

## Special Report: Pre-COVID-19: Selected Characteristics and Comorbidities of the Maternal Patient Population

### BACKGROUND

Throughout the spring and early summer of 2020, the COVID-19 pandemic has had a significant impact on healthcare systems within the United States and continues to result in the hospitalization of sick and critically ill patients, including pregnant women and those presenting for delivery. There have been numerous case reports and cohort studies that have provided just-in-time information to obstetric and perinatal care teams during the past several months and continue to prove to be an emerging and important resource. In addition, the National Perinatal Information Center (NPIC) has provided online platforms to share practices and new policies that continue to shift with the emerging science related to COVID-19.

Pre-existing comorbidities within the obstetric population have been described in the literature during the COVID-19 pandemic (Breslin et al, 2020; Ryan et al, 2020; Blitz et al, 2020). The most common pre-existing comorbidities described in the COVID-19 literature are obesity, diabetes, hypertension, and pulmonary involvement, such as asthma. There continues to be emphasis and interest in how existing comorbidities may impact the severity and outcomes of COVID-19 within the obstetric population. As NPIC continues to serve as an active partner for you and your future COVID-19 data analysis, assessing your comorbidity data and indices prior to the arrival of the pandemic may be helpful in establishing if indeed those trends are founded in your population(s). The ability to measure the severity of illness based upon your obstetric comorbidity profile as defined in the literature may offer additional obstetric case reports and cohorts to add to the current COVID-19 literature.

This Special Report provides an in-depth exploration of your hospital's comorbidity profile based upon the most frequently reported within the literature to date. Of note:

- This report includes all Obstetric (MDC 14) inpatient cases (discharges) for the V19.4 period, 01/01/2019 – 12/31/2019 in addition to a trended look by quarter going back to CY 2018 Q1
- NPIC has included the following comorbidities for this report: Asthma, Diabetes, Hypertension, Obesity, and Tobacco/Smoking Status. Tobacco use was added as a comorbid condition as smoking has been identified in other non-obstetric literature as a comorbidity for predicting severity of disease (Vardaras & Nikitara, 2020; Zhao et al, 2020)
- These comorbidities are also segmented by race, and provide a more thorough understanding of your obstetric community and comorbidity profile

## DESCRIPTION OF TABLES AND CHARTS

**Table 1: Obstetric Cases with Select Diagnoses:** the number of Obstetric (MDC 14) cases at your facility where the encounter was coded with one of the five selected diagnoses (Asthma, Diabetes, Hypertension, Obesity, and Tobacco Use). A case can be included in multiple diagnosis groups. NPIC database and Subgroup averages are included for comparison.

**Table 2: Obstetric Cases by Race:** Obstetric cases grouped by Race category. Note cases that could not be mapped or those left blank were included in Unknown. NPIC database and Subgroup averages are included for comparison.

**Chart 1: Percent of Obstetric Cases with Select Diagnoses, Grouping by Race:** a “heat map”-like view showing percent of Obstetric cases with selected diagnoses grouped by Race. The color-coding displays significance relative to the overall NPIC database average for the diagnosis group. As an example, for the V19.4 time period 7.4% of all Obstetric cases were coded with Asthma. For this diagnosis group each Race category is compared to the overall rate of 7.4%, not a specific value by Race.

**Chart 2: Percent of Obstetric Cases with Select Diagnoses:** this is the same criteria as the data in Table 1 except grouped by quarter and going back to 2018Q1 (Jan – Mar 2018). Each quarterly data point is color-coded by significance compared to the quarterly NPIC database average. The source data for the group of charts are shown in the tables to their right.

