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INTRODUCTION

- Cystic fibrosis (CF) is the most lethal genetic disorder among European descendants.
- Mutations in the CFTR gene result in the characteristic dehydrated mucus affecting the lungs, gastrointestinal tract, and reproductive organs.
- Social determinants of health (SDOH) result in varied clinical outcomes among genetically similar patients.
- Medicaid use is associated with a more rapid decline in lung function, measured by forced expiratory volume in 1 second (FEV1).
- Improved prognosis involves:
 - Stable FEV1% predicted
 - High BMI percentile
 - No history of *Pseudomonas aeruginosa* infections
 - Treatment with dornase alfa and CFTR modulators
- Objective:** To use screeners to identify socially vulnerable patients and evaluate the impact of SDOH on CF-related clinical outcomes.

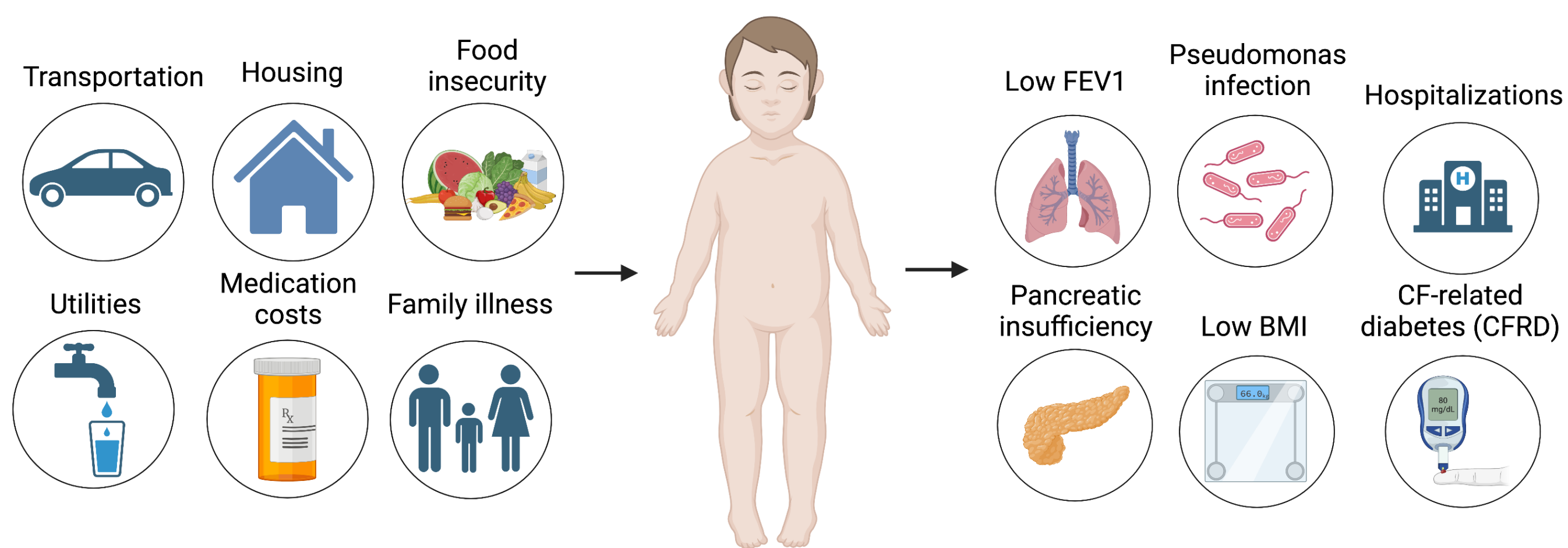
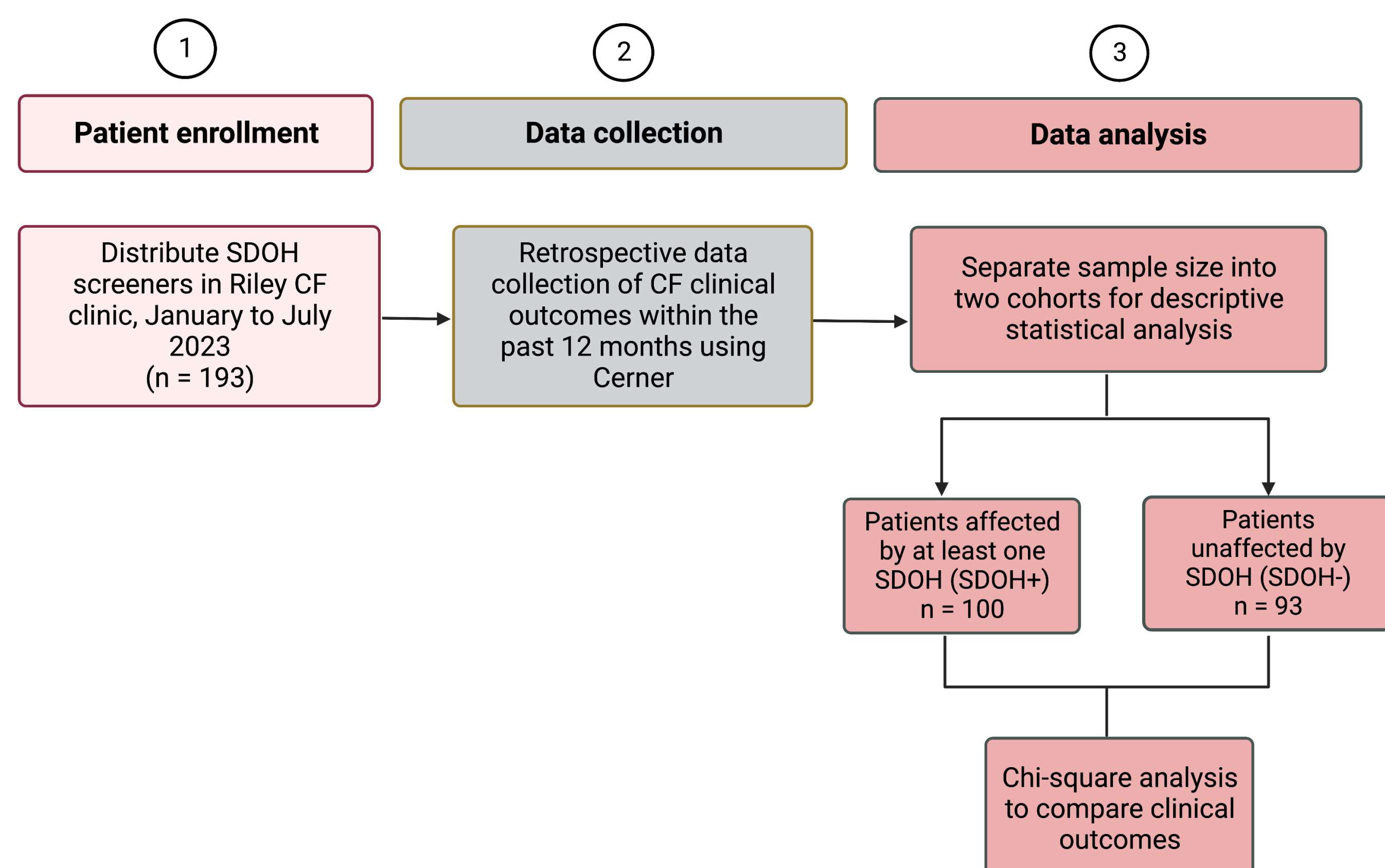


