

## Change to the List of Reportable Diseases, Emergency Illnesses and Health Conditions

Effective July 1, 2020, as part of the public health response to the COVID-19 pandemic, and pursuant to Section 19a-2a of the Connecticut General Statutes and Section 19a-36-A7 of the Regulations of Connecticut (CT) State Agencies, Deidre S. Gifford, MD, MPH, Acting Commissioner of the Connecticut Department of Public Health (DPH), amended the List of Reportable Diseases, Emergency Illnesses and Health Conditions by adding reporting of hospitalizations due to COVID-19.

Hospitalized patients who are found to have confirmatory laboratory evidence of SARS-CoV-2 (e.g., positive PCR test result), should be entered into the CT Electronic Diseases Surveillance System (CTEDSS) by Connecticut acute care hospital staff as soon as possible after identification. These include patients who had a confirmatory laboratory test within the 14 days before admission. This will allow rapid access to these case data by both DPH and the local health department where the patient resides.

As part of this addition, acute care hospitals are also directed to provide the DPH with remote access to the electronic medical records of patients who are hospitalized with COVID-19 with either confirmatory, presumptive or supportive laboratory evidence of COVID-19. This access is necessary for public health purposes and will allow timely access to information that will ensure appropriate tracking and classification of COVID-19 cases and use of these data for public health action.

DPH is working with partners on methods to facilitate complete case data reporting that decreases the burden on both hospitals and DPH staff.

### In this issue...

### Page No.

Change to the List of Reportable Diseases, Emergency Illnesses and Health Conditions

13

Race/ethnic Disparities in COVID-19 Hospitalizations Stronger Than Socioeconomic Ones During Stay Safe, Stay Home, New Haven and Middlesex Counties, March 1–May 8, 2020

13

## Race/ethnic Disparities in COVID-19 Hospitalizations Stronger Than Socioeconomic Ones During Stay Safe, Stay Home, New Haven and Middlesex Counties, March 1–May 8, 2020

There have been well publicized disparities among race and ethnic groups in detected rates of coronavirus disease 2019 (COVID-19) cases, hospitalizations, and deaths in many parts of the United States. However, few studies have examined the contribution of socioeconomic status (SES) to these disparities.

SES is not routinely collected as part of public health surveillance but use of census tract-level indicators has gained traction as one method of measuring SES by matching residential addresses of cases to census tracts. In Connecticut (CT), we have repeatedly found larger disparities in influenza-associated hospitalization by census tract-level poverty than by race/ethnicity and observed equally strong SES differences within race/ethnic groups, including in 2009 with pandemic H1N1 (1,2).

In March 2020, the CT Emerging Infections Program (EIP) began participating in [COVID-NET](#) active surveillance for residents of New Haven and Middlesex Counties who were hospitalized within 14 days of having a positive laboratory test for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Hospitalizations are an optimal infection outcome to monitor, because they are not as subject to testing availability bias as overall laboratory confirmed infections. The objectives of this analysis were to determine 1) the magnitude of

disparities in hospitalization rates among race and ethnic groups prior to initiation of [Reopen CT](#), 2) whether there was an association of incidence of hospitalizations with increasing census tract-level SES as measured by census tract level poverty (CTP) and crowding, and 3), the independent associations of race/ethnicity and SES on hospitalization rates. This analysis was limited to cases occurring in the community; persons residing in facilities such as nursing homes and correctional institutions at the time of the hospitalization were excluded.

During March 1–May 8, 2020, in the initial phase of the COVID-19 pandemic, the Yale office of the CT EIP geocoded residential addresses of laboratory confirmed SARS-CoV-2-associated hospitalizations for New Haven and Middlesex counties. Cases were categorized into age-groups, and relative rates were calculated using the 18-49 year age-group as the referent. Geocoded addresses were linked to census-tract measures of poverty and crowding, respectively defined as the percentage of households in a census tract living below the federal poverty level and percentage of households with at least one person per room as determined by the 2014-2018 American Community Survey 5-Year Estimates. Census tracts were categorized into 4 CTP and 4 crowding levels (Table 1). Because age was a very strong predictor of hospitalization rate and had potential for confounding the relationship between race/ethnicity and SES measures and incidence, age-adjusted rates for each race/ethnic group and for each CTP and crowding level were calculated. To determine whether there was a relationship between SES and hospitalization incidence independent of race/ethnicity, age-adjusted rates for each CTP and crowding level were calculated within each demographic group including those defined by race/ethnicity. Finally, to determine whether race/ethnicity were independent predictors of hospitalization, age-adjusted rates for non-Hispanic black, Hispanic, and non-Hispanic white groups were calculated within each CTP and crowding level. Rates for non-Hispanic blacks and Hispanics were compared to that of non-Hispanic whites within SES categories. Chi-square for trend and chi-square tests were used to determine statistical significance.

