Impact of Insurance in Racial Disparities in COVID-19 Hospitalization and Sequelae in a Large Non-Medicaid Expansion State

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BACKGROUND

- Texas is one of 12 non-Medicaid expansion states and has the highest uninsured rate in the U.S.
- Recent study finds that the COVID-19 pandemic resulted in increased rates of uninsured in Texas.[1]
- We sought to examine if there were differences in COVID-19 outcomes among those with Medicaid coverage and the uninsured across different racial/ethnic groups.

METHODS

- Retrospective analysis of patients hospitalized in 81 hospitals in Dallas- Ft. Worth (DFW) area.
- Included COVID-19 inpatients from 3/1/2020 to 9/30/2021 to examine risk for hospitalization.
- Data presented compares Medicaid and uninsured population as they were similar in age distribution and addressed national policy questions.
- In Texas low-income women are eligible for Medicaid when pregnant. Almost 37% of hospitalized COVID-19 patients with Medicaid were pregnant (see poster #1397). Thus, we analyzed the data overall and with pregnancy removed.

Figure 1. Flowchart for identification of study groups in our study cohort.
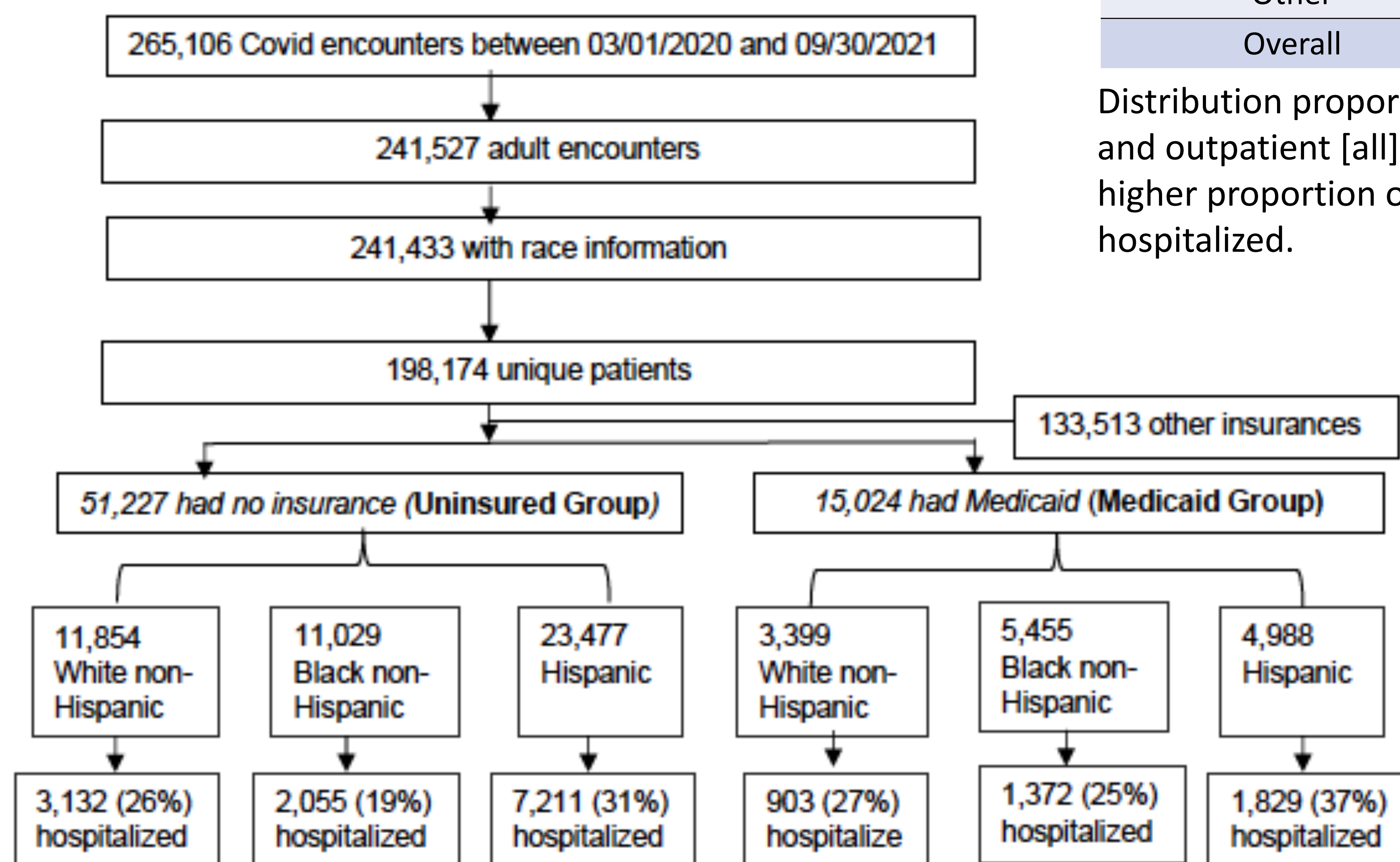
Regardless of Race and Ethnicity:

* Uninsured patients were at higher risk for hospitalization (among non-pregnant population).
*Once hospitalized the risk for COVID-19 pneumonia and respiratory failure is higher for uninsured patients.
*However, after discharge readmission at 30-day (COVID or non-COVID related) is consistently higher among Medicaid compared to uninsured likely due to lower health care utilization seen in uninsured patients (see poster #1397)

SUMMARY: Disparities in adverse COVID-19 outcomes are driven by insurance across all racial/ethnic groups.