**Pre-COVID-19: Selected Characteristics and Comorbidities of the Maternal Patient Population**  
**V19.4 CY 2019Q1 – 2019Q4**  
**NPIC ID: SA1**

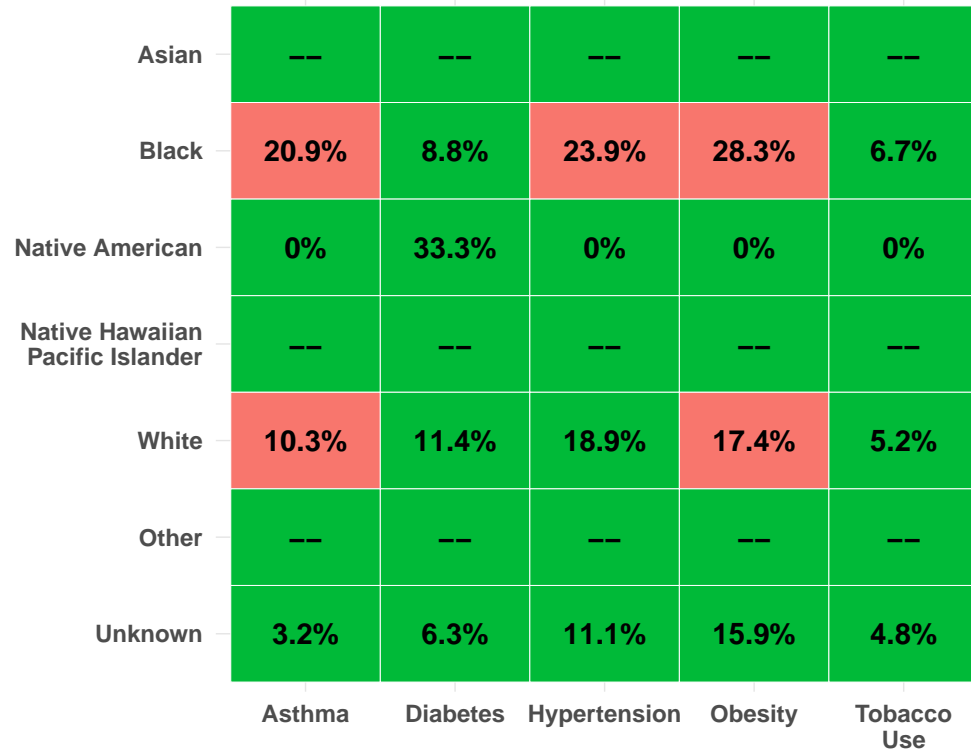
**Table 1: Obstetric cases w/Select Diagnoses**

Diagnosis Group	n	%	Subgroup Avg	NPIC DB Avg
Asthma	436	15%	9.7%	7.4%
Diabetes	293	10.1%	10.6%	9.9%
Hypertension	610	21%	21.8%	18.5%
Obesity	649	22.4%	15.1%	14%
Tobacco Use	171	5.9%	4.2%	3.7%

**Total Obstetric Cases: 2,901**

**Chart 1: Percent of Obstetric Cases with Select Diagnoses**

Grouping by Race



**Table 2: Obstetric cases by Race**

Race	n	%	Subgroup Avg	NPIC DB Avg
Asian	---	---	6.3%	6.2%
Black	1,343	46.3%	19.5%	21.9%
Native American	3	0.1%	0.9%	0.6%
Native Hawaiian Pacific Islander	---	---	0.1%	0.2%
White	1,492	51.4%	54.3%	53%
Other	---	---	3.4%	6.3%
Unknown	63	2.2%	15.4%	11.8%

