

# Paid care among older adults with long-term care needs declined in the first year of COVID-19 while families stepped in

Yulya Truskinovsky<sup>1,\*</sup>  and Emily E. Wiemers<sup>2</sup> 

<sup>1</sup>Department of Economics, Wayne State University, Detroit, MI 48202, United States

<sup>2</sup>Department of Public Administration and International Affairs, Syracuse University, Syracuse, NY, 13244, United States

\*Corresponding author: Department of Economics, Wayne State University, 2137 Faculty Administration Building, 656 W Kirby St, Detroit, MI 48202, United States.  
Email: [yulya.truskinovsky@wayne.edu](mailto:yulya.truskinovsky@wayne.edu)

## Abstract

Separate strands of research have documented impacts of the COVID-19 pandemic in nursing homes and among paid and family caregivers, yet there is little evidence connecting changes in the residential decisions of older adults with the provision of paid and family care, limiting our ability to identify potential substitutions and gaps in care. Using the 2020 wave of the Health and Retirement Study linked to county-level COVID-19 mortality rates, we found that, among older adults with long-term care needs, higher county-level mortality rates were associated with a decline in nursing home residence and an increase in co-residence with adult children. These changes were coupled with a decline in the likelihood of receiving paid care and in the number of paid caregivers and an increase in the hours of unpaid care received. This analysis documents a reduction in nursing home residence and paid care during the first year of the pandemic and shows that families filled some of the resulting care gaps. Policymaking around long-term care should consider whether declines in the use of paid care are permanent and how they will affect the health of older Americans and their caregivers over the next decade.

**Key words:** COVID-19; long-term care; nursing homes; family caregiving.

## Introduction

The health and economic effects of the COVID-19 pandemic placed pressure on every part of an already fragile landscape of long-term care (LTC). Infection and mortality risks associated with congregate living settings were high in the initial phase of the pandemic, and more than 40% of all early COVID-19-related deaths occurred in nursing homes.<sup>1–3</sup> The long-term trend of decreasing occupancy rates in nursing homes accelerated in 2020, while challenges in recruiting and retaining direct-care workers were heightened.<sup>4,5</sup> Employment of home health care workers remained below pre-pandemic levels through the summer of 2021.<sup>6</sup> Family caregiving arrangements were also destabilized, with one-third of family caregivers reporting an increase in care hours but over 10% reporting a decrease.<sup>7,8</sup> These changes suggest that the COVID-19 pandemic disrupted the way that Americans with self-care needs received LTC in 2020.

Long-term care arrangements often involve multiple types of care, such as receiving both paid and unpaid help in the home or combining residential care with care from relatives. Some types of paid and unpaid care are fungible but they are more often complements: co-residence with children is a substitute for residential nursing home use,<sup>9–11</sup> yet many nursing home residents also receive family care.<sup>12</sup> Similarly, while the availability of family care reduces the use of paid home care,<sup>11</sup> many community-dwelling older adults receive both paid and family care.<sup>13</sup>

Although the complexity of LTC arrangements for older adults with care needs is well established, we still know little about how changes in nursing home use, other paid care, and family care

interacted with one another during the pandemic and whether families filled the gaps in care from declines in nursing home and paid care use. Understanding changes in the LTC arrangements of older adults with care needs during the pandemic is important because LTC has lasting impacts on the health of both care recipients and care providers.<sup>14–19</sup>

We used the Health and Retirement Study (HRS), a nationally representative, longitudinal survey of adults aged 51 and over to examine the association between COVID-19 severity and LTC outcomes among older adults who report at least 1 activity of daily living (ADL) limitation or who have dementia. We considered a broad set of LTC outcomes, including residing in a nursing home or with adult children, the likelihood of using paid and unpaid care, the number of paid and unpaid care providers, and hours of paid and unpaid care. Our study constitutes an important step forward in understanding the changes across the LTC arrangements of older adults with care needs during the first pandemic year, focusing on whether family care made up the gap left by declining paid care and nursing home use. Policymaking around LTC should consider whether pandemic-induced changes to the LTC landscape are permanent and the implications for the well-being of older Americans and their caregivers over the next decade.

