

What are the differences in Maternal/Neonatal Outcomes at Stony Brook University Hospital by Zip code?

Christina Johnson, MD, Fiona Chui, BS, Samantha Dayton, MS, Diana Garretto, MD
Renaissance School of Medicine, Stony Brook University, Stony Brook, NY



Abstract

It is well known that there are increased adverse health outcomes in patients from lower socioeconomic statuses. Attempts at improving maternal/neonatal mortality and morbidity has been a cornerstone of public health outcomes across many nations, but difficulties that arise to improve outcomes are due to the lack of data identifying regions in need of intervention. Our objective is to assess differences in maternal and fetal outcomes at Sony Brook University Hospital by zip code and identify specific subpopulations with maternal and fetal outcomes below the national standard.

Objectives

To assess differences in maternal and fetal outcomes at Sony Brook University Hospital by zip code to identify specific subpopulations with maternal and fetal outcomes below the national standard.

Study Design

This is a retrospective chart review assessing maternal and neonatal mortality/morbidity at Stony Brook University Hospital between July 2016 and January 2017. The zip codes were collected and categorized into groups by the percentage below the 150% of the federal poverty line per Suffolk County census data and then the outcomes were compared by categories. These categories were: Category 1 with <5% below, Category 2 between 5-10% below, Category 3 between 10-15% below, Category 4 between 15-20% below, and Category 5 over 20% below. Individual zip code data was also analyzed to further understand areas for intervention. The primary outcome is the combined rates of maternal and infant mortality. Secondary outcomes include maternal and neonatal morbidities.

Results

Baseline Demographics

		Cat 1 N=14	Cat 2 N=173	Cat 3 N=129	Cat 4 N=140	Cat 5 N=96
		%	%	%	%	%
Race	White/Caucasian	92.86	79.77	68.75	54.68	28.72
	Black/African American	0	2.89	6.25	10.79	19.15
	Asian	0	5.78	6.25	4.32	2.13
	American Indian	0	0	0	0	2.13
	Other	7.14	11.56	18.75	30.22	47.87
Ethnicity	Hispanic/Latino	7.14	12.35	20.8	34.31	49.46
	Not Hispanic/Latino	92.86	87.65	79.2	65.69	50.54
Language	English	100	156	112	104	74
	Spanish	0	13	14	31	21
	Other	0	2	3	4	1
Marital Status	Single	35.71	66	63	85	65
	Married	64.29	99	62	49	24
	Widowed	0	1	1	0	0
Insurance Type	Private	57.14	112	57	47	23
	Medicaid / Medicare	28.57	44	51	74	63
	Out of Pocket	7.14	7	6	7	4
	Other	7.14	10	15	12	6

