Classifying Patients Likely to Readmit

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Agenda

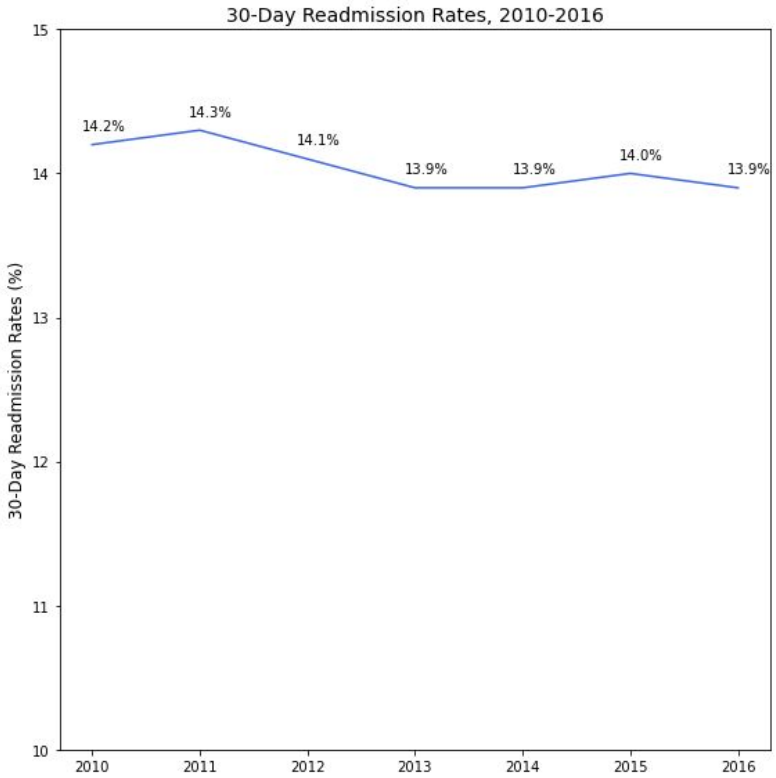
- Business Problem
- Data
- Model
- Results

1 | Business Problem

Business Problem

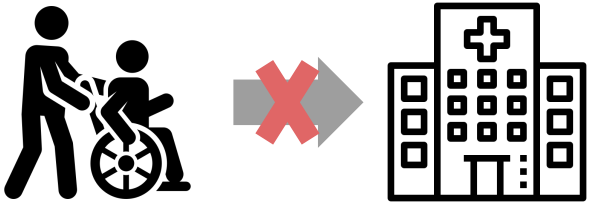
- How can we accurately determine patients who are likely to be readmitted within 30-days of discharge?

Readmissions are costly problems that can be avoided



Avg 30-Day Readmission Costs: $14K[1]

~27%[2] of 30-Day Readmissions Are Preventable



Source: [1]Agency for Healthcare Research and Quality (AHRQ), [2]Auerbach AD, Kripalani S, Vasilevskis EE, et al (2010)

