

OBJECTIVES

- Child obesity can have a negative impact on a child's development and well-being¹
- Access to healthcare is an important protective factor against child obesity
- CDC's Social Vulnerability Index (SVI) is a valuable tool to study external stresses on communities²
- We investigated social vulnerability and access to preventive care in pediatric patients by BMI

METHODS

Study design

Retrospective cohort study

Study population

Patients were 6 to 17 years old with a healthy weight (ICD-10-CM Z68.52), overweight (Z68.53), or obesity (Z68.54) diagnosis in the accrual period

Data source

The PINC AI[™] healthcare database (PHD) is one of the largest hospital administrative databases in the United States (see QR code for more information)

Overall study period

01/01/2016 to 12/31/2022 (7 years)

Accrual period (for index visit and SVI)

01/01/2016 to 12/31/2019 (4 years)

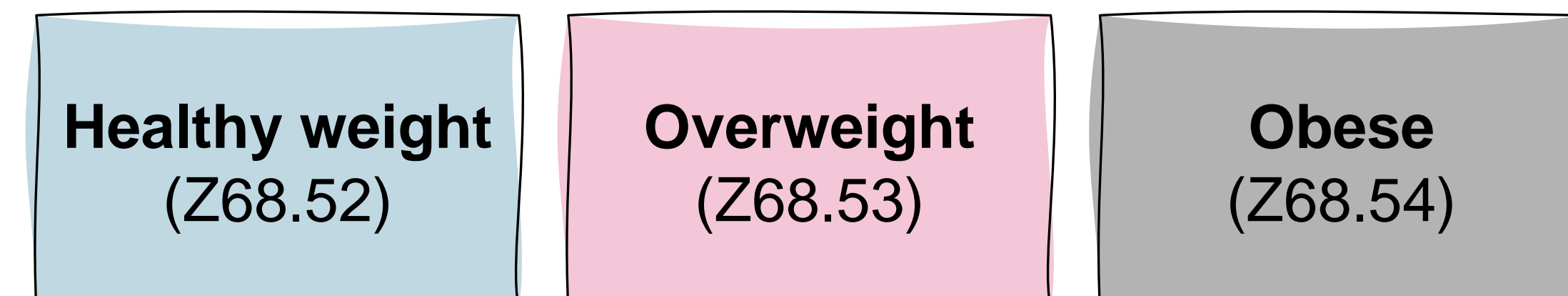
Follow-up period (for preventive care)

Index admission date to 12/31/2022 (≥ 3 years)

Index visit (inpatient or outpatient)

