

# SIREN: Schema In-Fill Rendered from Entry Notification



Elizabeth DeTienne, EMT and Milka Piszczek  
Massachusetts Institute of Technology EMS

## Background

Entry notes are a type of radio transmission that first responders use to communicate critical patient data to hospitals during emergency calls. We created SIREN to make entry note data accessible to train personnel and draw insights about emergency care.

## The Problem

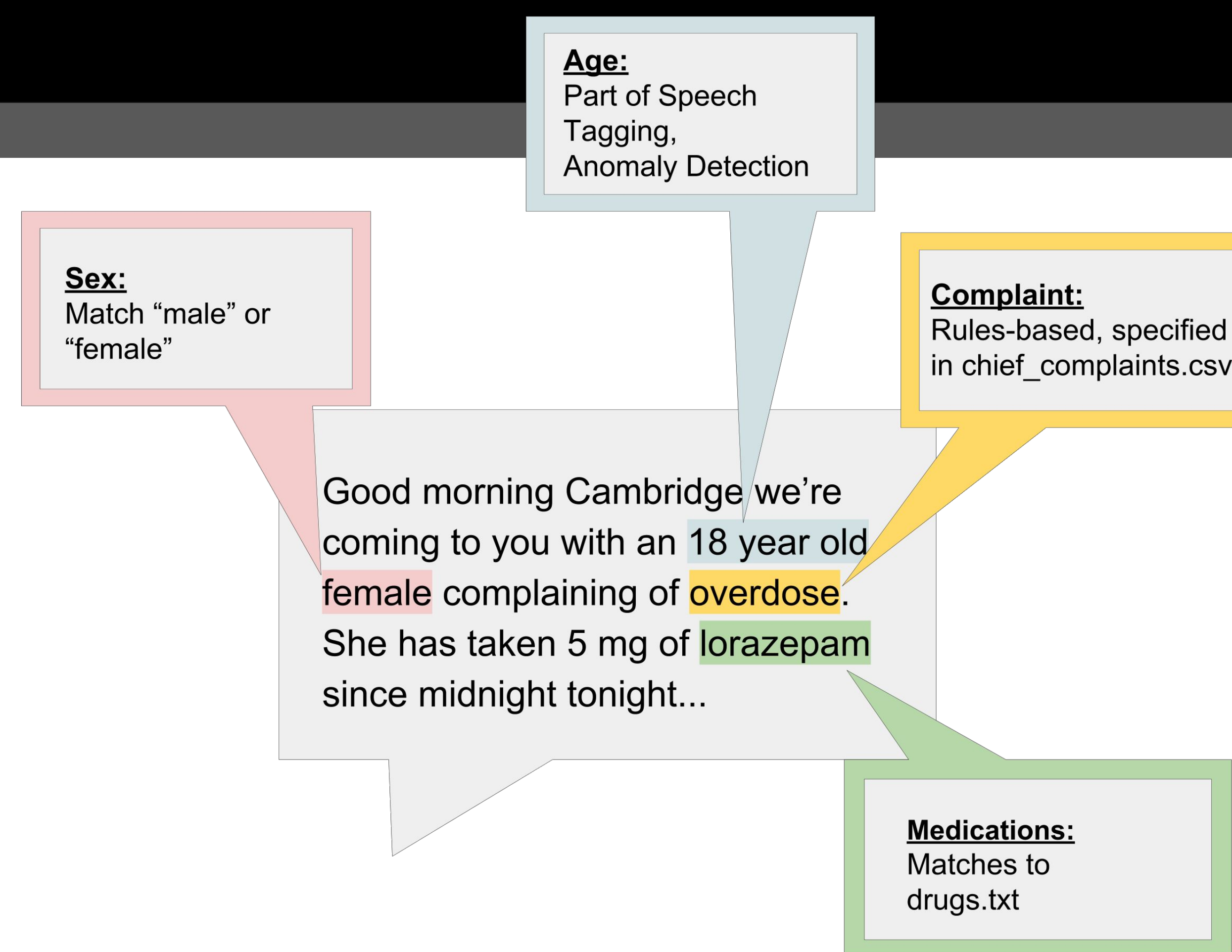
- There is no existing way to search entry notes.
- SIREN can be applied in three key ways:
  - Training new EMS personnel (especially in collegiate services with low call volume)
  - Large-scale data analysis
  - Improving continuity of care with hospital staff

