

Figure S1. Calculation of $f_{deathdet}$ from Illinois COVID-19-attributed deaths and excess select cause deaths.

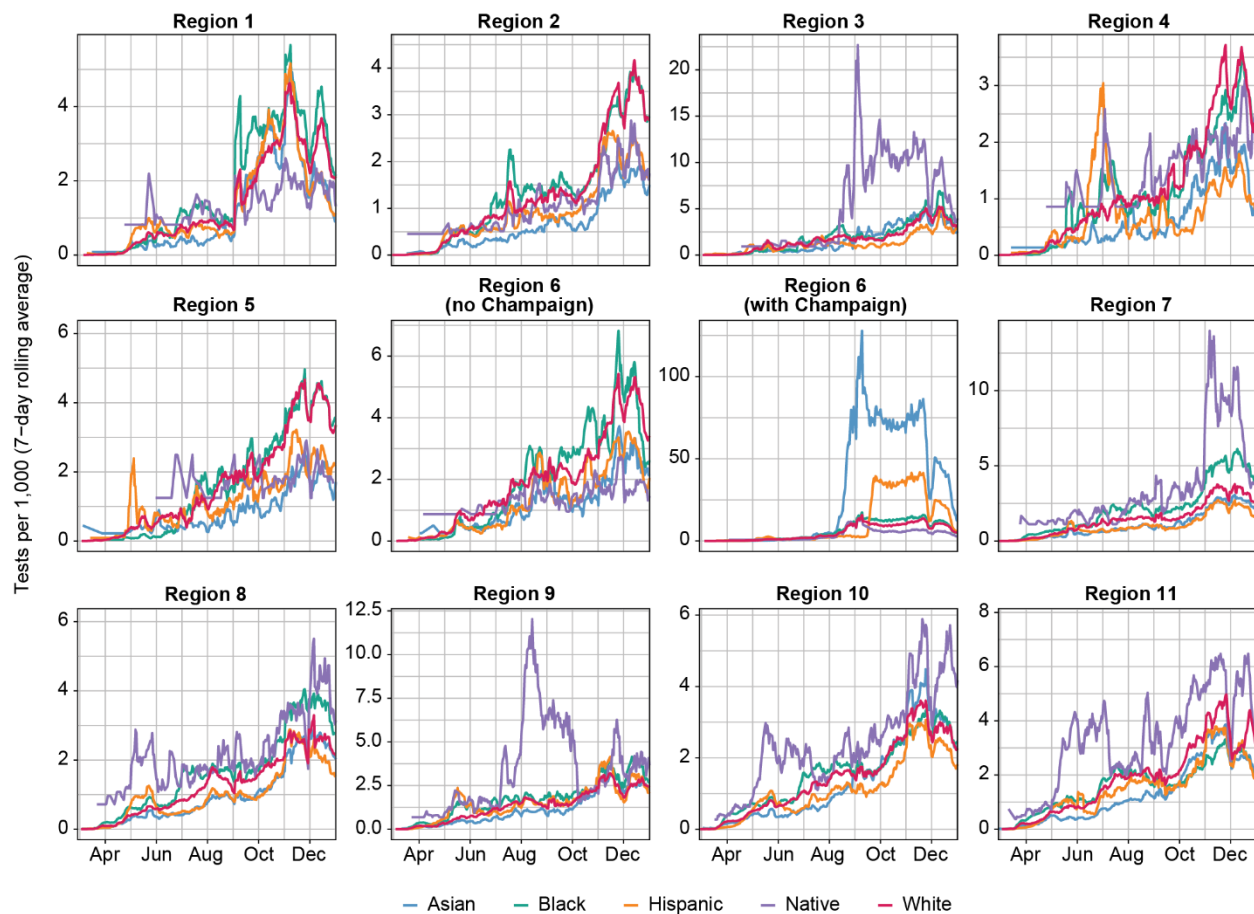


Figure S2. Testing rate per capita by race/ethnicity and COVID-19 Region. Population denominators were drawn from ACS 2018. “Native” included both “American Indian or Alaskan Native” and “Native Hawaiian or Other Pacific Islander”. Asian and Native groups were excluded from Figures 6 and 8 due to small population denominators after stratifying by age. The small denominators are reflected in the large fluctuations in the Native timeseries in this figure.