Figure 1: The SDOH assessed by the screener and its potential impact on the CF morbidities evaluated in this study.

METHODS



RESULTS

	Number (n)	Percentage (%)
Sex		
Male	101	52.60
Female	91	47.40
Race		
Caucasian	181	97.31
African American	5	2.69
Primary Insurance		
Private	85	44.27
Medicaid	99	51.56
CSHCS	5	2.60
MarketPlace	2	1.04
None	1	0.52

Table 1: Patient demographics.

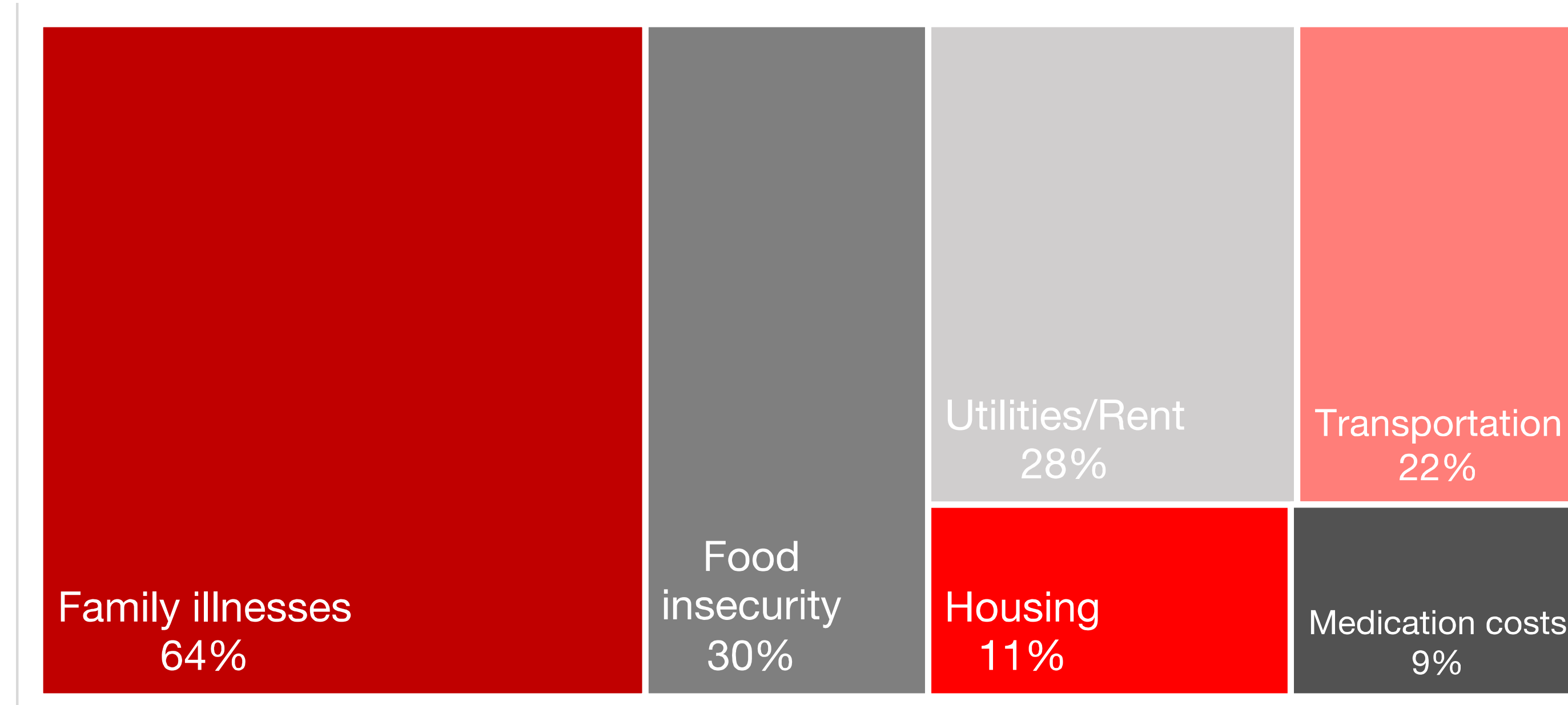


Figure 2: Treemap diagram illustrating the prevalence of various SDOH among patients who screened positive (n = 100).

