

Disparities in COVID-19 by Race-ethnicity and SES: Epidemiologic Findings

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CSTE Health Disparities subcommittee

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What to expect: lessons from influenza hospitalization surveillance

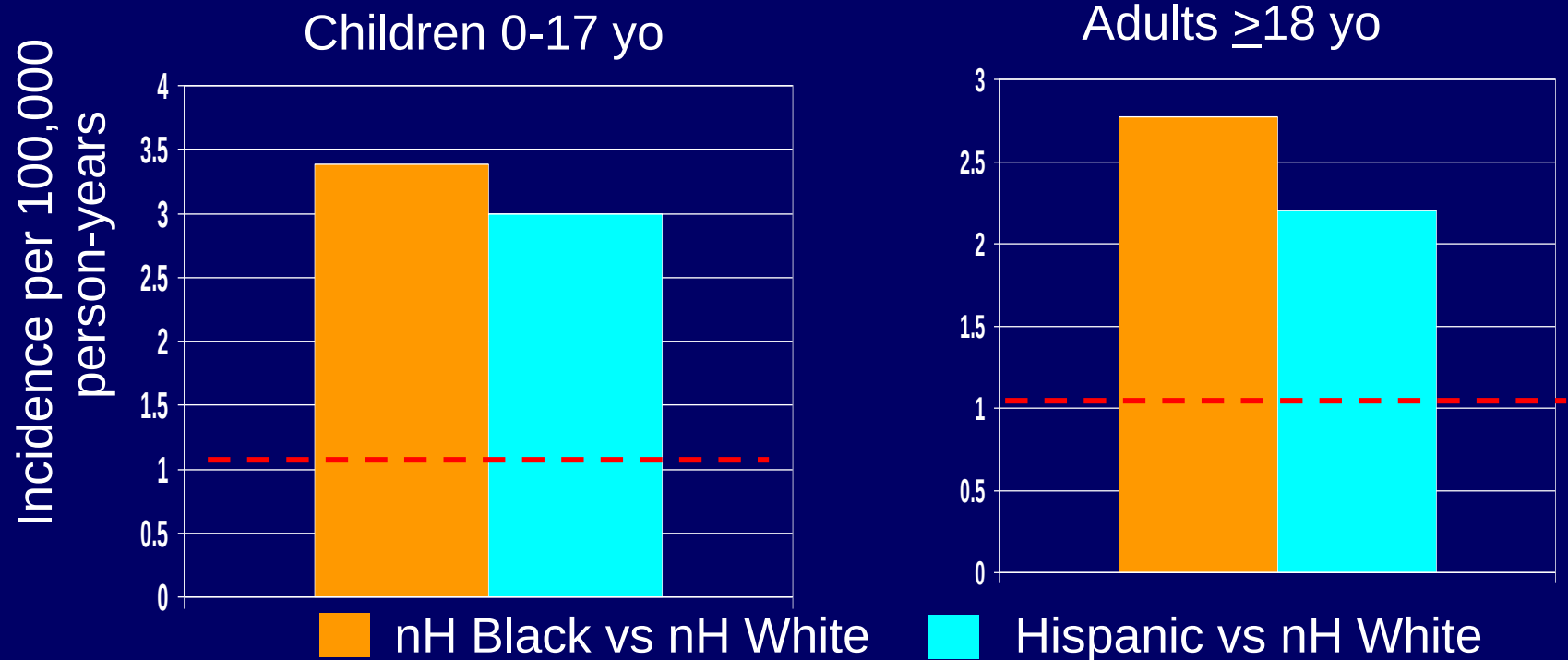
Similarities between SARS-CoV-2 and influenza

- Mode of transmission – potential for rapid spread
- Sizable percentage with mild to no symptoms – difficult to measure all incident cases
- Monitoring of severe disease (hospitalization; deaths) gives potentially comparable picture of the tip of the iceberg

Differences

- SARS CoV-2 – no previous immunity from vaccination or disease
- Potential to measure the full iceberg of SARS-CoV-2 infection

