

Health Domain Panel Challenge Problems

- Precision phenotyping
- Right set of drugs 1st time

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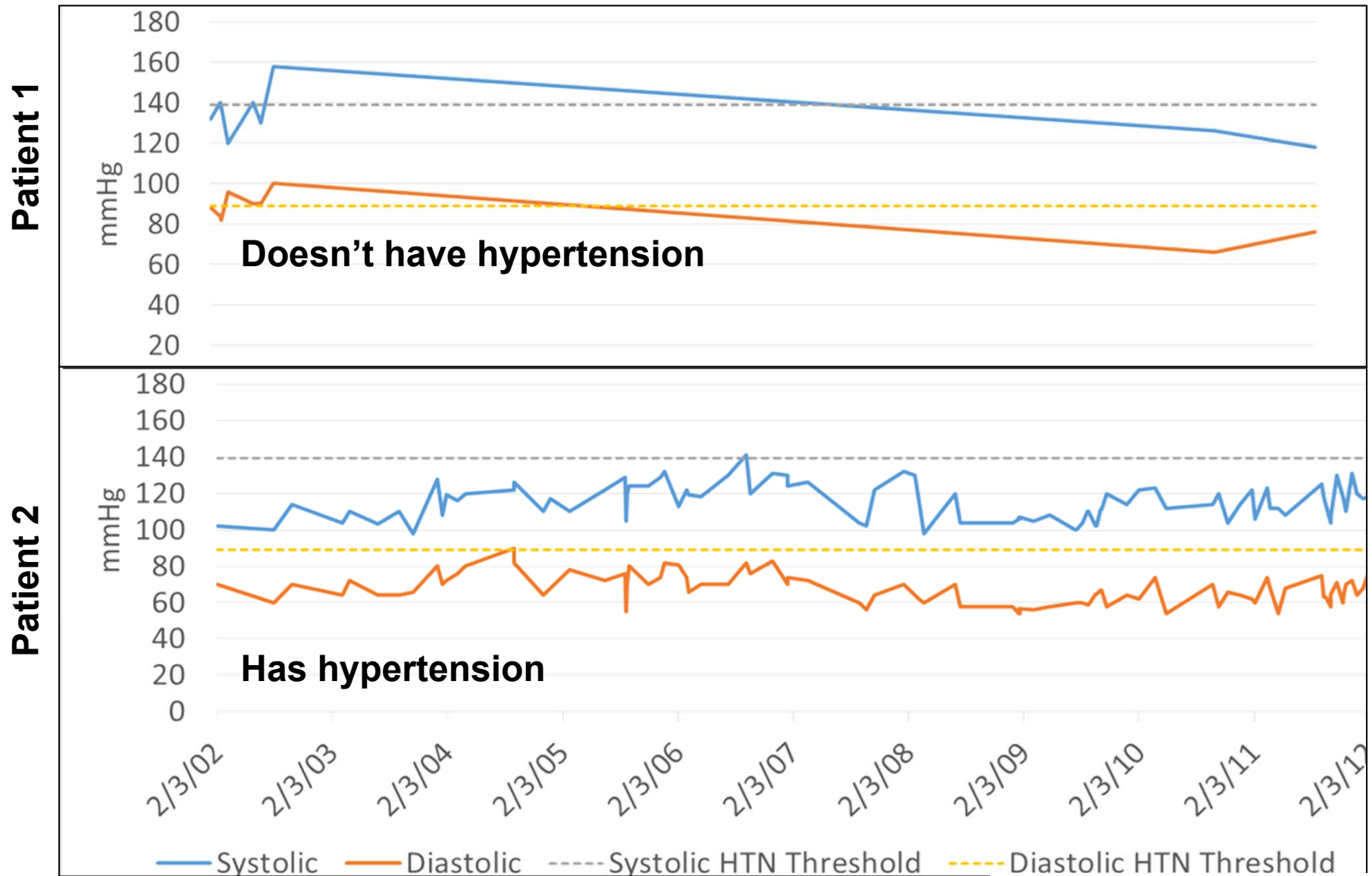