Earliest visit with diagnosis of BMI

Cohorts

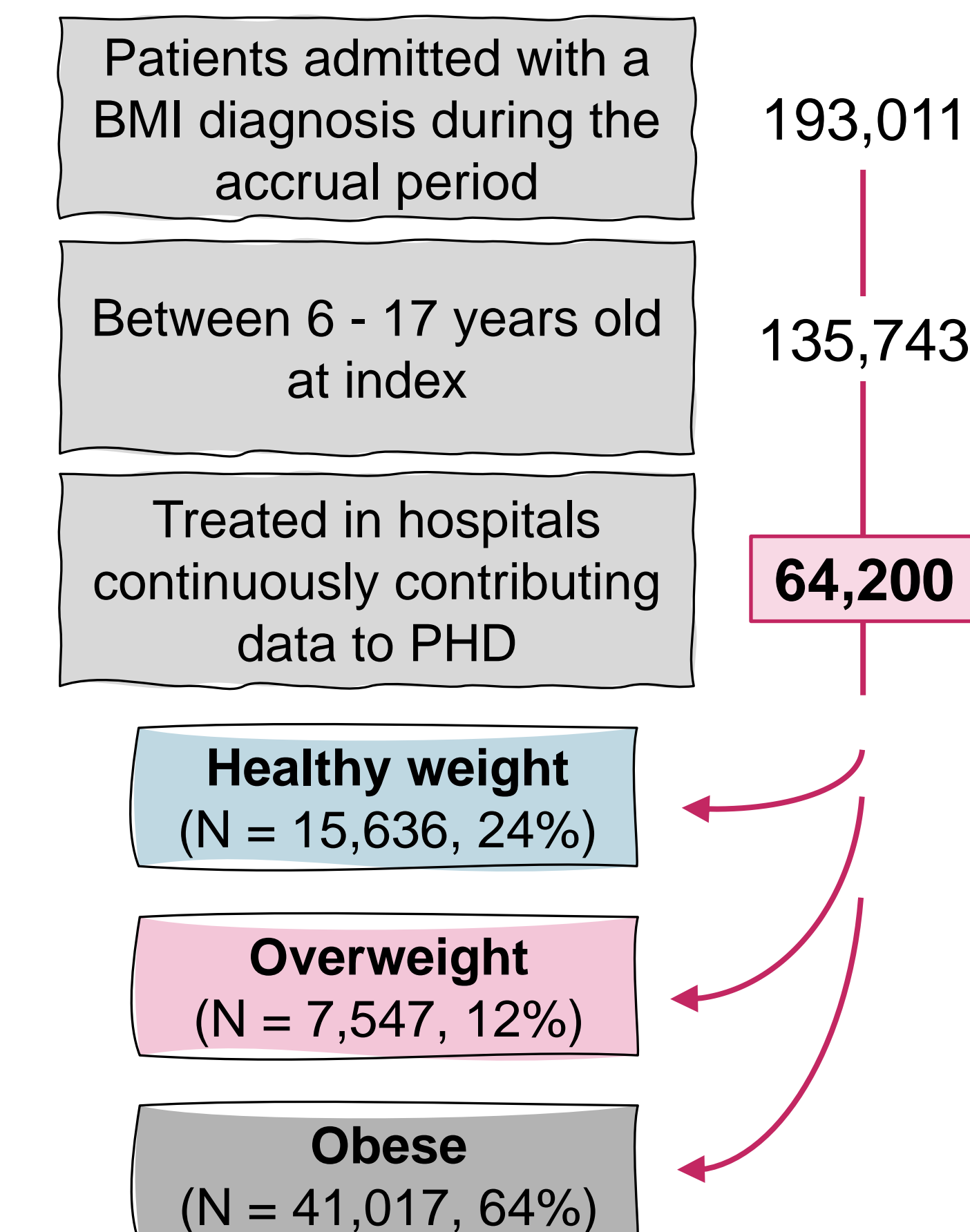


Statistical analysis

- CDC's SVI quintiles as **outcome** using adjusted multinomial logistic regression
- Visit rates for preventive care as **outcome** using adjusted logistic regressions
- BMI (cohorts) as **main predictor**
- Covariates** included sex, age, race, and ethnicity