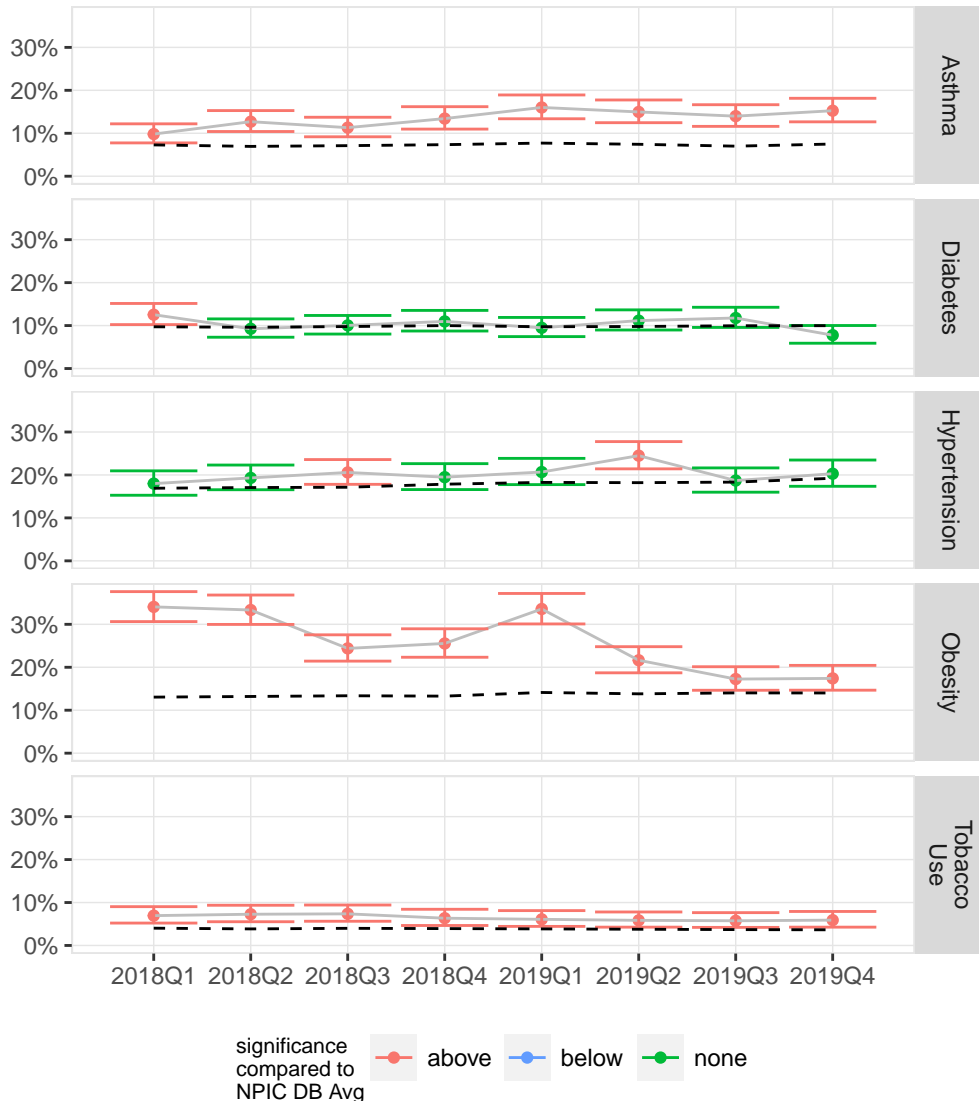
**significance compared to NPIC DB Avg**  
■ above ■ below ■ none

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## Trend CY 2018Q1 – 2019Q4

### NPIC ID: SA1

Chart 2: Percent of Obstetric Cases with Select Diagnoses



Asthma								
group	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4
NPIC Avg	7.3%	6.9%	7.1%	7.3%	7.7%	7.4%	7%	7.5%
SA1	9.8%	12.7%	11.3%	13.4%	16%	15%	14%	15.3%

Diabetes								
group	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4
NPIC Avg	9.7%	9.6%	9.8%	10%	9.7%	9.8%	10%	10%
SA1	12.5%	9.3%	10%	11%	9.5%	11.2%	11.8%	7.8%

Hypertension								
group	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4
NPIC Avg	16.9%	17.1%	17.1%	17.8%	18.3%	18.2%	18.3%	19.2%
SA1	18%	19.3%	20.6%	19.5%	20.7%	24.5%	18.7%	20.3%

Obesity								
group	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4
NPIC Avg	13%	13.2%	13.4%	13.3%	14.1%	13.8%	14%	14%
SA1	34.1%	33.3%	24.4%	25.5%	33.6%	21.6%	17.3%	17.4%

Tobacco Use								
group	2018 Q1	2018 Q2	2018 Q3	2018 Q4	2019 Q1	2019 Q2	2019 Q3	2019 Q4
NPIC Avg	4%	3.9%	4%	3.9%	3.9%	3.8%	3.7%	3.6%
SA1	6.9%	7.3%	7.4%	6.3%	6.1%	5.9%	5.8%	5.9%