

Supplemental Online Content

Ankuda CK, Leff B, Ritchie CS, Siu AL, Ornstein KA. Association of the COVID-19 pandemic with the prevalence of homebound older adults in the United States, 2011-2020. *JAMA Intern Med*. Published online August 23, 2021. doi:10.1001/jamainternmed.2021.4456

eAppendix. Further Details on Methods

This supplemental material has been provided by the authors to give readers additional information about their work.

eAppendix. Further Details on Methods

The National Health and Aging Trends Study (NHATS) is an annual cohort study of older adults age 65 years of age and older. NHATS provides data elements to capture the survey design and weighting that may be used to estimate nationally-representative proportions and population estimates. This NHATS data is the beta release, or first release to include the 2020 survey data. While this allows for earliest access to data on time-sensitive impacts of the COVID-19 pandemic, it is possible that some estimates and survey weights will be revised in the final version.

Trends in numbers of homebound by year:

Individuals are observed multiple times on the annual survey (in our cohort, 10,785 individuals had a total of 49,267, or each individual was observed an average of 4.6 times). In order to make population assumptions about trends by year, we first limited the sample to those age 70 and older. This is necessary as the sample included older adults age 65 and older in 2010, but was not refreshed until 2015. Therefore, those surveyed in 2016 were 66 and older, those surveyed in 2017 were 67 and older, etc. Given these trends over time include multiple observations of an individual over multiple annual surveys, we needed to account for this clustering of observations at the person level. We therefore specified the Stata survey command to adjust for clustering at the level of the individual as well as the survey design strata and weights. Using these survey commands, we then used the **count** command to assess year-specific population estimates. These estimates are representative of the homebound population ages 70+, in the community, from 2011-2020.

Characteristics of the 2020 homebound population:

For this portion of the study, we focused only on survey responses from 2020. Therefore, there were not multiple observations per respondent. As above, for consistency we limited the cohort to ages 70 and older. We did not account for clustering at the level of the individual and instead used traditional survey commands in Stata, which include accounting for the NHATS design and weights as above: clustering of observations around the primary sampling unit drawn from strata of the population, individual weights that account for oversampling and differential non-response in order to make the estimates nationally representative.

For full details of the NHATS survey and weighting approach applied, see:

https://nhats.org/sites/default/files/2021-01/Accounting_for_the_NHATS_NSOC_Design_in_Analyses_FAQ_0_2.pdf