## Challenges

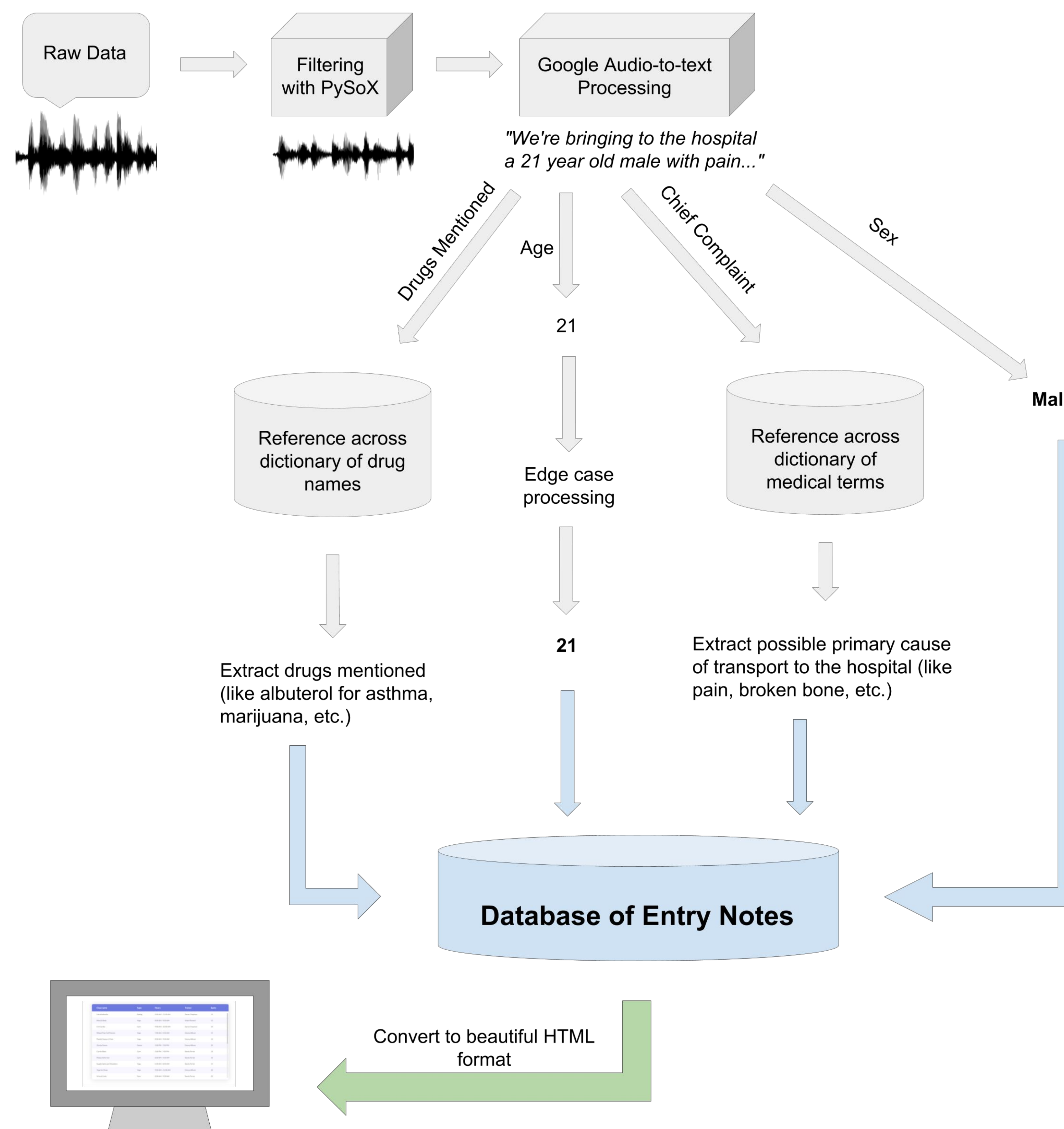
- Small data set
  - 169 files, but only 77 full entry notes
- Transcription is imperfect
- Not enough data to use most Machine Learning methods (e.g. neural networks)