From March 1–May 8, a total of 2,173 residents of the two counties were hospitalized with laboratory-confirmed SARS-CoV-2 infection, of whom 1,511 (69.5%) were admitted from the community.

Increasing age was strongly associated with higher hospitalization rates in the community, with rates more than 6-fold higher in those aged older than 75 years compared to those aged 18–49 years (Table 1). Age-adjusted rates for non-Hispanic blacks and Hispanics were, respectively, 7.8 (range 6.90–8.90) and 6.2 (range 5.46–7.04) times higher than for non-Hispanic whites. There were associations of increasing incidence with increasing CTP and crowding; the relative rates of the high poverty and high crowding groups, compared to the very low, were 4.7 (range 3.76–5.08) and 3.4 (range 2.90–3.86), respectively (Table 1).

There were strong and statistically significant age-group specific trends of increasing incidence with increasing poverty for all age groups, and with increasing crowding for those aged <85 years. The magnitude of associations in the high versus very low CTP groups ranged from a relative rate of 2.3 in those aged  $\geq 85$  years to 6.1 in the 50–64 year age group. Relative rates for high versus very low crowding ranged from 2.5 in the 75–84 year age group to 6.2 in those aged <18 years (data not shown). Trends of SES measures within race/ethnic groups were less consistent and lower in magnitude (Figure 1). Age-adjusted relative rates for high versus very low CTP were 1.4 for non-Hispanic blacks and 2.2 for non-Hispanic whites; for high versus very low crowding, relative rates were 1.4 for non-Hispanic blacks and 2.0 for Hispanics.

Age-adjusted relative rates comparing minority groups to non-Hispanic whites within each category of CTP and crowding were consistently high. For non-Hispanic blacks, relative rates for both measures, except for the high CTP and crowding groups, were  $>7.0$ . For Hispanics, they ranged from 4.2 in the high CTP group to 7.4 in the medium level crowding group (Figure 2).

### Reported by

*J. Hadler, MD, MPH, A. Edmundson, MPH, C Luc, MPH, K Yousey-Hindes, MPH, CPH, Connecticut Emerging Infections Program at the Yale School of Public Health.*

### Editorial Note

This analysis covers hospitalizations during the period defined by the series of executive orders restricting or canceling gatherings, businesses and schools beginning March 12 and culminating in the Stay Safe, Stay Home order on March 20 (3), which was still in effect on May 8. The main findings were that higher hospitalization incidence was associated with increasing age, increasing CTP and crowding, and non-Hispanic black and Hispanic race/ethnicity.

The finding that non-Hispanic black race and Hispanic ethnicity were more strongly and independently associated with higher incidence than were the two SES measures used was not, however, anticipated. Previous analyses of influenza hospitalization data in the same catchment area (1,2) found that increasing CTP and crowding were more strongly associated with higher influenza hospitalization incidence than race/ethnicity, and to a large extent explained differences in incidence by race/ethnicity. We hypothesize that transmission dynamics during this first wave of SARS-CoV-2 infection were greatly affected by the stay at home orders and may account for the findings. Unlike with seasonal and low-virulence pandemic influenza (e.g., (H1N1)pdm09 virus) when most work, school and social activities continue without change and provide more equal opportunity for most in the population to be exposed, only a small segment of the population, “essential workers,” who had to work outside the home, and by extension their family contacts, had multiple opportunities for exposure, often without personal protective equipment (PPE). That the relative rates for non-Hispanic black and Hispanic groups were equally high in all age and SES groups is consistent with the hypothesis that no one living in a dwelling or who is part of a continuing social network has been free from potential SARS-CoV-2 exposure if one person in it has outside contact. The magnitude of the relative rates by race/ethnicity is extraordinary and speaks to both the exceptional risks that “essential” workers undertook during this time, and that this risk was born especially by the non-Hispanic black and Hispanic communities.

It is likely that the epidemiology of SARS-CoV-2 will shift as society reopens and a wider range of people return to work, school and social life outside the home and risk exposure, often electively.

Continued analyses are needed to determine shifting risks. However, should a severe second wave of infections occur and necessitate a return toward a more Stay Home, Stay Safe policy, it will be critical to recognize where the ongoing, involuntary risk will lie and prepare for it with adequate PPE, instruction in its use, household preparation, testing and social support to deal with the risk. If and when a vaccine is developed, the clinics that serve these workers and their families, especially but not limited to those in poorer and more crowded neighborhoods, should be high priority to receive vaccine and should have plans to vaccinate those at highest risk. An essential and complementary step is for these clinics to be of high priority and have plans to administer influenza vaccine.

### Key Messages for Providers and Businesses

- Recognize that in a second wave, essential workers and their families, who are disproportionately non-Hispanic black and Hispanic, are at exceptional risk of involuntary exposure to SARS-CoV-2. They and their families should have ready access to adequate PPE and instruction on its use for work and in the home and to testing and social support.
- Clinics that serve minority populations, especially in poor neighborhoods, should have plans to actively offer influenza vaccine to their population and develop specific plans for SARS-CoV-2 vaccination of essential workers and their families as an initial priority group.