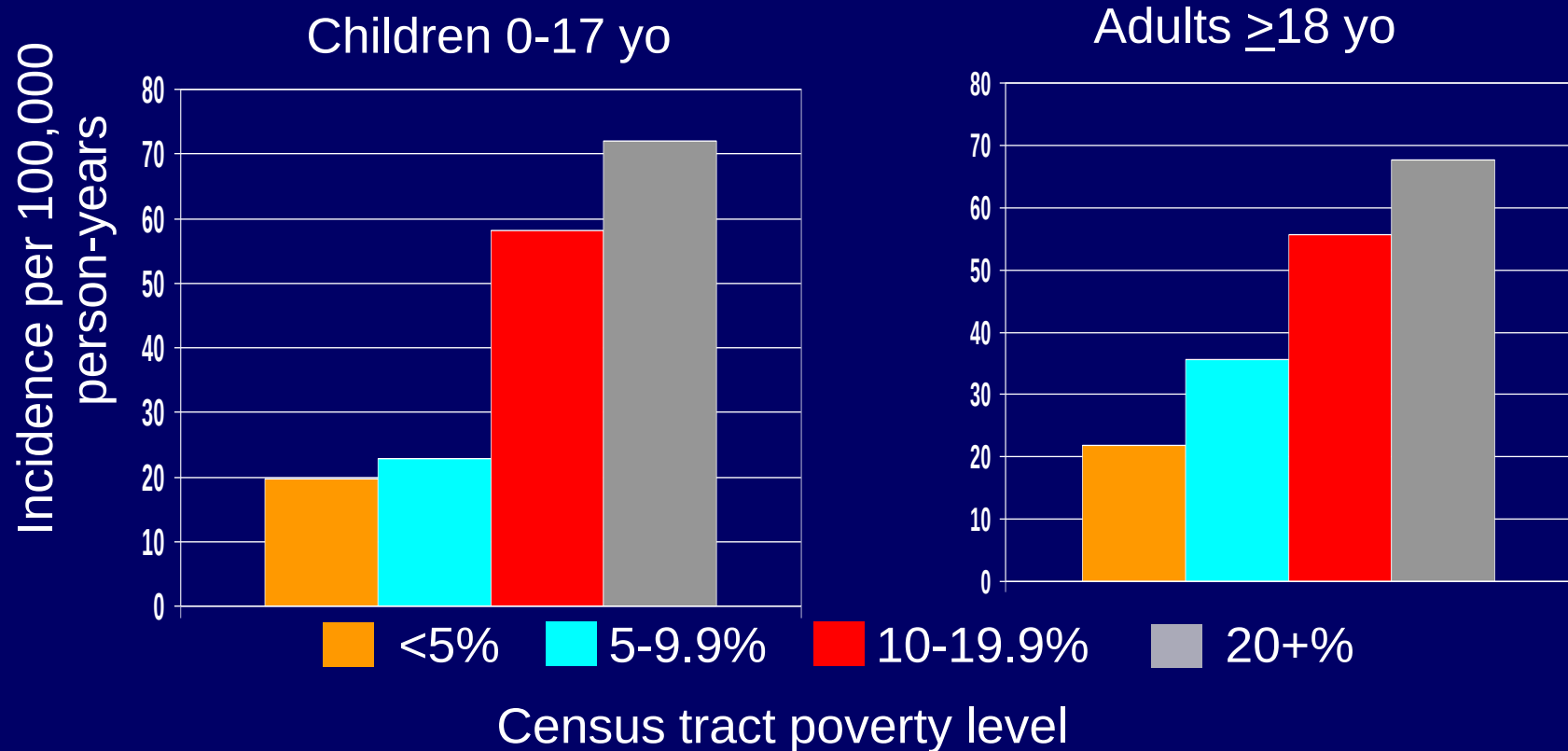
Relative risk of influenza-associated hospitalizations by race/ethnicity, Children 2003-10, Adults 2007-11, NH County, Connecticut



AJPH 2011;101:1785;