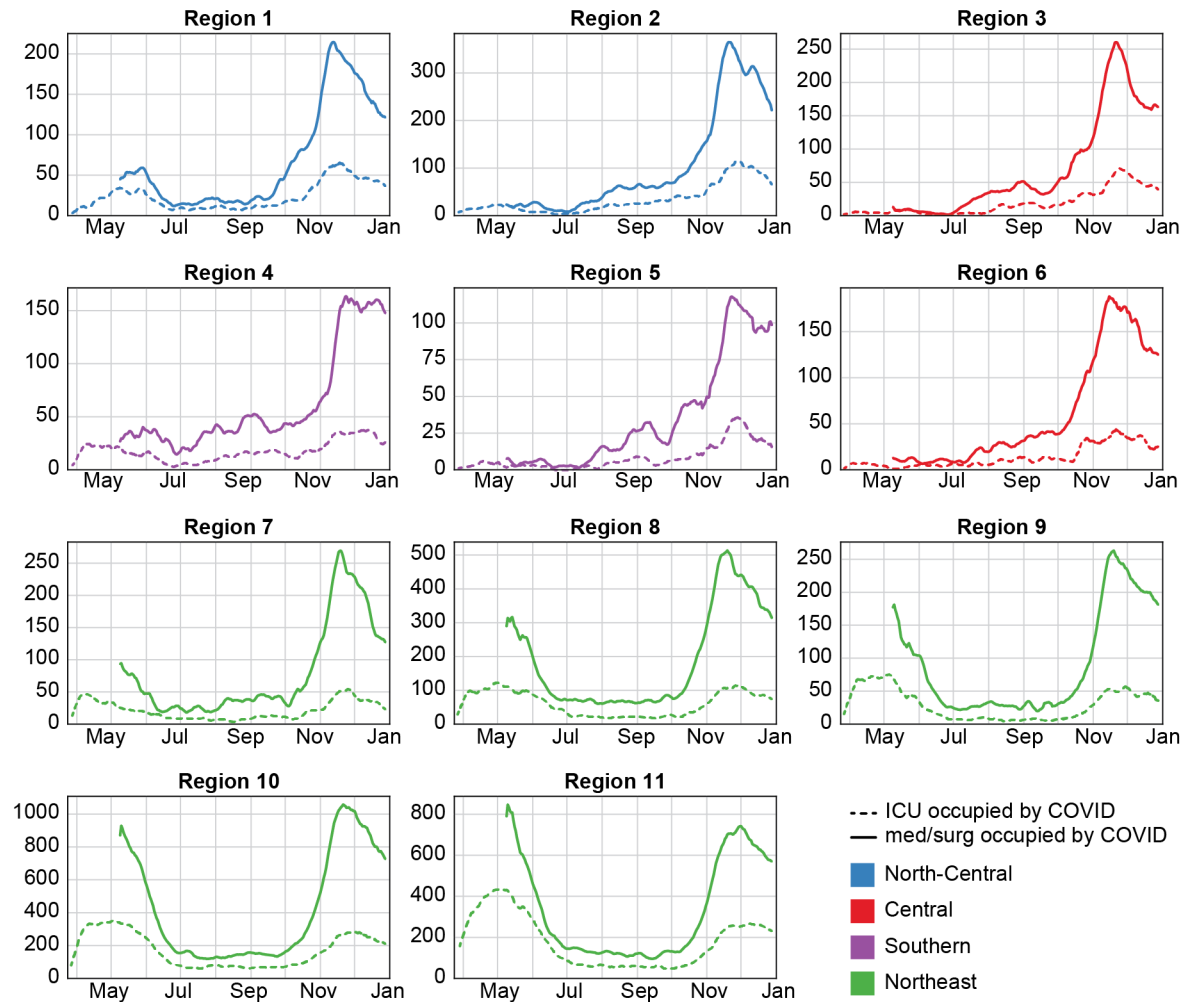
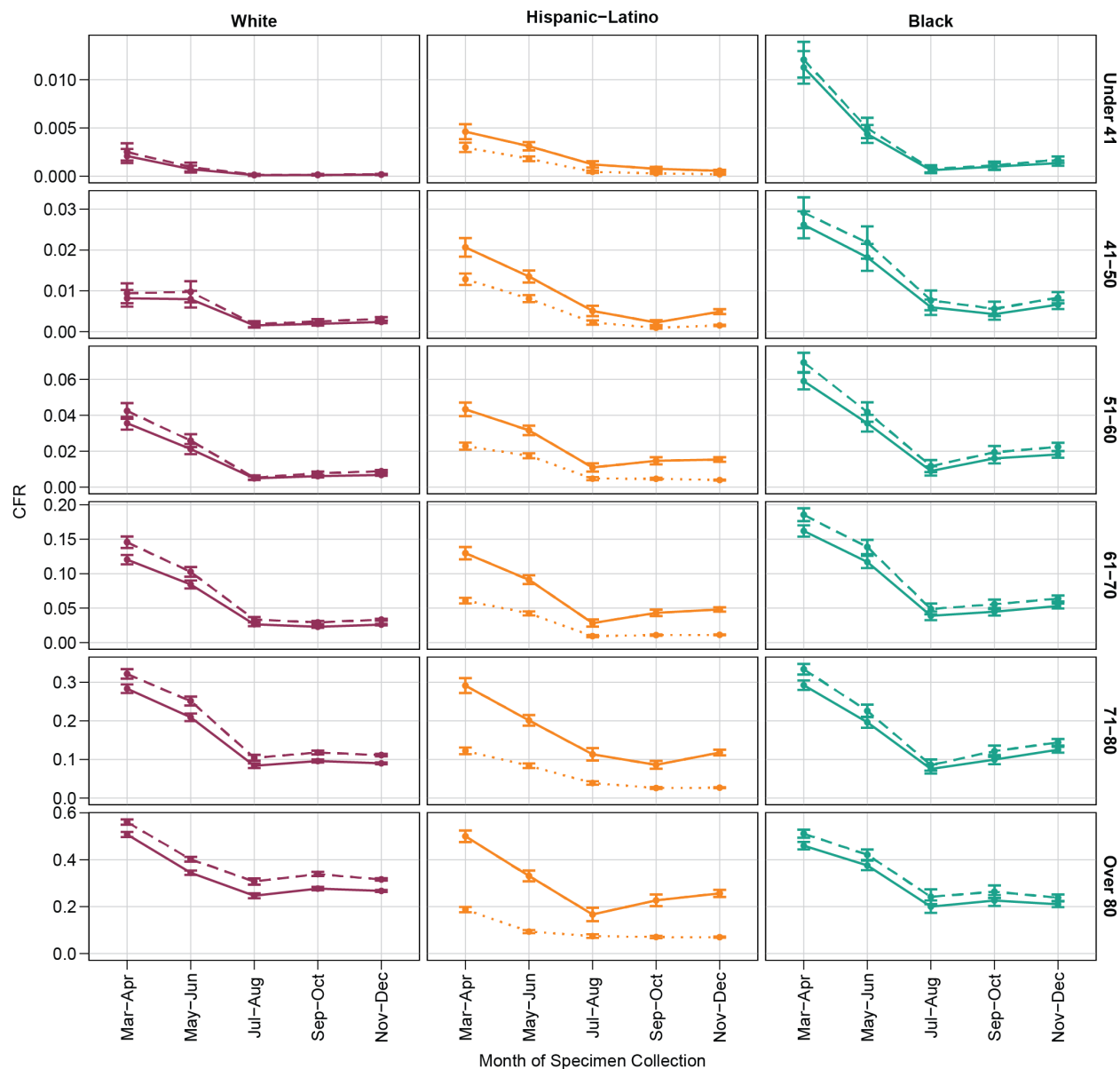