## Data and methods

### Data sources

We used the 2018 and 2020 waves of the HRS, a longitudinal, nationally representative survey of individuals aged 51 and

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older and living in the United States, which is sponsored by the National Institute on Aging and is conducted by the University of Michigan. The HRS collects detailed information on health, difficulties and help with ADLs/instrumental ADLs (IADLs), family structure, economic circumstances, and living arrangements, including nursing home residency. It also contains information on the county of residence for HRS respondents in each wave. Data collection for the 2020 wave started in March 2020, coinciding with the first wave of the pandemic, and continued monthly through April 2021.<sup>20–22</sup> Using the year and month of the 2020 wave interview and county of residence as of 2018 from the restricted-access detailed geographic information file,<sup>23</sup> we linked each HRS respondent to location-specific information on cumulative COVID-19 deaths in the month of their HRS interview compiled by USAFacts.<sup>24</sup>

## Sample

The study sample consisted of HRS respondents in 2018 who reported difficulty with at least 1 ADL (walking across a room, dressing, eating, getting in and out of bed, using the toilet, or bathing) because of a health or memory problem, or were categorized as having dementia (score of 0–6 out of 27 points) using the Langa-Weir Classification of Cognitive Function,<sup>25</sup> who were also interviewed in 2020 ( $n = 2550$ ). We defined ADL needs and dementia using information collected in the 2018 wave to avoid confounding preexisting functional or cognitive limitations with those arising due to COVID-19.

## Outcome variables

We defined all LTC outcome variables using the 2020 wave of the HRS. We identified respondents as living in a nursing home (and distinct from short-term, post-acute nursing home stays) based on self-reports. We identified respondents living with adult children using the household roster, which enumerates all household members.

For every activity that HRS respondents reported needing help with due to a health or memory problem, they are asked if they received help in the last month, the relationship of the helper, and how many hours of care the helper provided. Using this information, we defined HRS respondents as receiving family care in the last month if they report a helper with whom they have a filial relationship or who was unpaid. We defined HRS respondents as receiving paid care in the last month if they report a helper who was paid and/or the employee of an agency or an organization. We coded paid and family care for all HRS respondents regardless of place of residence. Respondents can receive both paid and unpaid care. We coded respondents as receiving no care if they did not live with adult children or in a nursing home and did not report receiving paid or unpaid care. We also coded the number of helpers and total number of caregivers by type of caregiver (paid and unpaid).

## Explanatory variables

The main explanatory variable was cumulative deaths per 100 000 in the respondent's county of residence at the end of the month in which they completed the HRS interview. [Appendix Figure 1](#) shows cumulative COVID-19 deaths per 100 000 in each county in the United States in May 2020 and May 2021 measured in quartiles in each period. We standardized these rates into  $z$ -scores and interpret the results as a 1-SD increase in cumulative deaths per 100 000. In our

sample, a 1-SD increase in COVID-19 mortality rates is 80 deaths per 100 000 ([Table 1](#)). For context, a change in 80 deaths per month corresponds to the difference between Wayne County (Detroit metro area) in April 2020 and November 2020. We used cumulative deaths per 100 000 as a proxy for the severity of the COVID-19 pandemic in a local area in each month. This measure of severity is particularly salient for older adults, relative to a measure such as cases per 100 000, because older adults were disproportionately represented in COVID-19 deaths even when they were not overrepresented in case counts.<sup>26,27</sup> In 2020, approximately 80% of COVID-19 deaths were among those aged 65 and older, while only 15% of cases were among this age group.<sup>28</sup> We refer to the measure as local COVID-19 severity in our discussion of the results for brevity. Results using nonstandardized scores are reported in [Appendix Table 4](#).