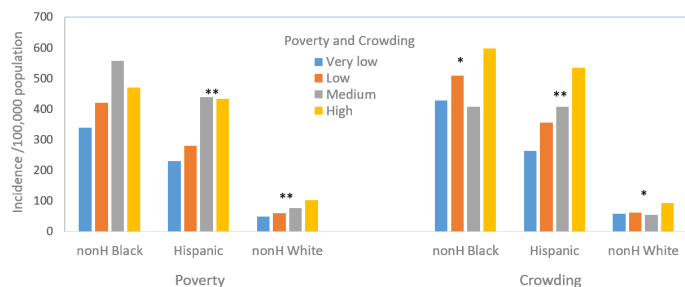
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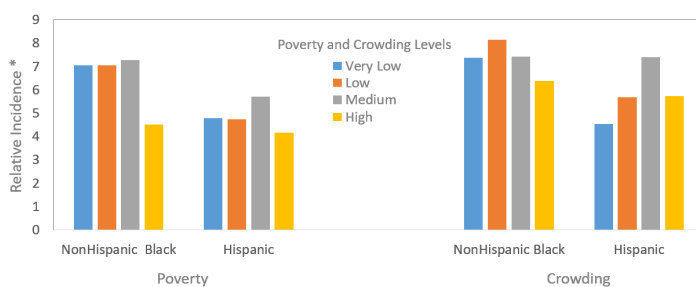
**Table 1 – Demographics, age-adjusted incidence rate, and relative rates of hospitalized COVID-19 patients from the community during Stay at Home, March 1–May 8, 2020**

Demographic factor	Number	Percentage	Age-adjusted Rate/ 100,000 population	aRR	95% CI
<b>All Cases</b>	1,511	-	129.3	-	-
<b>Age</b>					
<18	10	0.7	4.4	0.06	0.03-0.10
18-49	344	22.8	77.9	ref	-
50-64	439	29.1	209.9	2.69	2.34-3.10
65-74	339	22.4	457.3	5.87	5.05-6.82
75-84	243	16.1	493.5	6.33	5.37-7.46
85+	136	9.0	518.6	6.65	5.46-8.11
<b>Sex</b>					
Female	714	47.3	111.9	ref	-
Male	797	52.7	150.8	1.35	1.21-1.50
<b>Race/ethnicity</b>					
Hispanic	316	20.9	375.9	6.20	5.46-7.04
Non-H Black	437	28.9	475.5	7.83	6.90-8.90
Non-H White	605	40.0	60.6	ref	-
Non-H Asian	25	1.7	118.0	1.98	1.44-2.73
other/unk	128	8.5	-	-	-
<b>Poverty</b>					
Very low (<5%)	297	19.7	65.7	ref	-
Low (5-<10%)	332	22.0	95.7	1.45	1.22-1.73
Medium (10-<20%)	377	25.0	181.3	2.76	2.34-3.25
High (≥20%)	505	33.4	287.3	4.67	3.76-5.08
<b>Crowding</b>					
Very low (<0.9%)	569	37.7	91.6	ref	-
Low (0.9-<2.5%)	387	25.6	123.1	1.34	1.17-1.55
Medium (2.5-<5%)	273	18.1	178.6	1.95	1.68-2.27
High (≥5%)	282	18.7	306.4	3.35	2.90-3.86

**Figure 1. Age-adjusted incidence of SARS-CoV-2 associated hospitalizations by race/ethnicity groups, census tract level poverty, and crowding groups.**



**Figure 2. Relative age-adjusted incidence comparing minority groups to non-Hispanic whites in each category of CTP and of crowding.**



Abbreviations:  
 nonH Black = non-Hispanic black  
 nonH White = non-Hispanic white  
 Legend:  
 census tract poverty and crowding levels are defined in Table 1.  
 \*\* Chi-square test for trend p<0.001  
 \* Chi-square test for trend p<0.05 but >0.01

All are significant at the p<0.001 level.  
 Legend  
 Census tract poverty and crowding levels are defined in Table 1.

Deidre S. Gifford, MD, MPH Acting Commissioner of Public Health  Matthew L. Cartter, MD, MPH State Epidemiologist  Lynn Sosa, MD Deputy State Epidemiologist	<b>Telecommunications Relay Service 7-1-1</b> Epidemiology and Emerging Infections 860-509-7995 Healthcare Associated Infections 860-509-7995 HIV & Viral Hepatitis 860-509-7900 Immunizations 860-509-7929 Sexually Transmitted Diseases (STD) 860-509-7920 Tuberculosis Control 860-509-7722	<b>Connecticut Epidemiologist</b>  Editor: Matthew L. Cartter, MD, MPH Assistant Editor: Jocelyn Mullins, DVM, MPH, PhD  Assistant Editor & Producer: Starr-Hope Ertel
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