IORV 2014;8:274-81

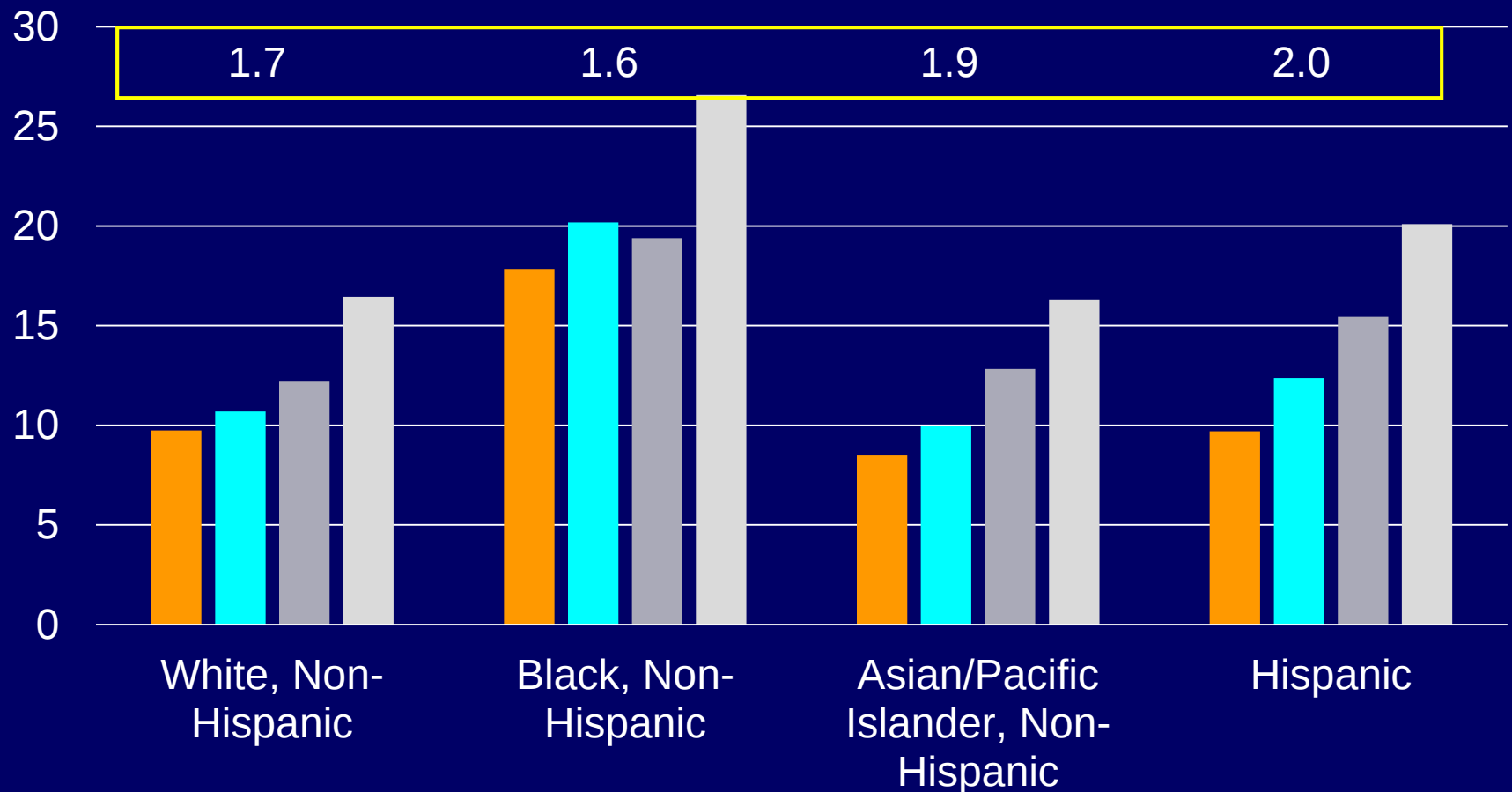
Incidence of influenza-associated hospitalizations by census tract poverty level, Children 2003-10, Adults 2007-11, NH County, Connecticut



AJPH 2011;101:1785;

IORV 2014;8:274-81

Age-Adjusted Incidence and IRR of Influenza Hospitalization within Race/Ethnic Groups by Census Tract Poverty, FluSurvNET 2010-12