Figure S3. Daily COVID-19 hospital census by COVID-19 Region (subplots) and super-region (colors) in 2020. Lines show 7-day rolling averages. Data for med/surg occupancy are not available prior to May 2020. Med/surg census covers all admitted patients who are not in the intensive care unit (ICU).



— Unknown Ethnicity: Assign to whichever race is listed (assume non-Hispanic), same as Fig 8
 - - - Unknown Ethnicity: Assign to "Unknown" race
 Note: For Hispanic-Latino, this gives same results as Fig 8
 Unknown Ethnicity: Assign "Hispanic-Latino"
 Note: For Black/White, this gives same results as Fig 8

Figure S4. Sensitivity of CFR to case race/ethnicity assignment. Alternate scenarios were run in which cases with “unknown” ethnicity were: 1) Assumed to be non-Hispanic and assigned to the recorded racial group (solid line, and identical to Figure 8), 2) Assigned to the “unknown” racial group (dashed line), or 3) Assumed to be Hispanic (dotted line). For Hispanic-Latino, scenarios #1 and #2 are identical. For Black and White, scenarios #2 and #3 are identical. Assumption of non-Hispanic ethnicity slightly, but significantly, decreases CFR for older non-Hispanic White and Black populations.

Table S1. Total hospital beds by COVID-19 Region. Bed availability data from September 1, 2020 via IDPH website. Beds available for COVID refers to number of beds not occupied by non-COVID patients.

COVID-19 Region	population	Med/Surg total beds	ICU total beds	Med/Surg beds available for COVID	ICU beds available for COVID	Med/Surg beds available for COVID per 10,000	ICU beds available for COVID per 10,000
1	660965	939	229	428	124	6.48	1.88
2	1243906	1876	323	870	156	6.99	1.25
3	556776	1141	150	475	73	8.53	1.31
4	656946	862	130	343	86	5.22	1.31
5	403659	668	99	370	65	9.17	1.61
6	739098	1087	178	461	112	6.24	1.52
7	800605	820	174	320	63	4.00	0.79
8	1455324	1906	431	761	222	5.23	1.53
9	1004309	1117	254	513	140	5.11	1.39
10	2693959	3680	772	1237	354	4.59	1.31
11	2456274	4475	1066	1526	516	6.21	2.10