## Covariates

We included controls for gender, race (White, Black, other), ethnicity (Hispanic, non-Hispanic), marital status (single, married), a quadratic in age, education (< high school [HS], GED [General Educational Development], HS grad, some college, college+), number of functional limitations reported in 2018, dementia measured in 2018 (0/1), LTC mode in 2018 (residing in a nursing home [0/1], residing with children [0/1], any paid care [0/1], and any unpaid care [0/1]), whether the 2020 survey was conducted by a proxy respondent (0/1), whether the respondent reported being vaccinated for COVID-19 measured in 2020 (0/1), and the economic impact of COVID-19 in the county as measured by the percentage change in employment relative to the same quarter of the 2019. Calendar month and county fixed effects were used as covariates.

## Statistical analyses

Our statistical approach compared the LTC outcomes of HRS respondents with care needs that predated the pandemic who had differential exposure to the severity of the pandemic as captured by county-level cumulative COVID-19 mortality rates. We leveraged geographic variation in mortality rates based on the county of residence in the pre-pandemic period and temporal variation in mortality rates based on the month in which HRS respondents were interviewed. Specifically, we regressed each LTC outcome on COVID-19 severity along with the controls listed above using linear probability and ordinary least-squares models. Calendar month fixed effects control for cumulative national exposure to COVID-19 severity in each month, and county fixed effects control for differences across counties in the average severity of the pandemic, respectively. We report marginal effects of a 1-SD increase in local COVID-19 severity and robust SEs clustered by county. Further details on the models are shown in [Appendix Section 1](#).

To determine if associations between local COVID-19 severity and 2020 LTC outcomes differed based on LTC mode in 2018, we ran a second set of models with an interaction term between local COVID-19 severity and LTC mode in 2018 (residing in a nursing home, residing with children, any paid care, any unpaid care, and no LTC) for each 2020 LTC outcome. Interacting LTC in 2018 with local pandemic severity allowed us to isolate whether pandemic-related differences in 2020 LTC outcomes were concentrated among older

**Table 1.** Characteristics of the HRS respondents with at least 1 ADL limitation or dementia in 2018.

	Completed 2020 interview (n = 2550)	
	Mean or proportion	(95% CI)
Panel 1: Demographic characteristics in 2018		
Age, y	68.8	(68.4, 69.2)
Female, %	59.0	(57.1, 60.9)
White non-Hispanic, %	60.6	(58.7, 62.5)
Black non-Hispanic, %	17.2	(15.7, 18.6)
Hispanic, %	15.8	(14.4, 17.2)
College graduate, %	43.9	(42.0, 45.8)
Married, %	52.2	(50.3, 54.1)
Number of children, n	2.53	(2.48, 2.59)
Panel 2: Self-care needs and long-term care, 2018		
Any reported ADL limitations, %	90.8	(89.7, 92.0)
Number of ADL limitations, n	1.95	(1.89, 2.01)
Demented, %	17.8	(16.3, 19.3)
Living in nursing home, %	4.1	(3.4, 4.9)
Living with adult children, %	24.2	(22.5, 25.8)
Get formal (paid) help, %	11.8	(10.6, 13.1)
Get family (unpaid) help, %	45.3	(43.4, 47.2)
No care reported, %	41.0	(39.1, 43.3)
Panel 3: Long-term care outcomes 2020		
Living in nursing home, %	8.1	(7.0, 9.1)
Living with adult children, %	22.6	(21.0, 24.2)
Get formal (paid) help, %	14.1	(12.7, 15.4)
Hours of paid care, h	6.36	(4.61, 8.10)
Number of paid caregivers, n	0.16	(0.14, 0.17)
Get family (unpaid) help, %	44.1	(42.2, 46.1)
Hours of unpaid care, h	47.95	(42.52, 53.37)
Number of unpaid caregivers, n	0.71	(0.67, 0.75)
No care reported, %	42.0	(40.1, 43.9)
Received COVID-19 vaccine, %	1.7	(1.2, 2.2)
Panel 4: Month of 2020 HRS interview, %		
Q2, 2020	41.6	(39.7, 43.5)
Q3, 2020	26.8	(25.1, 28.6)
Q4, 2020	20.8	(19.3, 22.4)
Q1, 2021	9.0	(7.9, 10.1)
Q2, 2021	1.7	(1.2, 2.3)
Panel 5: Census region, %		
New England	3.8	(3.1 4.6)
Middle Atlantic	11.0	(9.8 12.3)
East North Central	16.2	(14.8 17.6)
West North Central	7.2	(6.2 8.2)
South Atlantic	19.8	(18.2 1.3)
East South Central	7.6	(6.6 8.7)
West South Central	13.7	(12.4 15.1)
Mountain	7.4	(6.3 8.4)
Pacific	13.2	(11.9 14.5)
Panel 6: COVID-19 severity		
Cumulative COVID-19 deaths per 100 000	60.1	(57.2, 63.0)
SD of cumulative COVID-19 deaths per 100 000	81.4	