Combined Maternal & Perinatal Mortality

		Cat 1,2,3 N=315	Cat 4, 5 N=233	p value
Mortality	No	184	357	0.64
	Yes	3	8	

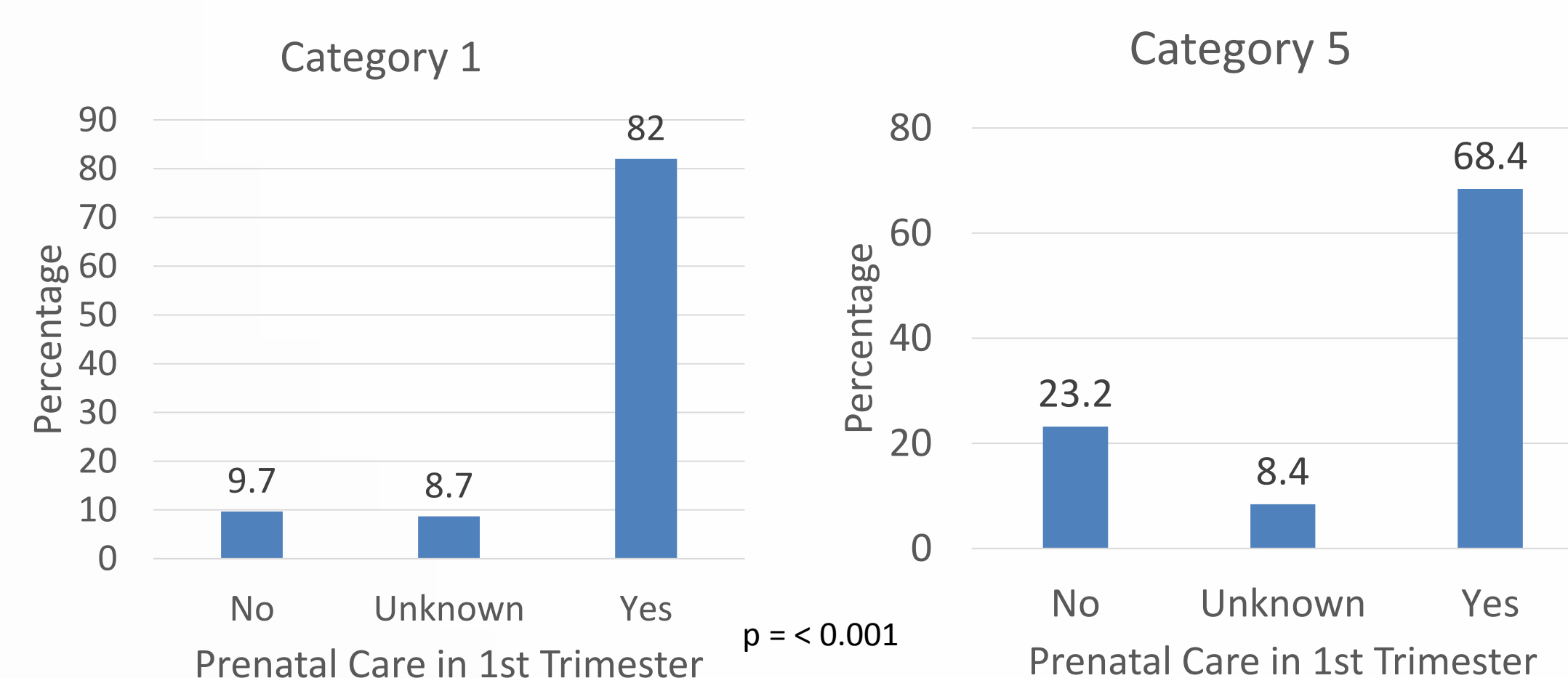
Maternal Morbidity

		Cat 1,2,3 N=315	Cat 4, 5 N=233	p value
Postpartum Readmission	No	98.73	97.88	0.5068
	Yes	1.27	2.12	
Wound Infection	No	99.68	99.15	0.5791
	Yes	0.32	0.85	
Puerperal Infection	No	93.65	94.07	0.8405
	Yes	6.35	5.93	
Gestational Age at Delivery	< 24 Weeks	0.95	2.12	0.2215
	24 - 37 Weeks	6.65	9.75	
	> 37 Weeks	92.41	88.14	