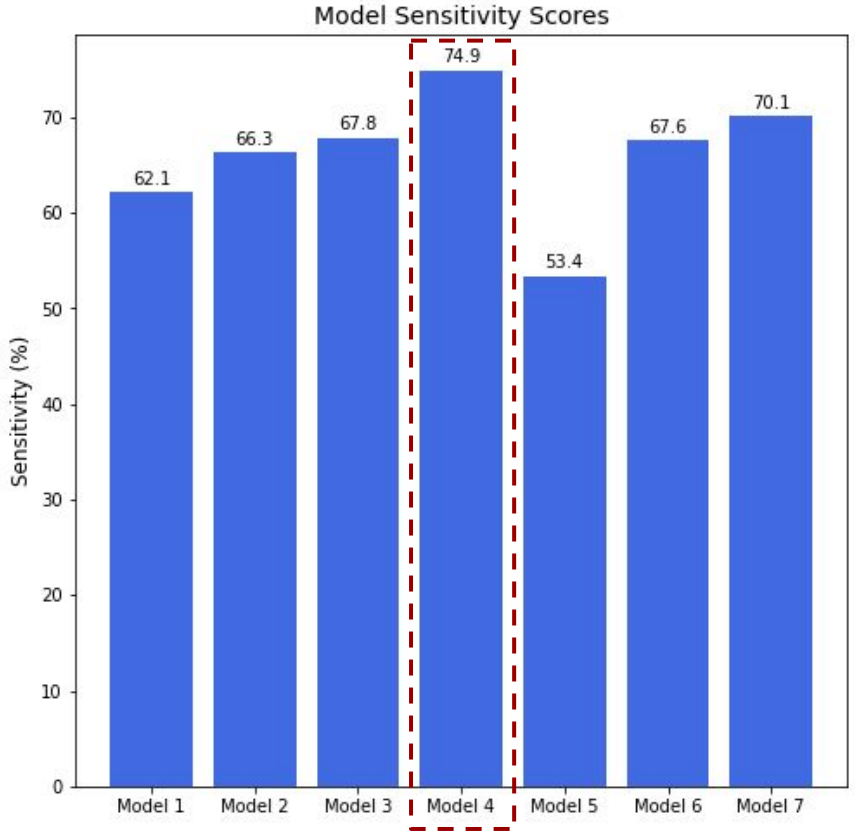
2 | Databases

Dataset used:

~60K patient admission claims, including discharge notes, from ICU units in a medical center in Boston

3 | Modeling

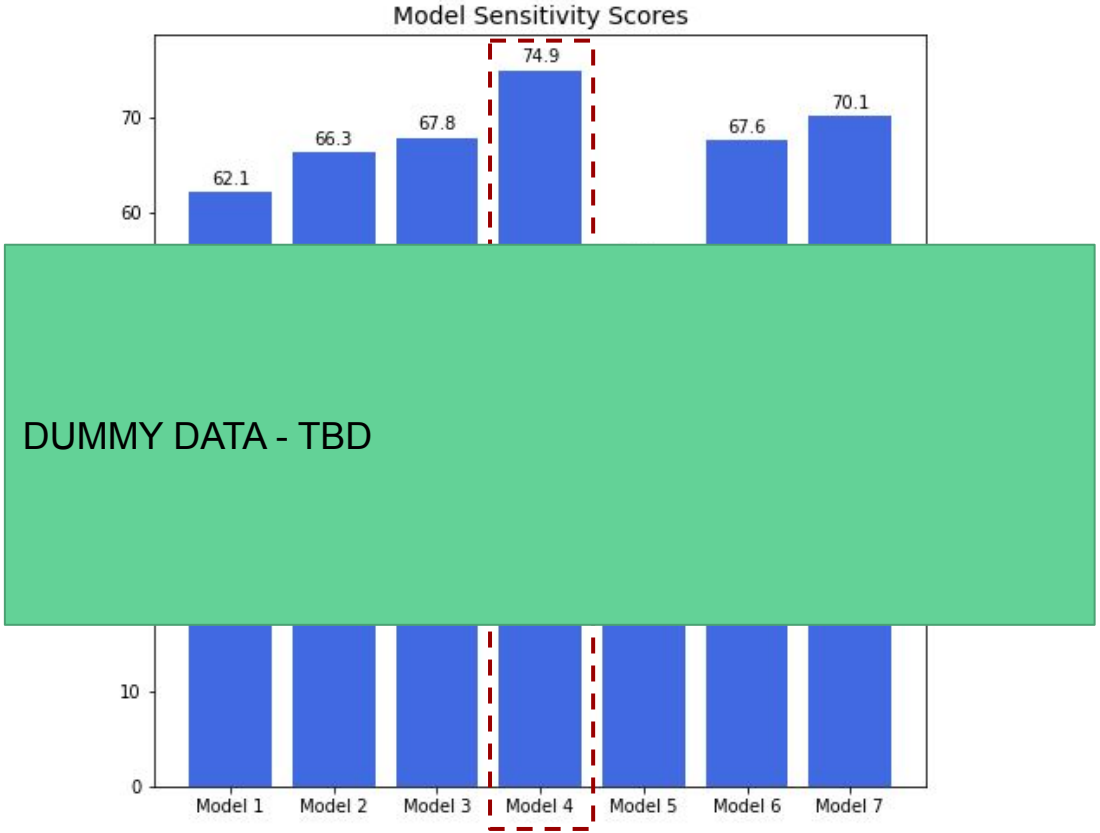
The best model to identify if a patient is likely to readmit within 30-days post discharge based only on discharge notes had a sensitivity of 75%



