

Tracking COVID-19 Cases, Hospitalizations, and Deaths in U.S Nursing Homes Throughout the Pandemic

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BACKGROUND

As of March 2021, over 128,000 nursing home (NH) residents have died due to COVID-19 complications, accounting for one-third of all U.S. COVID-19 deaths. During the early phases of the pandemic, studies highlighted factors which heightened residents' risk—facility size and profit status, CMS Five-Star quality rating, race, and high Medicaid share. Despite improved nationwide caution and understanding of COVID-19 such as social distancing, between October-December 2020 nursing home cases, hospitalizations, and deaths peaked to highest levels since the pandemic's advent. Research has yet to investigate COVID-19 patterns in nursing homes across the U.S. throughout the pandemic.

OBJECTIVES

- Quantify COVID-19 cases, hospital admissions, and deaths in U.S. nursing homes over September 28- December 27th, 2020
- Calculate COVID-19 case rates in U.S. nursing homes from May 25th- December 27th, 2020
- Examine trends of total COVID-19 cases, hospital admissions, and deaths

METHODS

In this cross-sectional study, we utilized the CMS Nursing Home COVID-19 Public File. As of May 25, 2020, CMS required nursing homes to report COVID-19 cases, hospitalizations, and deaths. Case rate was calculated as summed confirmed COVID-19 cases for each individual week and divided by total facility occupied beds at the state level. Means and standard deviations were calculated for COVID-19 admissions and deaths along with occupancy rates during the second surge of the pandemic, September 28th – December 27th 2020.

RESULTS

Figure 1: Nursing Home Confirmed Case Rate, per 10,000 Occupied Beds

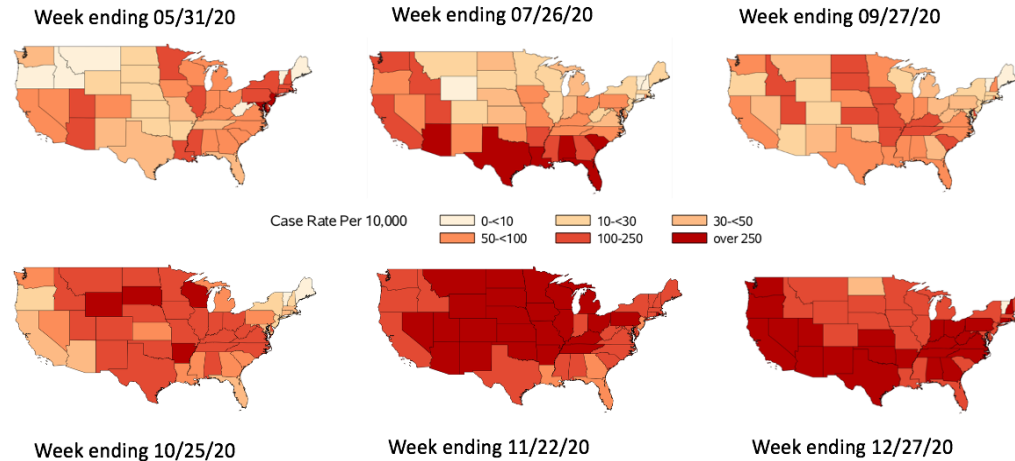
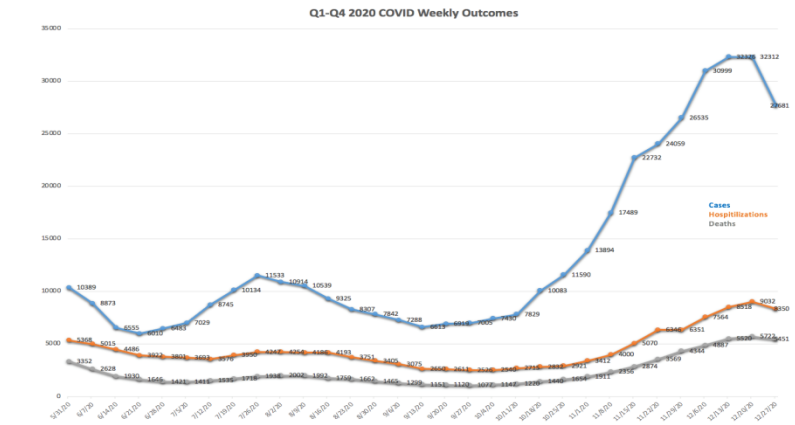


Table 2: Nursing Home Cases, Admissions, and Occupancy Rates during the Second Surge (October 4th- December 27th, 2020)

| Mean (Standard Deviation) | All NHS (n=13,156) | NHs with COVID-19 Cases (n=10,592) | NHs without COVID-19 Cases (n=2,564) |
|---|--------------------|------------------------------------|--------------------------------------|
| Average COVID-19 admissions per NH | 4.5 (13.4) | 5.1 (13.5) | 2.2 (12.8) |
| Average COVID-19 deaths per NH | 3.0 (5.5) | 3.67 (5.86) | 0.25 (1.89) |
| Occupancy Rate (occupied beds/total beds) | 0.72 (0.18) | 0.73 (0.17) | 0.69 (0.19) |

Figure 3: Trends of COVID-19 Cases, Hospitalizations, and Deaths Over Time



DISCUSSION

- Figure 1: As of May 31st, case rates remained higher on the coasts of the U.S. From October through the end of November, case rate severity in nursing homes shifted toward the middle of the country.
- Table 2: Four out of five (10,592) nursing homes had at least one COVID-19 case during the second surge of 2020, October to December. On average, facilities with a COVID-19 case had higher hospital admissions (5.1) and deaths (3.67) compared to facilities without infections.
- Figure 3: Nursing home COVID-19 cases, admissions, and deaths began to rise in October 2020, and peaked December 20th, 2020 (Cases=32,312 and Deaths=5,722), nearly triple the prior weekly case and death highs of 11,533 and 2,002, respectively.

SUMMARY

Through 2020, nursing homes continued to face challenges protecting their residents from COVID-19-related infection, morbidity, and mortality.

REFERENCES

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