Abbreviations: ADL, activity of daily living; HRS, Health and Retirement Study; Q, quarter.

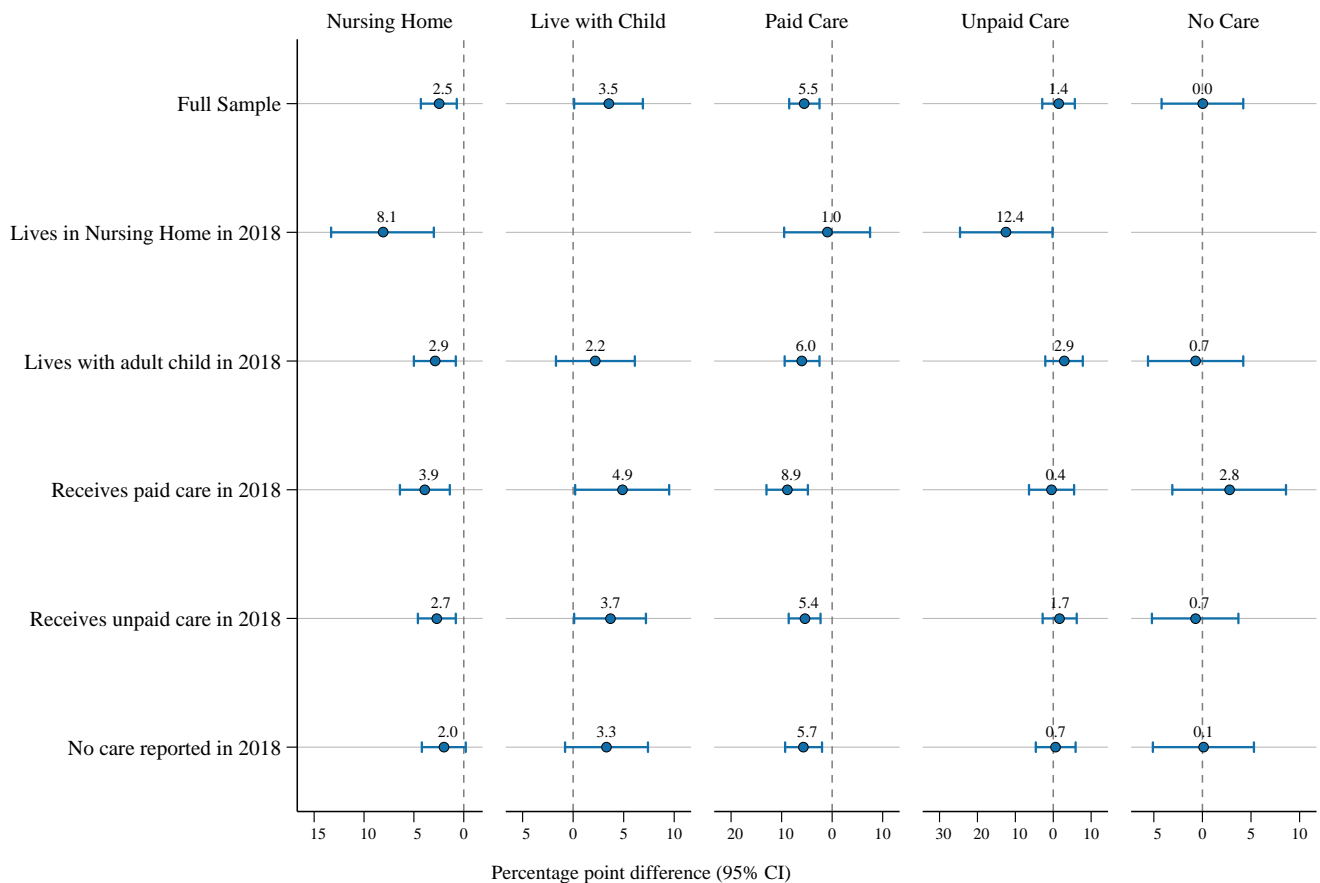
Source: Authors' calculations using data from the HRS and USAFacts.org. All estimates are population weighted using HRS survey weights. The sample includes HRS respondents interviewed in 2018 with at least 1 ADL limitation and/or dementia (defined as scoring <7 using the Langa-Weir Classification of Cognitive Function) who were interviewed in 2020. All variables are binary, except for age, number of children, number of ADL limitations, number and hours of paid and unpaid care, and cumulative deaths per 100 000.

