



# cortex

AI-Based Patient Cohort Design

# Current Challenges with Clinical Trial Patient Selection



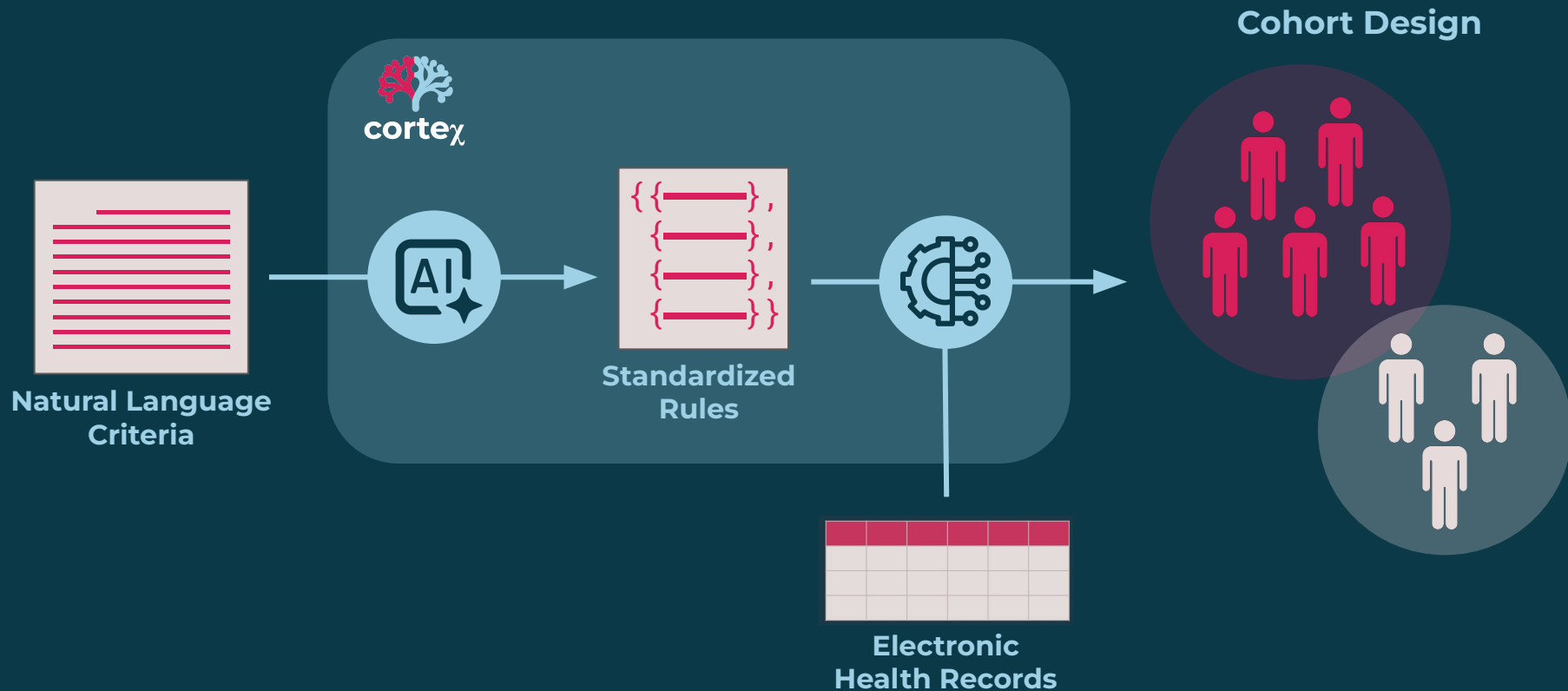
# Current Challenges with Clinical Trial Patient Selection



# Problem Statement

How can we use LLMs to understand clinical trials and structure inclusion and exclusion criteria, so patients can be matched in real time?

# cortex workflow



# Example

I want female patients  
over 18 that have atrial  
fibrillation.

They should have no  
history of strokes.

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```
{ 'INCLUSION':  
  [{ 'type': 'gender'  
    'gender': 'F'},  
  
    { 'type': 'age',  
      'min': 18}  
  
    { 'type': 'conditions',  
      'icd9_codes': ['427.31'] }],  
  
  'EXCLUSION':  
    [{ 'type': 'conditions'  
      'icd9_codes': ['286', '434'] }]}]
```




# Example

I want **female** patients **over 18** that have **atrial fibrillation**. They should have **no history of strokes**.

```
{'INCLUSION':  
  [{ 'type': 'gender',  
    'gender': 'F' },  
    { 'type': 'age',  
      'min': 18 },  
    { 'type': 'conditions',  
      'icd9_codes': [ '427.31' ] } ],  
'EXCLUSION':  
  [{ 'type': 'conditions',  
    'icd9_codes': [ '286', '434' ] } ] }
```



Patient ID	Age	Sex	Conditions
81293	37	Female	Atrial fibrillation



Patient ID	Age	Sex	Conditions
30017	53	Female	Occlusion of cerebral arteries

# User Interface



Select Patient CSV File

bigPatientData.csv

## Enter Rule Description:

\*Inclusion Criteria: History of symptomatic permanent atrial fibrillation. Age between 18 and 70. Willingness, ability and commitment to participate in baseline and follow-up evaluations for the full length of the study.

Exclusion Criteria: Structural heart disease of clinical significance. Any prior ablation for atrial fibrillation. Prior ablation for arrhythmias other than AF within the past three months. Enrollment in any other ongoing arrhythmia study protocol. Any ventricular tachyarrhythmias currently being treated where the arrhythmia or the management may interfere with this study. Active infection or sepsis. Any history of cerebral vascular disease including stroke or TIAs. Pregnancy or lactation. Left atrial thrombus at the time of ablation. Untreatable allergy to contrast media. Any diagnosis of AF secondary to electrolyte imbalance, thyroid disease, or any other reversible or non-cardiovascular causes. History of blood clotting (bleeding or thrombotic) abnormalities. Known sensitivities to heparin or warfarin. Severe COPD (identify

Run

ness, ability and  
he study.

Success

Processed patients. Percentage included: 87.00%

OK

the full length of t

atrial fibrillatio  
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mbus at the time  
electrolyte imba  
lood clotting (bl  
COPD (identifie

## Patients:

Eva Jones, ID: 10006. Score: 1.0  
Sam Smith, ID: 10011. Score: 1.0  
Eva Franklin, ID: 10013. Score: 1.0  
Frank Pierce, ID: 10017. Score: 1.0  
Jane Smith, ID: 10026. Score: 1.0  
Jane Pierce, ID: 10027. Score: 1.0  
Kelsey Jones, ID: 10029. Score: 1.0  
Bob Smith, ID: 10032. Score: 1.0  
Bob Miller, ID: 10033. Score: 1.0  
David Jones, ID: 10035. Score: 1.0  
Charlie Jones, ID: 10036. Score: 1.0  
Kelsey Williams, ID: 10038. Score: 1.0

HCP *vs* HCP +   
cortex

78%

faster

# Patient Safety





# Why cortex?

## Improved UX

More time  
for clinician  
and patient  
**interaction**

## Interpretability

Transparent  
process,  
improved  
**trust**

## Study Acceleration

Bring  
cutting-edge  
therapeutics  
to patients  
**faster**

# *Thank You!*



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# Questions?