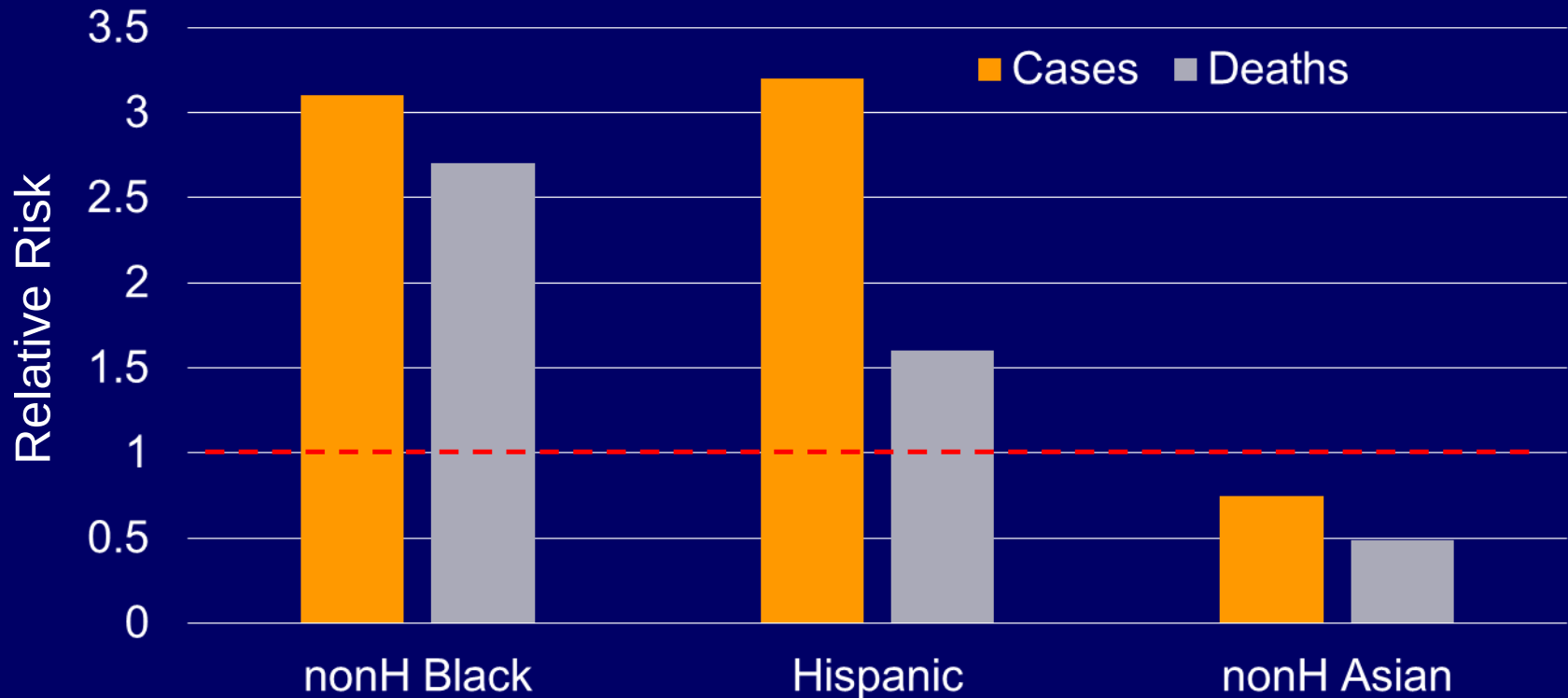


Possible explanations for flu disparities

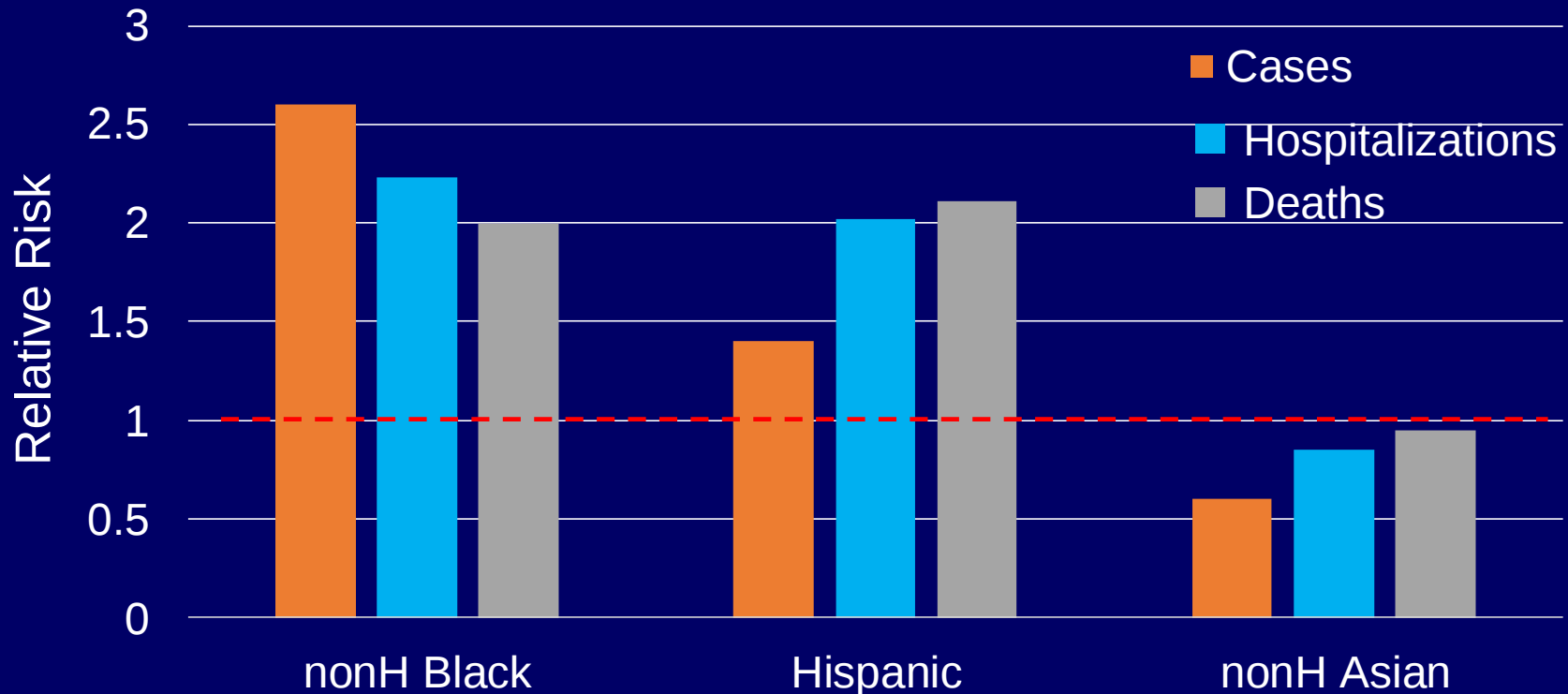
1. Higher infection rates due in part to household crowding and perhaps more susceptible children.
2. Higher percentage of infections → hospitalization due to less routine healthcare access resulting in:
 - Lower vaccination rates
 - Higher percentage with underlying conditions and/or poorly controlled underlying conditions (e.g., diabetes, asthma)

Therefore, predict that SARS CoV-2 will disproportionately affect poor, minorities