adults within a particular LTC arrangement in 2018—for example, if changes in nursing home use were driven by older adults already living in nursing homes or living in the community. We report marginal effects of a 1-SD increase in local COVID-19 severity by 2018 LTC mode. We excluded transitions from nursing home in 2018 to residing with children and to no care in 2020 from the analysis due to insufficient sample size. Further details on the models are shown in [Appendix Section 1](#). Because mortality was high

among older adults in this period, we also show the association between local COVID-19 severity and individual-level mortality of HRS respondents from any cause as an outcome in [Appendix Section 2](#).

### Limitations

County-level COVID-19 mortality rates have been shown to be correlated with many characteristics that we did not



**Figure 1.** Association between long-term care arrangements and county-level COVID-19 mortality. Source: Authors' calculations using data from the Health and Retirement Study (HRS) and USAFacts.org. The sample includes HRS respondents interviewed in 2018 with at least 1 activity of daily living (ADL) limitation and/or dementia (defined as scoring <7 using the Langa-Weir Classification of Cognitive Function) who were known to be alive in March 2020. Each coefficient corresponds to a single regression of long-term care mode in 2020 on the z-score of cumulative COVID-19 mortality in the respondent's county of residence (measured in 2018) in the calendar month of the interview (row 1) or z-score of cumulative COVID-19 mortality interacted with long-term care mode in 2018 (rows 2 through 6). The models adjusted for the following covariates: age, age<sup>2</sup>, marital status, race/ethnicity, education, number of functional limitations reported in 2018, dementia measured in 2018, whether the individual resided in a nursing home or with a child in 2018, whether the individual received paid or unpaid care in 2018, whether the 2020 survey was conducted by a proxy respondent, whether the respondent reported being vaccinated for COVID-19 measured in 2020, and the economic impact of COVID-19 in the county as measured by the percentage change in employment relative to the same quarter of the 2019. All models included county fixed effects and calendar month fixed effect. Error bars represent robust SEs clustered at the county level. All estimates are population weighted using HRS 2020 survey weights.

