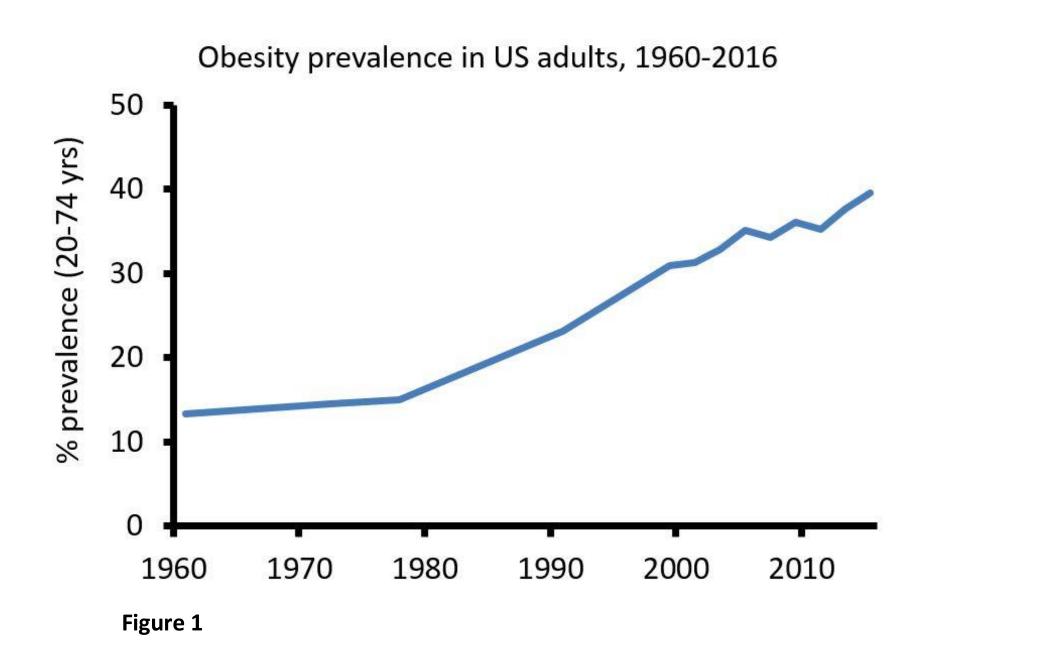
DUE **Corporate Partners Symposium 2022: IU Health Team**

ABSTRACT

Our goal with this project was to use IU Health's patient data (structured and clinical notes) and extract Social Determinants of Health (SDOH) to flag patients at risk of Obesity

WHY OBESITY

•Over 40% of Americans have been diagnosed with Obesity •Related to many of the leading causes of preventable Death •Increasing over time as shown in Figure 1



WHY SDOH

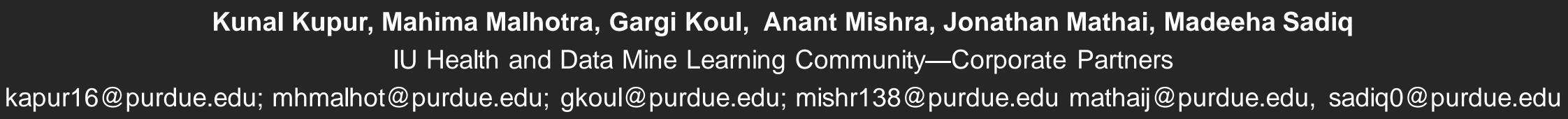
Social Determinants of Health are factors in an individual's environment and surroundings that can influence their health and risk for certain health conditions. Some examples of SDOHs and what they may influence are:

- Food access \rightarrow Diet
- Crime Rate \rightarrow Exercising outdoors
- Transportation Access → Healthcare Access

LITERATURE REVIEW

Looked at various research papers outlining similar projects

- The Utility of Clinical Notes for Sexual Minority Health Research
- Identify SO (sexual orientation) on veterans based on clinical notes
- Created concept dictionary of terms to map SO
- Showed us an example of how Clinical Notes can provide more information



METHODOLOGY

NLP Library Research

- ClinicalBERT and Bio+DischargeSummaryBERT
- Pre-trained libraries dealing with clinical notes and information
- SpaCy
- Name Entity Recognizer

Data Cleaning

 Selected notes with obesity diagnosis codes and by Body Mass Index and diagnosis

Annotation

• Annotated the nodes manually for specific social determinants of health using Annotation Guildlines created collaboratively with the team using guidelines in existing literature.