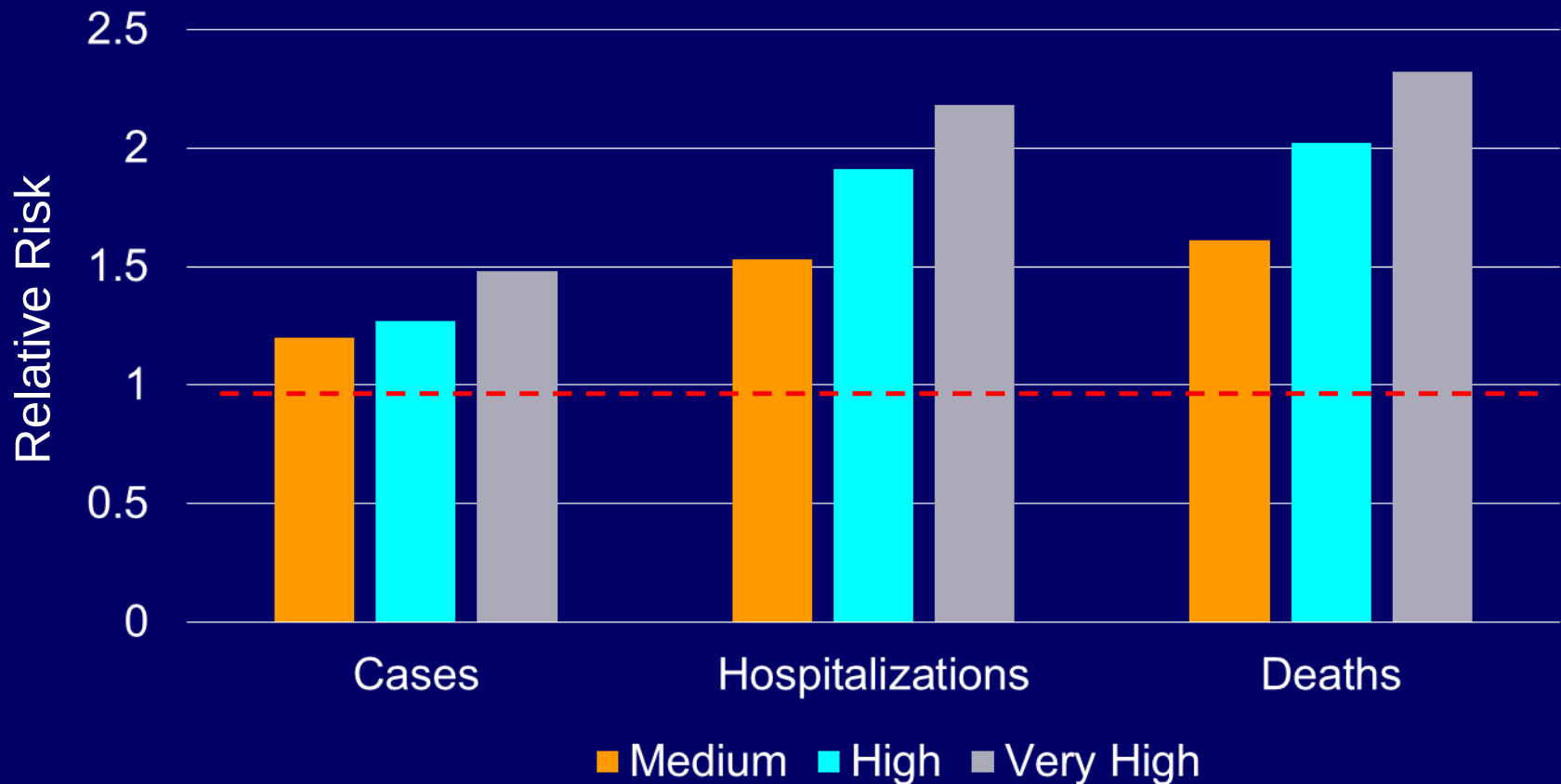
Age-adjusted RR vs non-H whites of cases and deaths, COVID-19 by race/ethnicity, CT 5/25/20