Model 4:

- Sensitivity: 98%

The best model with additional data features such as demographics and diagnoses had a sensitivity of XX%



Model X:

- Sensitivity: XX%

4 | Conclusion

Summary

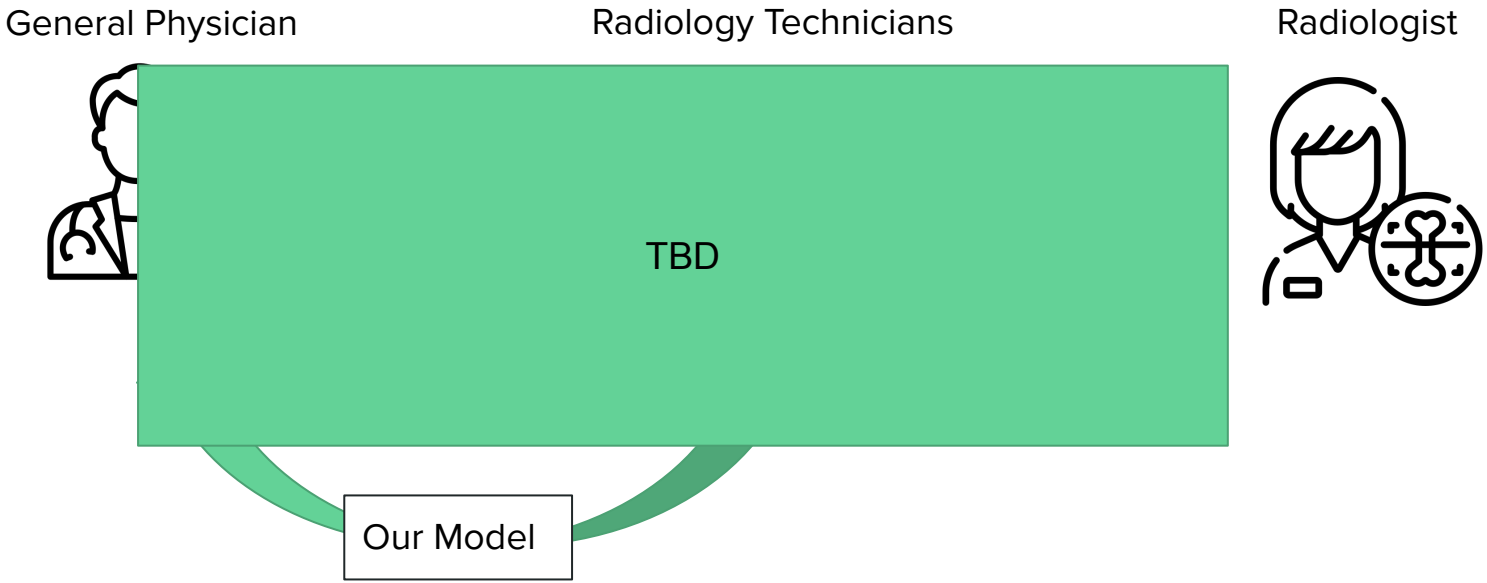
Current Workflow

General Physician

Radiology Technicians

Radiologist

New Workflow with Model



Nex

TBD

- Investigate if diagnosing pneumonia through our model rsed by insurance
- ls with images of rs del for X-ray er age groups, especially for 65+

Thank you!
Any questions?

GitHub Repository: https://github.com/arthursjkim/hospital_readmissions_nlp

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