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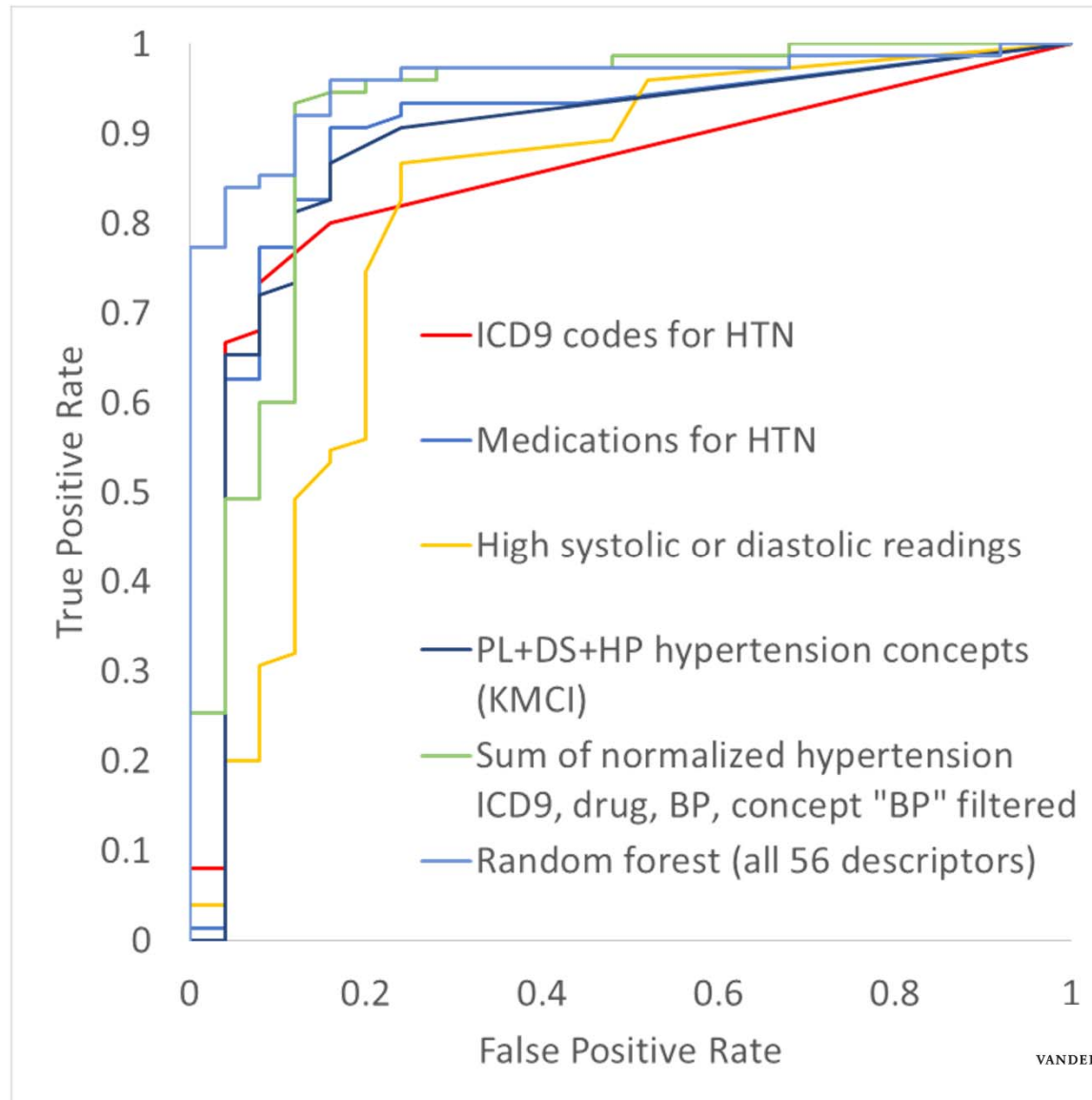
Finding a “simple” phenotype: Who has hypertension?