## Response from MIT EMS

*"It's extremely difficult to train new students on what an entry note should consist of when there's such a wide variety of call types and differences in entry note styles between various members. Having a database would easily allow access to this valuable training tool."* -Current EMS Crew Chief

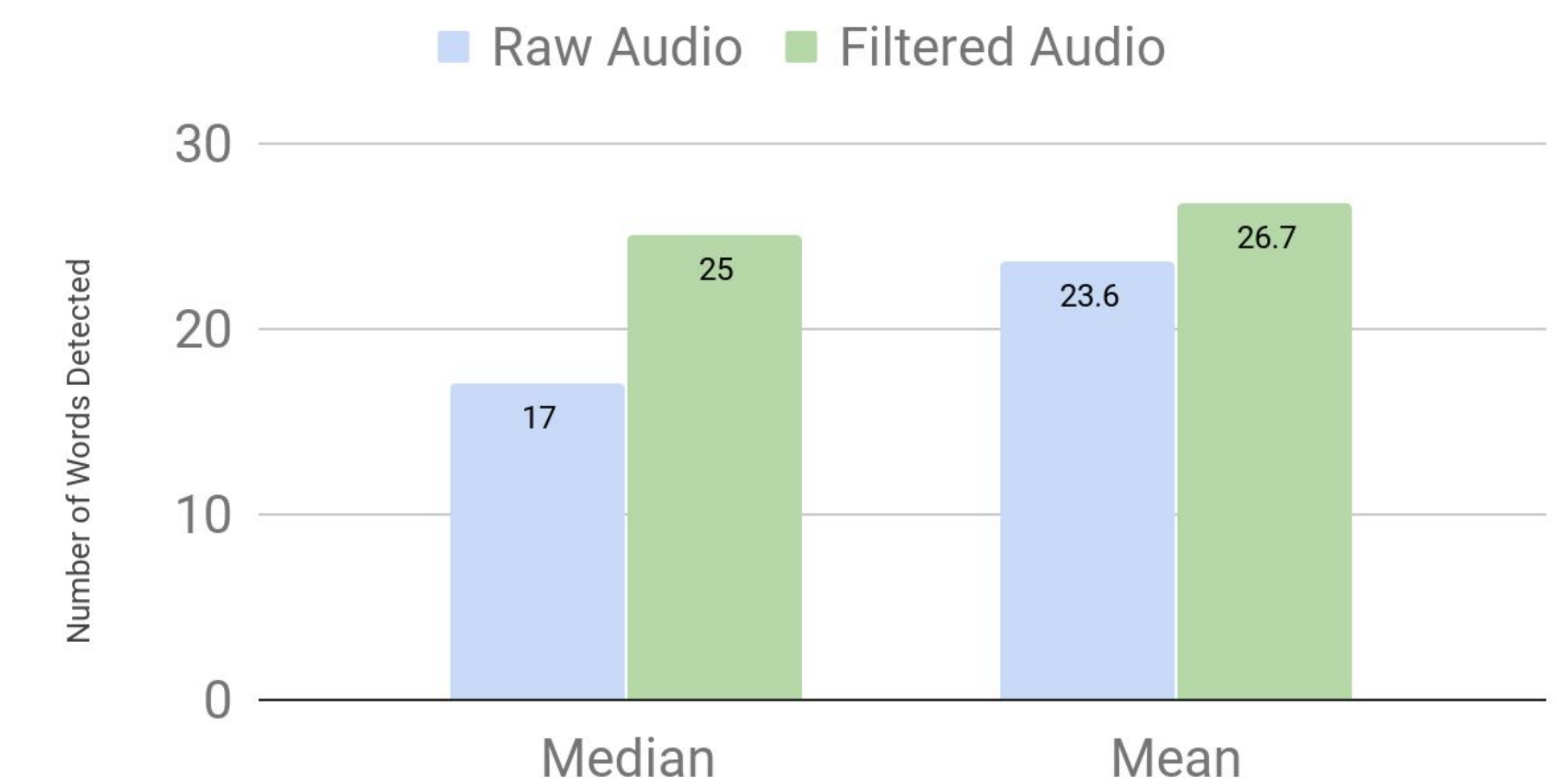


## System Overview

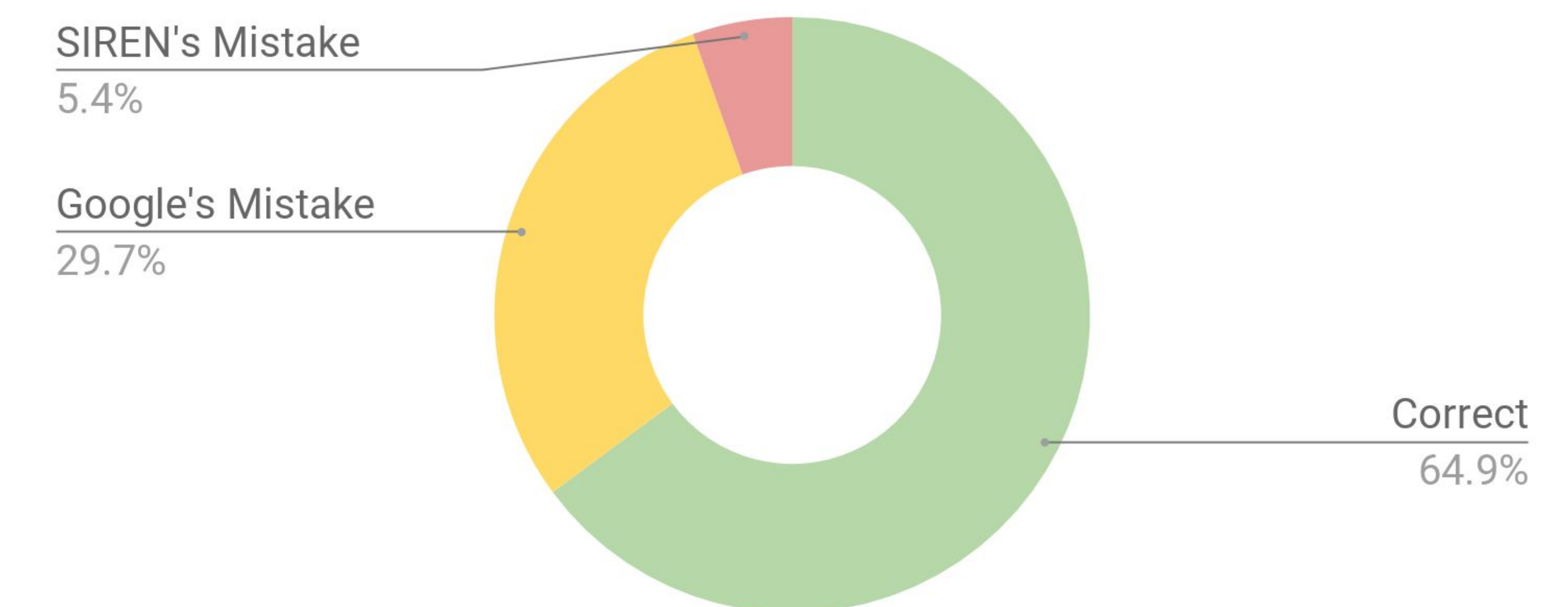


## Results

### Improvements After Filtering



### Age Extraction Performance



## Conclusion

SIREN is an end-to-end tool that takes voice files of hospital entry notes as input and converts them into informative database tuples that include age, sex, drug, and chief complaint information. The user interface makes it easy to skim or search entry notes.

## Acknowledgements

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**Contact:** [elizdet@mit.edu](mailto:elizdet@mit.edu) or [milka@mit.edu](mailto:milka@mit.edu)