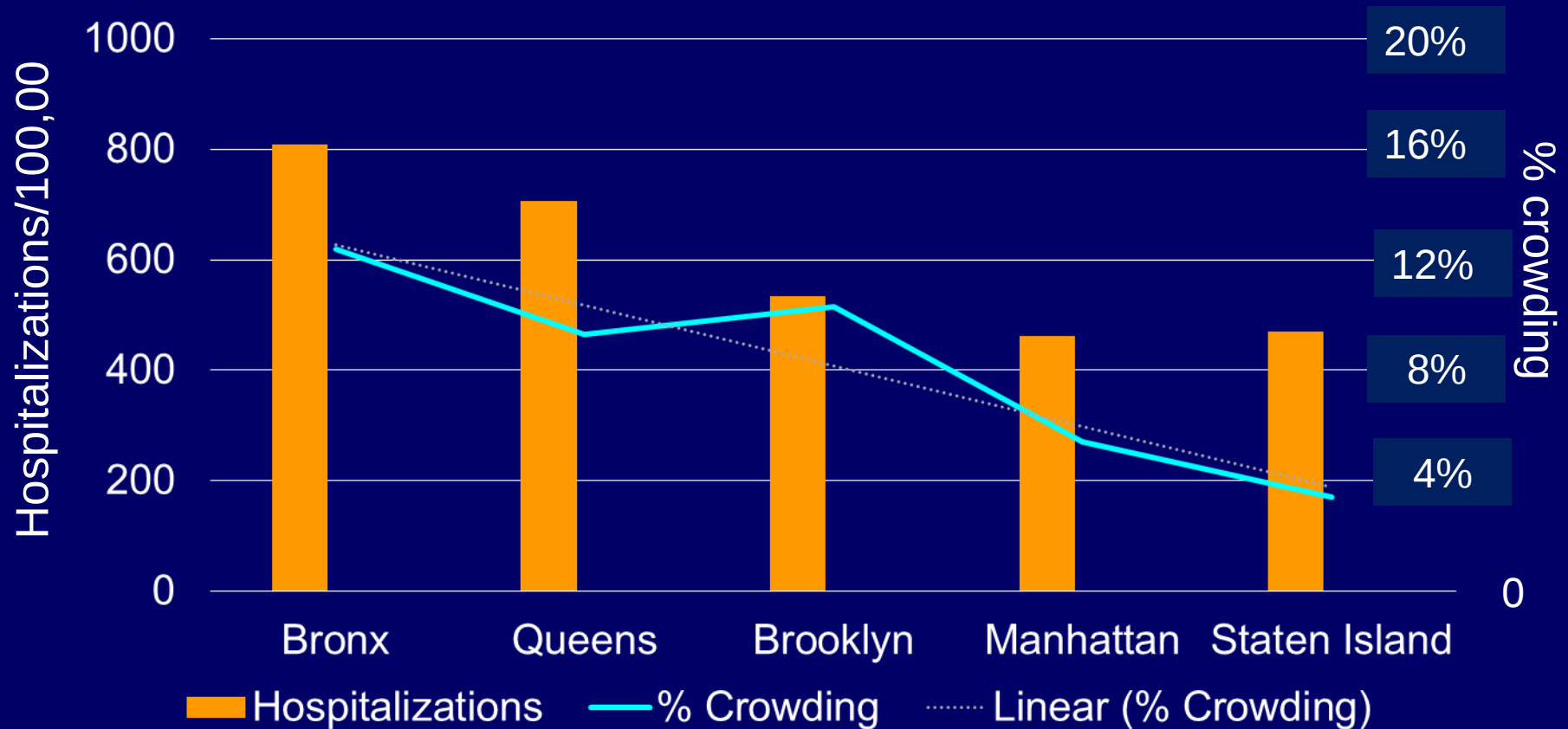
Age-adjusted RR vs non-H whites of cases, hospitalizations and deaths, COVID-19 by race/ethnicity, NYC 5/25/20



Age-adjusted RR vs low poverty ZIP codes: cases, hospitalizations and deaths, COVID-19, NYC 5/25/20