Neonatal Morbidity

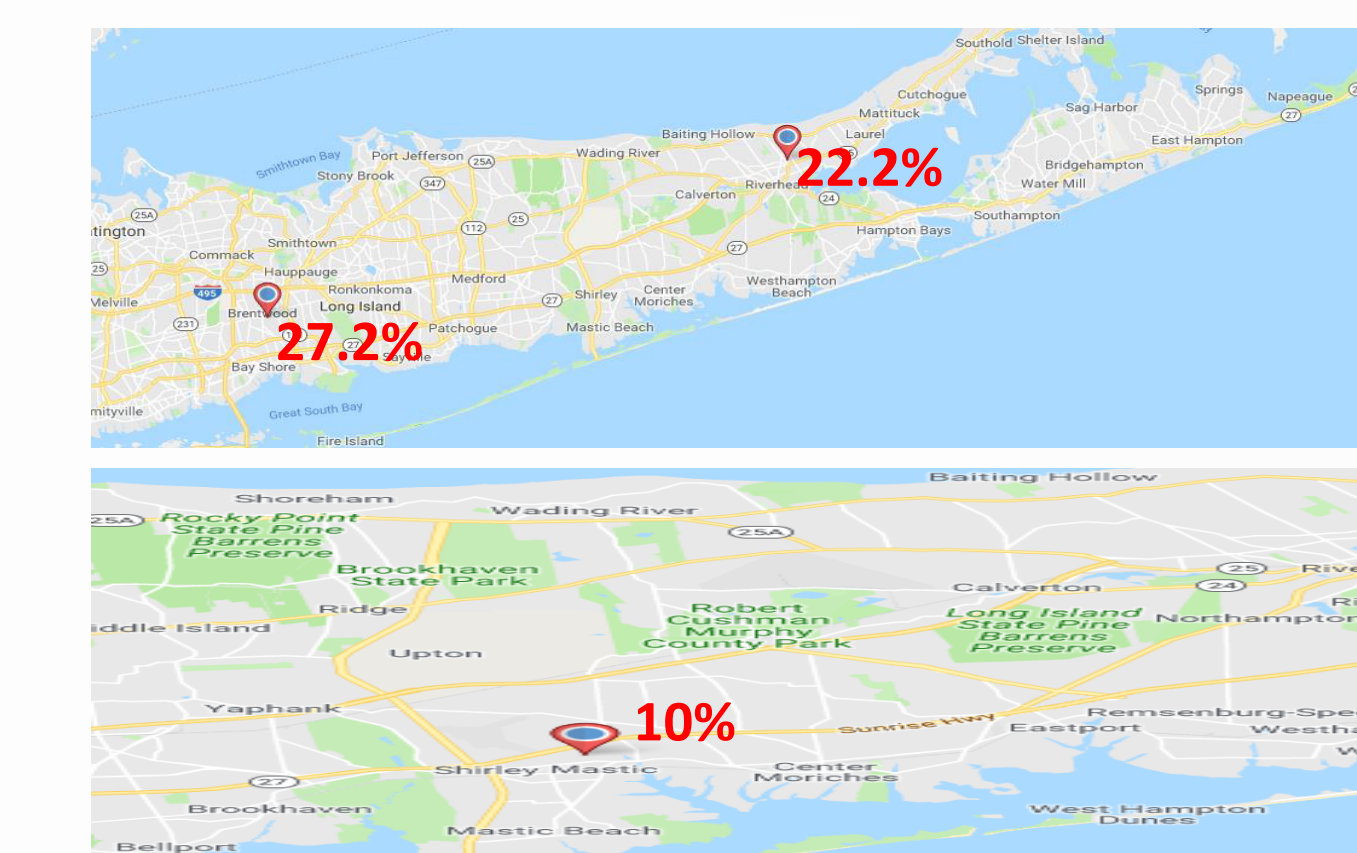
		Cat 1,2,3 N=315	Cat 4,5 N=233	p value
Diagnosis of IUGR	No	98.7	99.13	0.7043
	Yes	1.3	0.87	
Fetal APGAR Scores 1 min <5	No	93.99	91.06	0.1909
	Yes	6.01	8.94	
Fetal APGAR Scores 5 min <7	No	96.84	94.47	0.1694
	Yes	3.16	5.53	
NICU Admission	No	78.91	78.35	0.875
	Yes	21.09	21.65	
Fetal Respiratory Distress Syndrome	No	94.89	94.42	0.8096
	Yes	5.11	5.58	

Access to Prenatal Care



Results

Rates of Preterm Deliveries and Stillbirth varied in Long Island, NY



Conclusion

- There were no maternal mortalities during the time frame assessed for this study.
- There were no significant differences in neonatal mortalities, maternal or neonatal morbidities between the different categories.
- Many maternal and fetal outcomes were similar across categories although when specific zip codes are analyzed, there are areas with higher rates of preterm birth and stillbirth.
- Further analysis is needed comparing similar categories to understand broader differences in outcomes on Suffolk County.

References

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