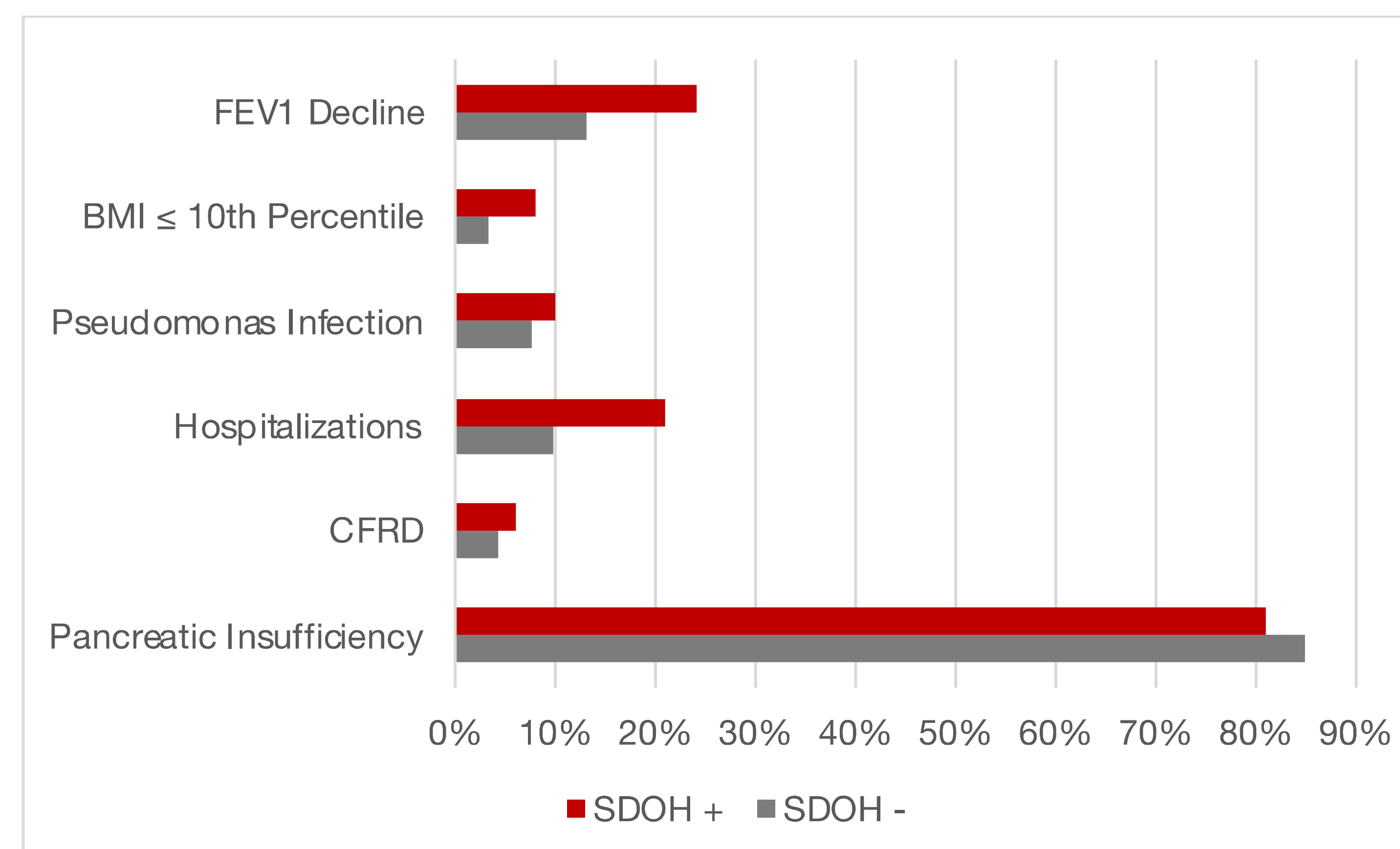


Figure 3: Clustered bar graph comparing the presence of CF morbidities among patients who screened positive (SDOH+) and patients who screened negative (SDOH-) within the past 12 months.

RESULTS

- A total of 193 screeners were collected, with 100 SDOH+ and 93 SDOH-.
- Positive screener results are associated with at least a 5% decline in FEV1% predicted from baseline ($X^2(1) = 4.33$; $p = 0.037$) and hospitalizations due to exacerbations of CF lung disease ($X^2(1) = 4.71$; $p = 0.030$).
- The average FEV1% predicted decline among SDOH+ patients was 5.79% and 3.51% among SDOH- patients.
- Low BMI percentile, *Pseudomonas* infection, and pancreatic insufficiency were not significantly associated with positive screeners ($p > 0.05$).

CONCLUSION

- FEV1 decline and hospitalizations should be more closely monitored in vulnerable patients.
- Although low BMI percentile, *Pseudomonas* infection, and CFRD were not significantly associated with SDOH, socially vulnerable patients still demonstrated higher rates of these outcomes.
- Screeners are effective in identifying socially vulnerable patients and can serve as the first step in addressing unmet social needs.
- This project identified SDOH prevalent in the clinic that we were previously unaware of.
- Limitations:** significance of results limited due to small sample size
- Future work:** study the effects of Medicaid re-enrollment on CF clinical outcomes

ACKNOWLEDGEMENTS

- Thank you to Dr. Sanders, Dr. de Laosa, Dr. Chmiel, and Sarah for your guidance on this project and all you have taught me in the clinic this summer.
- This project is part of the ongoing quality improvement project in the Cystic Fibrosis Center at Riley Hospital for Children.
- All images generated via BioRender.com and Microsoft Excel.

REFERENCES

Scan the QR code for abstract and references!