Definition: SBP > 140 or DBP > 90



A “simple” example: Hypertension

Multiple components are better
(and blood pressure is the worst)



The Future: Meet Augustus Jones – “People Like Me”

VANDERBILT  HEALTH



Real-time analytics



“People Like Me”



Pragmatic Trials

“People Like Me”

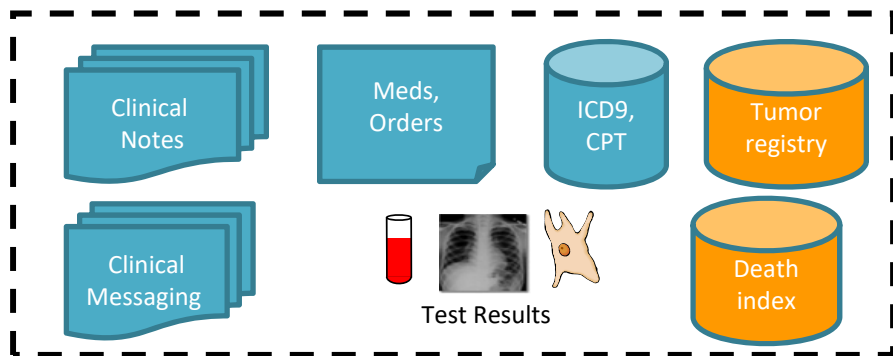


Secure Personal Social Network Life Portal

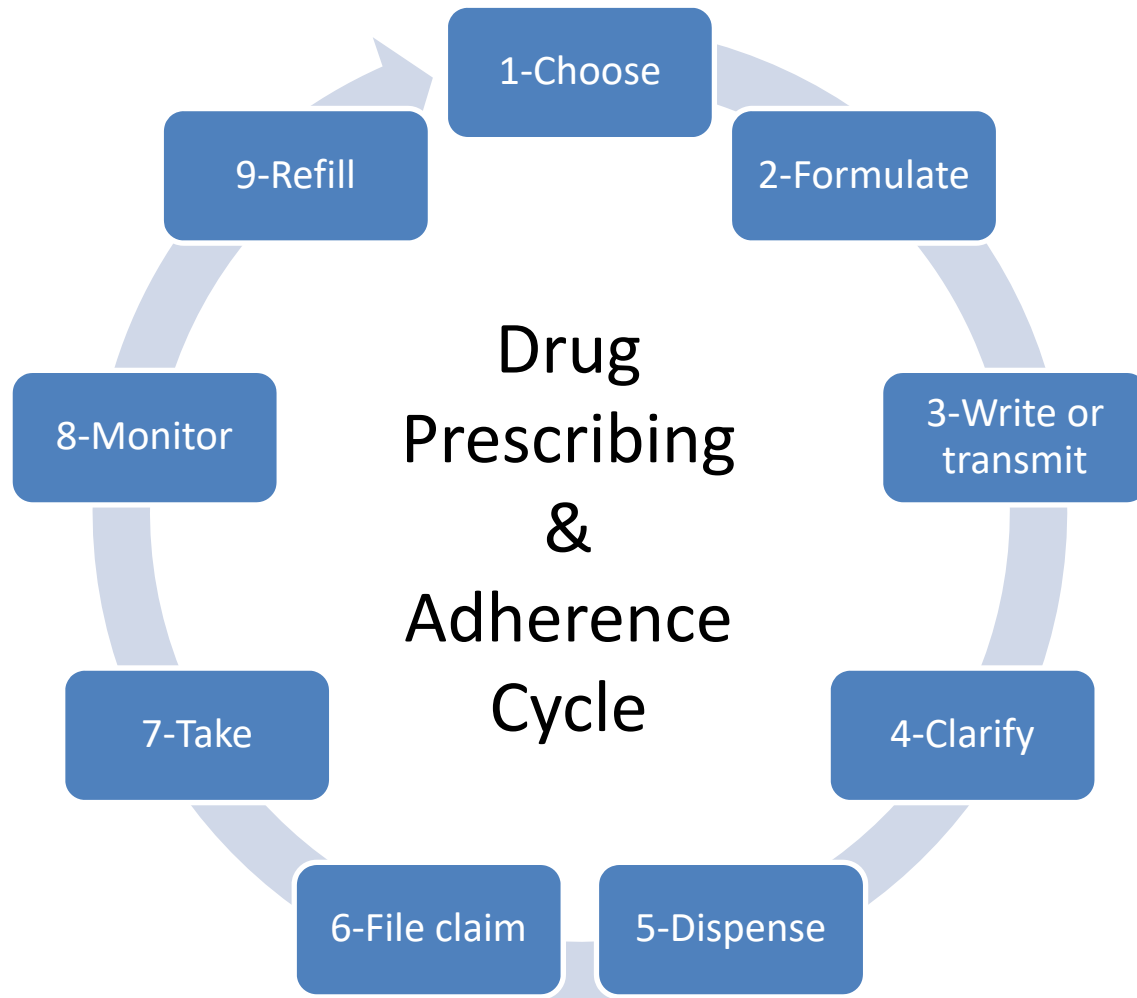
Analytic Engine



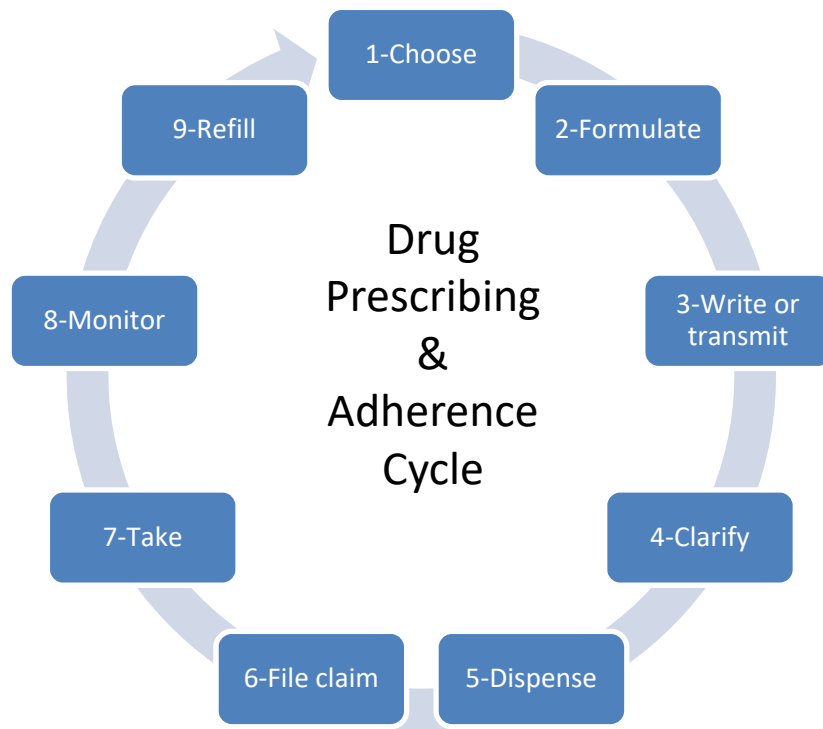
200 Close Matches
Potential diseases
Response to therapies
Outcomes
Availability of trials



Electronic Health Record



Magnitude of failure to achieve adherence (Steps 4-8)



- Approximately 50% of patients do not take medications as prescribed
- 33%-69% of medication-related hospital admissions are due to poor adherence – cost \$100B/year

Learning System Approach

Learning System	Research Opportunities
Respond to individual & family goals	<ul style="list-style-type: none">• Elicit goals• Support shared decision making
Solve for a coordinated set of interventions	<ul style="list-style-type: none">• Detect phenotype signatures• Detect sets of interventions• Detect patterns of response
Start small, monitor and adjust the “cycle” as a whole	<ul style="list-style-type: none">• Sense & log inputs (actors & actions)• Deliver context sensitive predictive nudges• Assay spectrum of biomarkers• Track functional outcomes