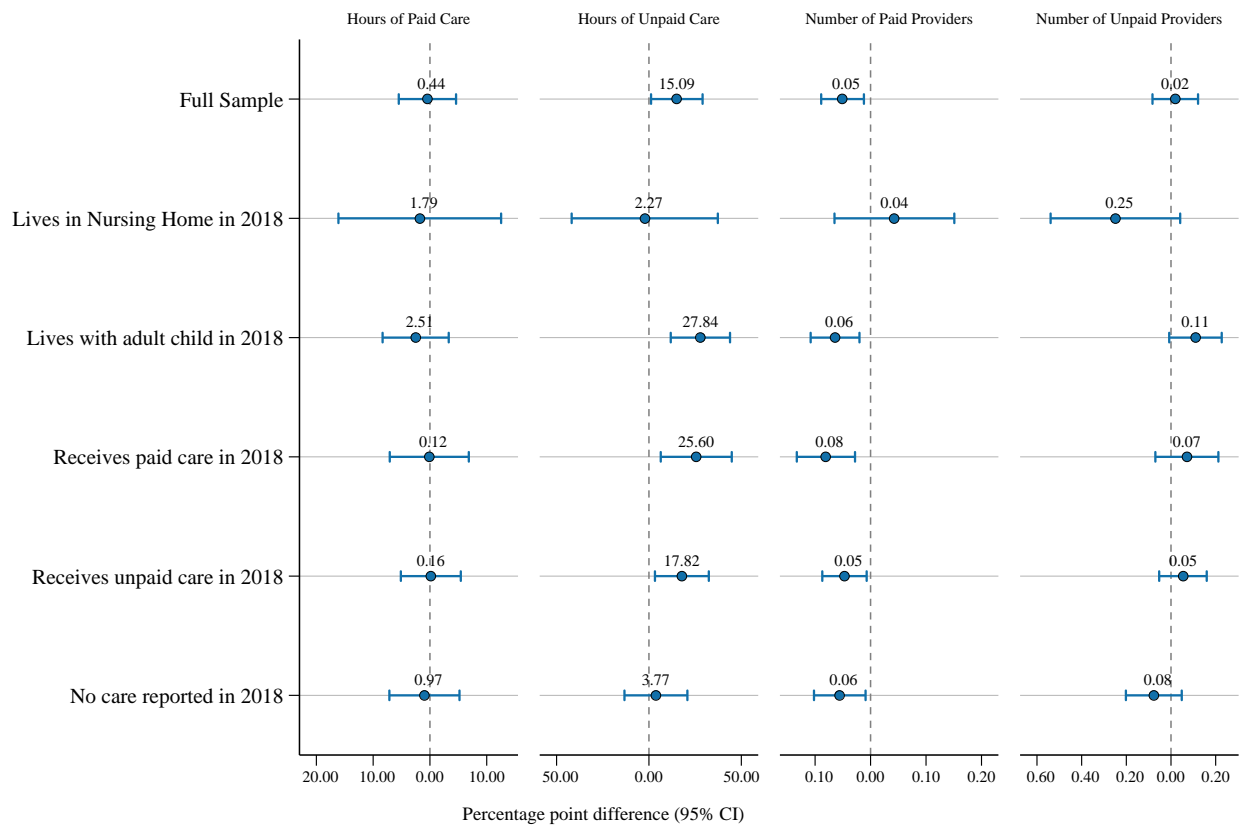
directly control for in our analysis.<sup>29</sup> If these associations are fixed over time, these would be absorbed by county fixed effects. If these associations are a result of changes over time in behaviors that reflect adaptation to the pandemic, these would be absorbed by month fixed effects. We controlled for vaccination status directly, which is 1 behavioral response to the pandemic for older people. However, it is still possible that people living in areas that experienced high levels of COVID-19–related deaths later in the pandemic may have had different behavioral responses in terms of LTC choices than those who experienced high levels of COVID-19–related deaths early in the pandemic. Finally, we had a limited sample of nursing home residents from which to draw conclusions about outcomes for these populations.