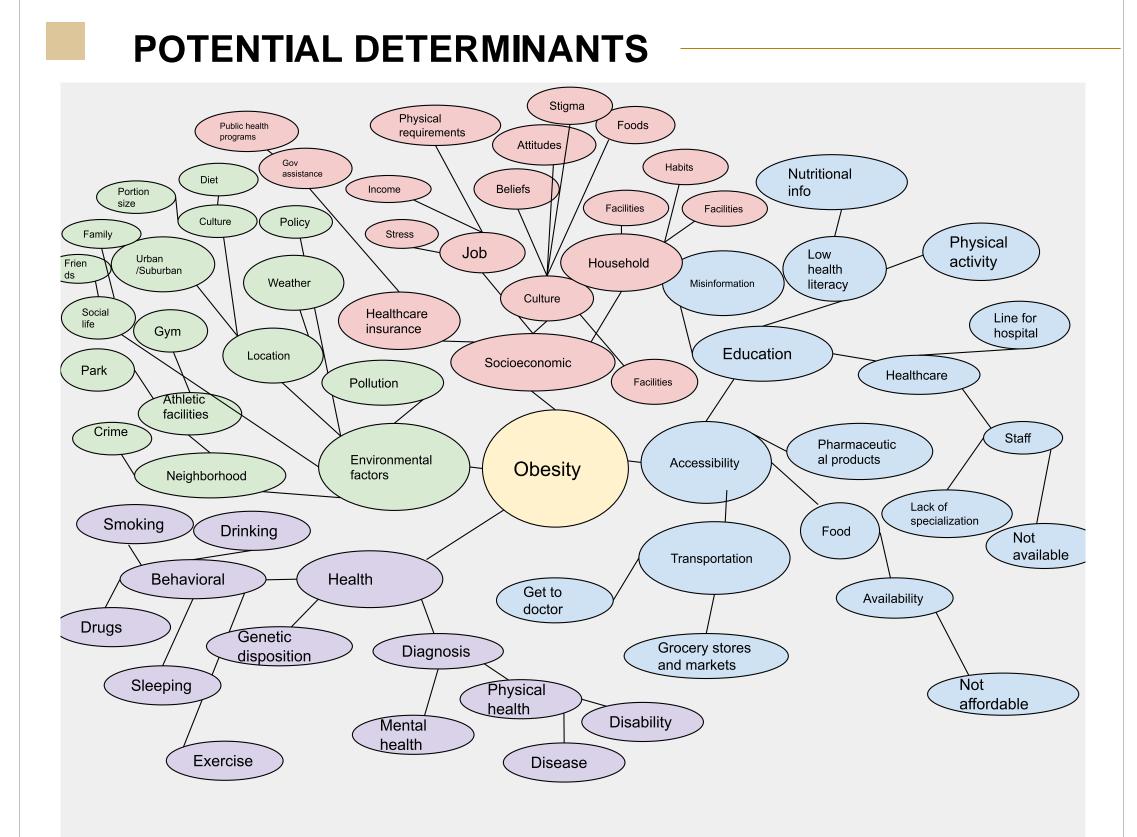


Figure 2

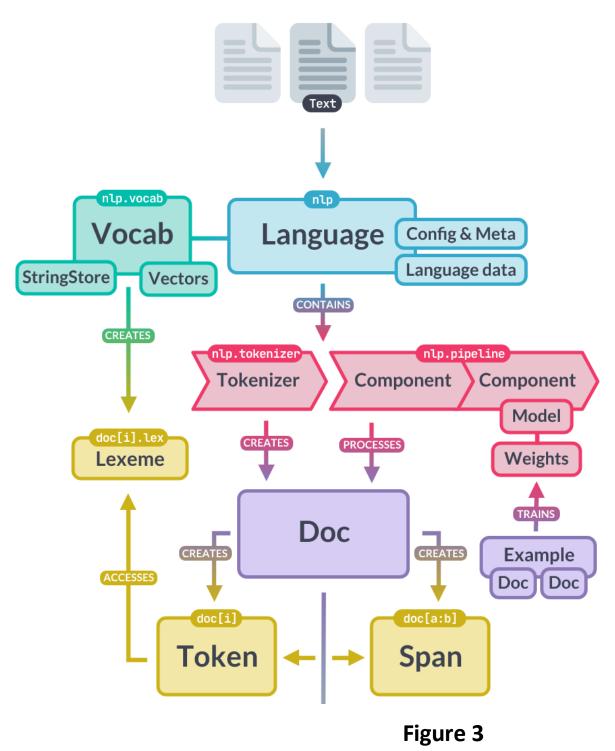
Figure 2 below shows many of the social determinants of health that may influence obesity, divided into the categories of Socioeconomic, Accessibility, Health, and Environmental Factors

We would like to thank the IU Health Team Dr. Ward, Dr. Grubb, for their guidance and support on this project. We'd also like to thank our TA Bhakti for her leadership and guidance.

WORKS CITED

FINAL STEP

Using the tags created through annotations, our model finds patterns in the Social Determinants of health found and establishes relations between the patterns and the Obesity diagnoses



FUTURE WORK

Integrating Public Data Sets

• Allows for analysis of more social determinants

• Allows for Model to be applicable outside of Indiana

Integrating annotation through unsupervised means

• Allows for more data to be analyzed without spending as much time

ACKNOWLEDGEMENTS

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