mu et al., bioRxiv. 2022.
Our partners and key relationships in saving lives
Every Cure | Our team

Board of Directors

- Grant Mitchell, MD, MBA Co-founder & CEO
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- Vanessa Rostick Head of People Operations
- Janet Woodcock, MD SAB member
- Annalisa Jenkins, MD Advisory Council member
- Noubar Afayan, PhD Advisory Council member
- Eric Topol, MD Advisory Council member
Future directions

We need your help to unlock more uses for existing FDA-approved medicines

• Support Every Cure with obtaining datasets from private data sources (eg, Elsevier), biopharma companies, and government agencies (eg, VA and FDA)
• Support the development of cutting-edge AI/ML algorithms
• Support Every Cure with prioritization of top hits
• Perform in vitro and in vivo validation studies
• Partner on clinical trials of top hits

We need your help to advance treatments to patients!

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