Why?
The Diagnostic Procedure

Inputs:
- Perceived Symptoms
- Patient Chart
- Biometrics
- Human interpretation of medical models

Outputs:
- Prescription(s)
- Lifestyle Recommendations
The Lexical AI Procedure

Inputs:
- Explained Symptoms
- Patient Chart
- Allergies
- Biometrics
- Medical Models
- Patient History
- Sync4Science Data
- Public medical databases
- Immediate recommendations
- All current prescriptions
- Family medical history
- Genetic predispositions

Outputs:
- Prescription(s)
- Lifestyle Recommendations
- Post-examination feedback
Concepts
Artificial Thought
```python
input_encoder = Sequential()
input_encoder.add(Embedding(input_dim=vocab_size, output_dim=64))
input_encoder.add(LSTM(64))

question_encoder = Sequential()
question_encoder.add(Embedding(input_dim=vocab_size, output_dim=64))
question_encoder.add(LSTM(64))

model = Sequential()
model.add(Merge([input_encoder, question_encoder], mode='concat'))
model.add(Dense(128))
model.add(Activation('softmax'))
```
Word Vectorization

(Mikolov et al., NAACL HLT, 2013)
Patient Data

SYNC FOR SCIENCE

SMART
Employing Past Work
Cohesion
Lexical Flow

Interpretation of Symptoms
Wrist pain, hypertension, nausea

Interpretation of Sentiment
Hurts badly, mild annoyance, frustrating cough

Patient Data Cross-Reference
Current prescription is known to rarely induce anxiety attacks, family history of sodium deficiency
GUI Flow

Genomic Databases
MyCancerGenome, CIViC, dgiDB

Clinical Trial Databases
Relevant clinical trials might be useful as a further extension of our work, given that we can cross-reference patients’ symptoms with available trials.

FHIR Reference
Patient-relevant data and SMART CDS hooks return responses
Thanks!
Any Questions?