RESULTS

Table 1: Distribution of race/ethnicity by insurance status for COVID+

	All COVID+ (N= 66,251)		Hospitalized COVID+ (n=18,068)	
	Uninsured	Medicaid	Uninsured	Medicaid
	%	%	%	%
Race-Ethnicity				
White non-Hispanic	77.7	22.3	77.6	22.4
Black non-Hispanic	66.9	33.1	60.0	40.0
Hispanic	82.5	17.5	79.8	20.2
Other	80.5	19.5	77.8	22.2
Overall	77.3	22.7	75.4	24.6

Distribution proportion by race/ethnicity of those with COVID-19 (inpatient and outpatient [all]) was similar to the proportion hospitalized. A slightly higher proportion of Black and Hispanic Medicaid recipients were hospitalized.

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Table 2a. Association between insurance status and patient outcome among all patients

Outcomes	Medicaid vs. Uninsured (OR and 95% Confidence Interval)		
	Whites non-Hispanic	Black non-Hispanic	Hispanic
Hospitalization	0.97 (0.86, 1.09)	**1.15 (1.04, 1.28)**	**1.47 (1.36, 1.60)**
ICU	1.0 (0.84, 1.18)	0.95 (0.81, 1.10)	**0.65 (0.58, 0.74)**
COVID-19 Pneumonia	**0.51 (0.43, 0.61)**	**0.61 (0.52, 0.72)**	**0.32 (0.28, 0.37)**
Respiratory Failure	**0.59 (0.50, 0.70)**	**0.69 (0.59, 0.80)**	**0.42 (0.37, 0.47)**
Cardiac Failure	1.03 (0.79, 1.36)	1.20 (0.94, 1.54)	**1.23 (1.03, 1.48)**
Renal Failure	0.83 (0.44, 1.59)	**1.37 (1.35, 1.38)**	**1.55 (1.10, 2.17)**
30-day Non-COVID Readmission	**1.93 (1.34, 2.78)**	**2.52 (1.77, 3.60)**	**1.48 (1.06, 2.07)**
30-day COVID Readmission	**1.72 (1.19, 2.49)**	**1.46 (1.04, 2.05)**	**1.57 (1.13, 2.18)**

Bold (p<0.001). All models adjusted for age group, race, Hispanic ethnicity, emergency room visit, presence of comorbid conditions at index COVID encounter including diabetes, cardiovascular disease, atherosclerotic heart disease, congestive heart failure, asthma, chronic obstructive pulmonary disease, end-stage renal disease, liver disease, hypertension, cancer, chronic kidney disease, rheumatoid arthritis, neurological disease, mental disease, HIV.

Table 2b: Association between insurance status and patient outcome after removing pregnancy

Outcomes	Medicaid vs. Uninsured (OR and 95% Confidence Interval)		
	Whites non-Hispanic	Black non-Hispanic	Hispanic
Hospitalization	**0.68 (0.60, 0.78)**	**0.85 (0.76, 0.95)**	**0.69 (0.62, 0.77)**
ICU	**1.35 (1.11, 1.63)**	**1.19 (1.01, 1.41)**	**1.20 (1.03, 1.41)**
COVID-19 Pneumonia	0.82 (0.67, 1.01)	0.87 (0.73, 1.05)	0.97 (0.80, 1.18)
Respiratory Failure	**0.82 (0.68, 0.99)**	0.92 (0.78, 1.09)	1.01 (0.86, 1.18)
Cardiac Failure	1.16 (0.87, 1.54)	**1.35 (1.05, 1.74)**	**1.51 (1.25, 1.82)**
Renal Failure	0.83 (0.43, 1.61)	**1.62 (1.03, 2.53)**	**1.69 (1.20, 2.18)**
30-day Non-COVID Readmission	**1.83 (1.25, 2.70)**	**2.51 (1.73, 3.62)**	**1.49 (1.02, 2.18)**
30-day COVID Readmission	**1.92 (1.31, 2.80)**	1.39 (0.97, 1.99)	**1.53 (1.04, 2.25)**

Policy Implications

* Lack of insurance in the largest Medicaid non-expansion State in the US has led to potentially avoidable COVID-19 hospitalizations with serious adverse outcomes
* Future Medicaid expansion in Texas could lead to increased health resource utilization among the currently uninsured to address co-morbidities contributing to poorer outcomes
* All uninsured groups -- Hispanics, non-Hispanic Whites, and non-Hispanic Blacks -- would benefit from Medicaid expansion in Texas

Overall population (Table 2A Summary):

- Black and Hispanic Medicaid recipients had higher risk of hospitalization compared to Black and Hispanic uninsured patients.
- Uninsured Hispanic were at higher risk for ICU compared to Hispanic Medicaid recipients.
- Uninsured patients were at higher risk for COVID-19 pneumonia and respiratory failure regardless of race/ethnicity
- Medicaid patients were at higher risk for 30-day readmission regardless of race/ethnicity and if COVID-19 related or not-related.

Among non-pregnant patients (Table 2B Summary) :

- The risk for hospitalization was higher among uninsured regardless of race/ethnicity
- The risk of ICU care was higher among Medicaid recipients regardless of race/ethnicity
- Cardiac and renal failure was higher risk in Black and Hispanic Medicaid recipients compared to uninsured
- 30-Day readmission was higher among Medicaid recipients regardless of race/ethnicity or COVID-19 related or not-related compared to uninsured patients .