RESULTS

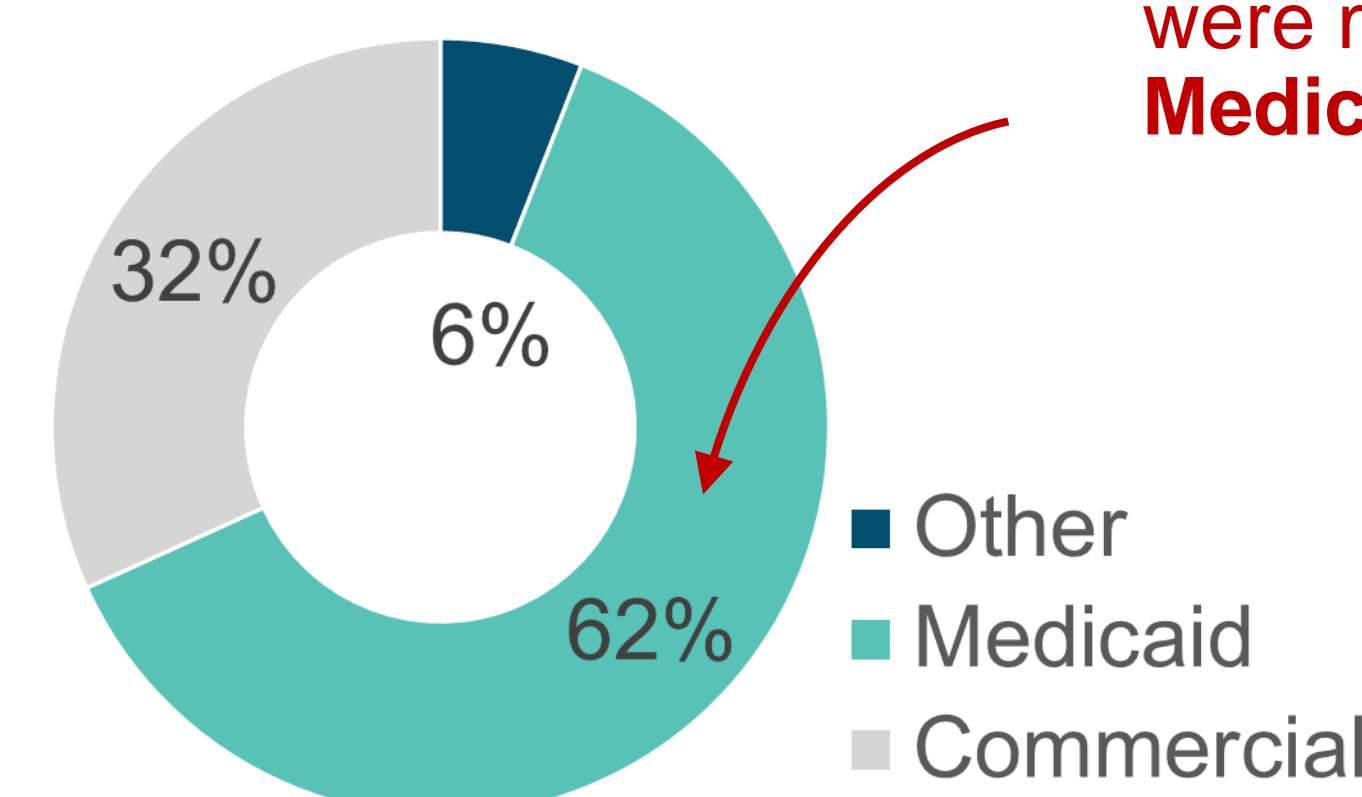
Study population



Patient characteristics

- Average follow-up of 23 months (SD = 23)
- 13 years old on average (SD = 3.3)
- Mostly female (53%)
- White (56%), Black (24%), Asian (1.3%), and Other (19%)