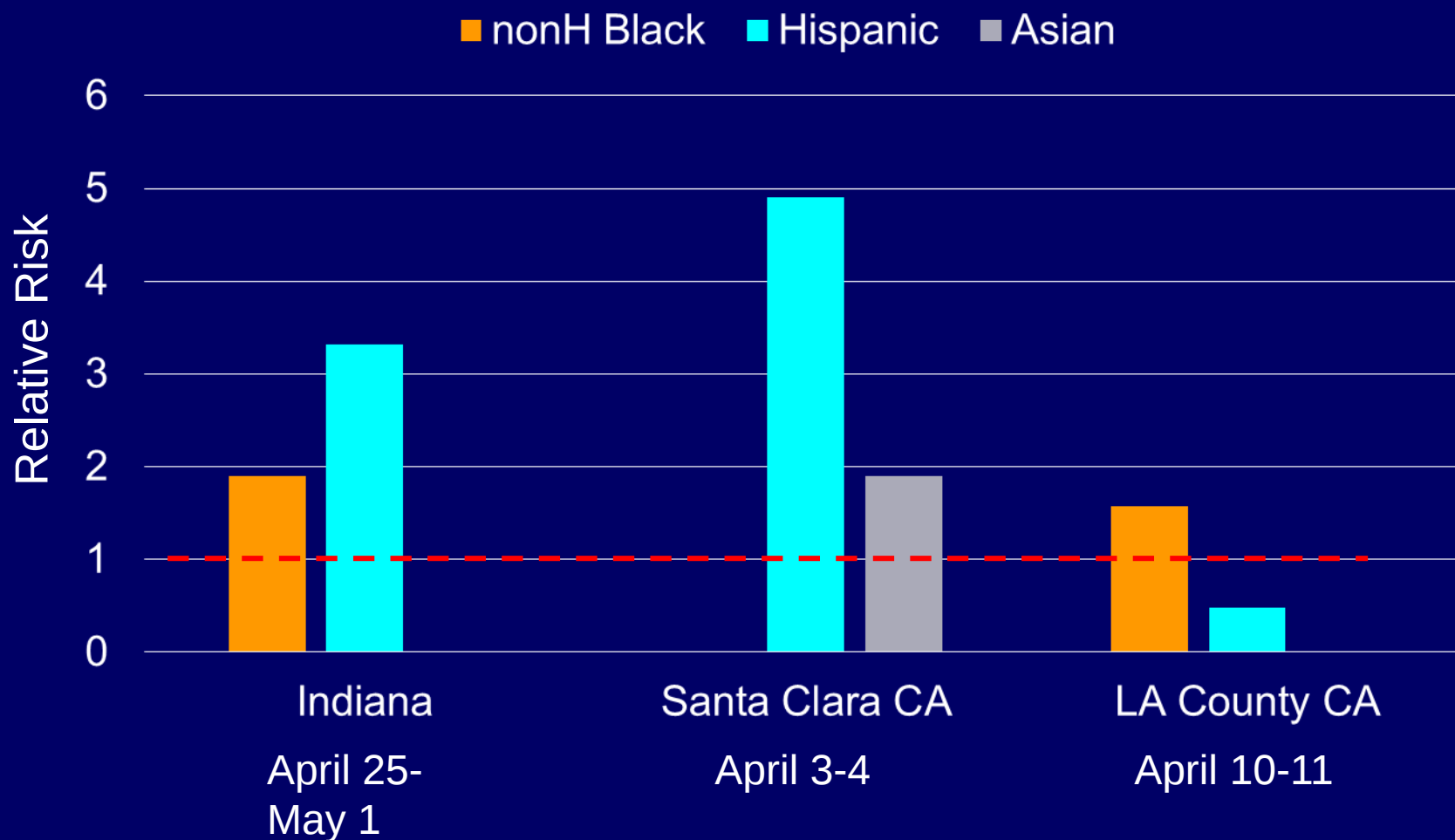
COVID-19 hospitalization rate vs % crowding, NYC boroughs, 5/25/20



Possible explanations for COVID disparities

1. Higher infection rates due in part to household crowding and possibly higher risk of introduction (e.g., more essential workers at risk).
2. Higher percentage of infections → hospitalization due to less routine healthcare access resulting in:
 - Higher percentage with underlying conditions and/or poorly controlled underlying conditions (e.g., diabetes, asthma)
3. Higher percentage dying because of 1 and 2 – possibly discrimination in inpatient care

Seroprevalence: crude RR of infection vs nonH White by Race/ethnicity



Risk Factors for Hospitalization among those infected

Unknown – not enough seroprevalence data to estimate hospitalization rates

Risk Factors for Death among those hospitalized, COVID-NET

Preliminary multivariable analysis as of early May

Significant:

- Older age
- Underlying conditions

Not significant:

- race/ethnic group

Discussion

1. Any other COVID-related data to share?
2. What other studies/data/data analyses are needed to determine what else may underlie the currently recognized disparities or identify additional disparities?
3. What data should be monitored to see if disparities are decreasing?