Primary Payor



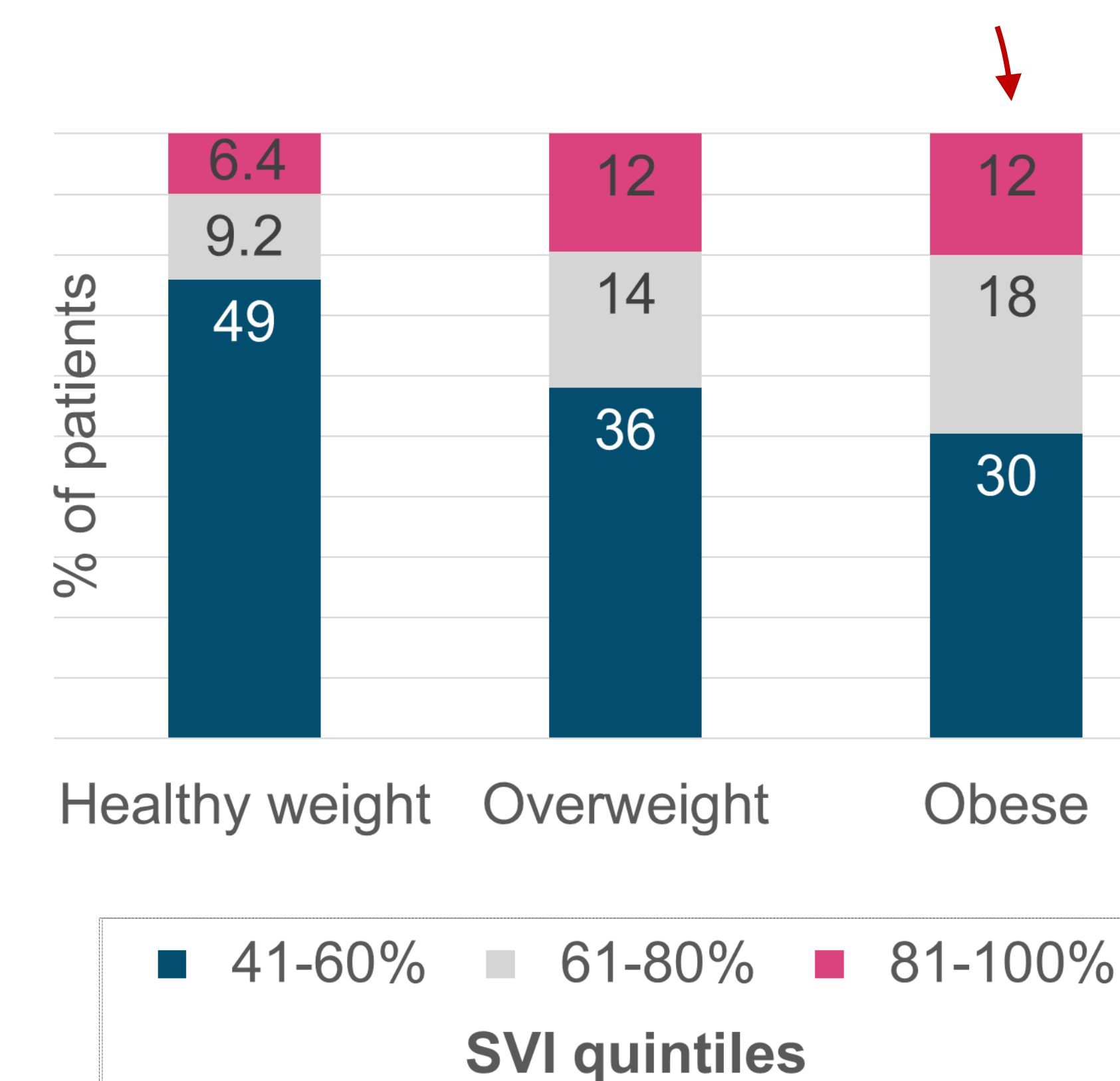
Obese (vs. healthy weight) patients were more frequently insured by **Medicaid** (65% vs. 57%, $p < 0.001$)

Obese (vs. healthy weight) patients are more likely to be in the **highest social vulnerability quintile** (12% vs. 6.4%)

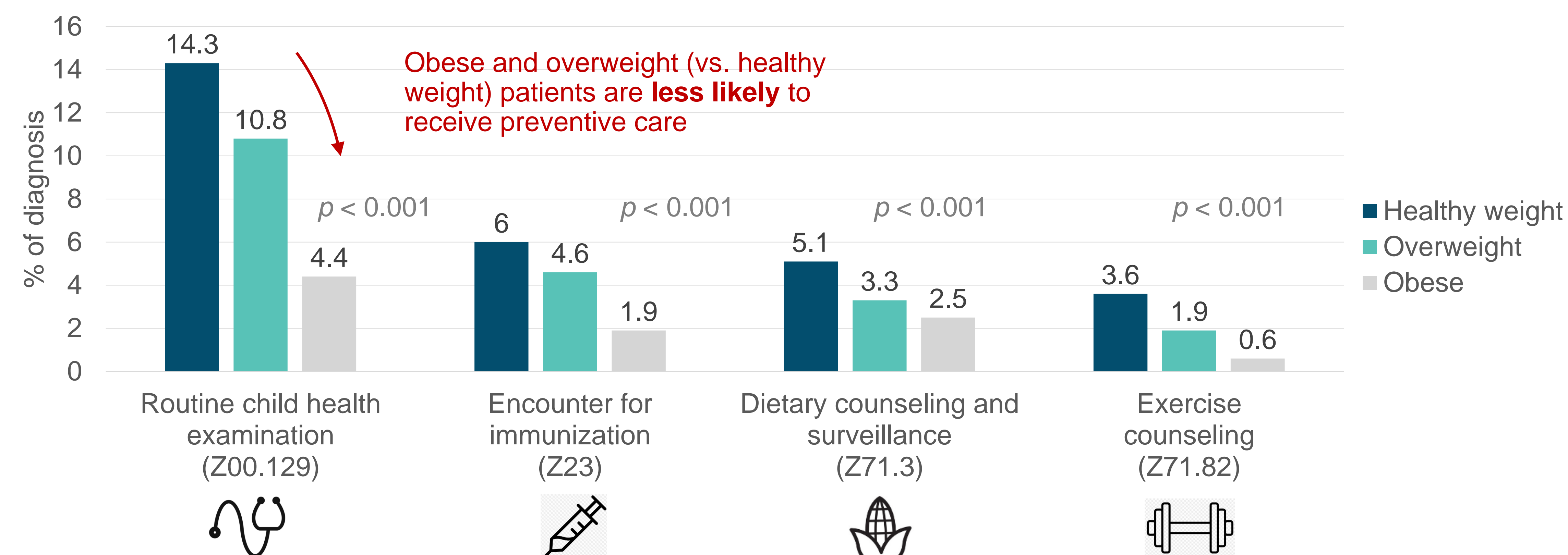
Social vulnerability (*higher = worse*)

Reference: Healthy weight (N = 15,636)	Overweight (N = 7,547)	Obese (N = 41,017)
	Adj. OR (95% CI)	Adj. OR (95% CI)
Quintile: 0-20% (ref)	1	1
Quintile: 21-40%	0.69 (0.62 - 0.77)	0.61 (0.56 - 0.66)
Quintile: 41-60%	0.62 (0.56 - 0.69)	0.46 (0.43 - 0.50)
Quintile: 61-80%	1.09 (0.96 - 1.24)	1.19 (1.09 - 1.30)
Quintile: 81-100%	1.44 (1.25 - 1.66)	1.32 (1.19 - 1.46)

Social vulnerability discrepancies exist beyond sex, age, race, and ethnicity



Preventive care



Hospital and visit characteristics

- Most index admissions were elective (62%)
- Most index discharges were to home (82%)
- Most index admissions were outpatient visits (87%)
- Most hospitals were rural (82%)

Obese (vs. healthy weight) patients were more often admitted to **small** (34% vs. 21%), **Southern** (48% vs. 39%), and **non-teaching** hospitals (40% vs. 25%)

Hospitals most likely to admit obese pediatric patients...



Small (< 300 beds)
Southern
Non-teaching
Rural

CONCLUSIONS & LIMITATIONS

Conclusions

- Children diagnosed with obesity have higher social vulnerability and receive less preventive care
- Improving access to general preventive care and reducing social vulnerability in obese children is needed
- Future research may focus on predictive analytics of child obesity to help mitigate adult obesity

Limitations

- Z-codes are underutilized, so we may have under-captured pediatric patients in the PHD
- We only followed patients within their index hospitals, so we missed visits to other hospitals
- We did not explore common social vulnerabilities in children, such as family abuse and poor education

REFERENCES

- CDC - Childhood Overweight & Obesity. <https://www.cdc.gov/obesity/childhood>
- CDC/ATSDR Social Vulnerability Index. <https://www.atsdr.cdc.gov/placeandhealth/svi>



PHD