## Results

Table 1 shows the characteristics of the sample of HRS respondents with least 1 ADL limitation or dementia in 2018 who were also interviewed in 2020 ( $n = 2550$ ). We present demographic characteristics of the sample as of 2018 in Panel 1. The average

age is 69 years, 59% are female, 60.6% are White, 17.2% are Black, and 15.8% are Hispanic. More than 40% of the sample is a college graduate and over half are married, with 2.5 children.

Panel 2 of Table 1 reports self-care needs and LTC arrangements for the sample in 2018 and Panel 3 of Table 1 reports LTC outcomes for the sample interviewed in 2020. Over 90% of the sample had at least 1 ADL limitation in 2018 and the mean number of limitations was 2. Of the sample, 17.8% were classified as having dementia. In 2018, 4.1% of the sample lived in a nursing home, 24.2% lived with an adult child, 11.8% reported receiving paid care, and nearly half reported receiving unpaid care from family or friends, while 41% reported no care. In 2020, 8.1% of the sample lived in a nursing home, 22.6% lived with adult children, 14.1% reported receiving paid help, and 44.1% reported receiving help with from family or friends. Respondents had an average of 0.71 unpaid and 0.16 paid caregivers and received 47.9 and 6.4 hours of unpaid and paid care in the last month, respectively. The cumulative number of COVID-19 deaths for respondents interviewed in the 2020 wave in their county of



**Figure 2.** Association between intensity of paid and unpaid care and county-level COVID-19 mortality by 2018 long-term care arrangement. Source: Authors' calculations using data from the Health and Retirement Study (HRS) and USAFacts.org. The sample includes HRS respondents interviewed in 2018 with at least 1 activity of daily living (ADL) limitation and/or dementia (defined as scoring <7 using the Langa-Weir Classification of Cognitive Function) who were known to be alive in March 2020. Each coefficient corresponds to a single regression of long-term care intensity in 2020 on the z-score of cumulative COVID-19 mortality in the respondent's county of residence (measured in 2018) in the calendar month of the interview (row 1) or z-score of cumulative COVID-19 mortality interacted with long-term care mode in 2018 (rows 2 through 5). The models adjusted for the following covariates: age, age<sup>2</sup>, marital status, race/ethnicity, education, number of functional limitations reported in 2018, dementia measured in 2018, whether the individual resided in a nursing home or with a child in 2018, whether the individual received paid or unpaid care in 2018, whether the 2020 survey was conducted by a proxy respondent, whether the respondent reported being vaccinated for COVID-19 measured in 2020, and the economic impact of COVID-19 in the county as measured by the percentage change in employment relative to the same quarter of the 2019. All models included county fixed effects and calendar month fixed effect. Error bars represent robust SEs clustered at the county level. All estimates are population weighted using HRS 2020 survey weights.

residence (measured in 2018) was 60 per 100 000, and the SD was 81.4.

Figure 1 presents graphically the results of our main analysis examining how LTC outcomes in 2020 are associated with local COVID-19 severity in the county of residence during the interview month for the full sample (regression results are reported in Appendix Table 1). Figure 1 also presents results from the interacted models of the association between local COVID-19 severity and LTC outcomes in 2020 differentially by 2018 LTC mode. We plotted marginal effects and 95% CIs for 5 main LTC outcomes measured in 2020: living in a nursing home, co-residing with adult children, receiving paid care, receiving unpaid care, and receiving no care.

We found that a 1-SD increase in local COVID-19 severity is associated with a 2.5-percentage-point (-pp) (95% CI: -4.3 to -0.7) decline in the probability of living in a nursing home among HRS respondents with care needs. This corresponds to a decrease of more than 30% from the 2020 average nursing home rate of 8.1%. Along with a decline in nursing home residency, there was an increase in the likelihood of co-residence with adult children. A 1-SD increase in local COVID-19 severity was associated with a 3.5-pp (95% CI:

0.1 to 6.9) increase in the likelihood of living with an adult child in 2020, suggesting that some of the decline in residential care was compensated for by family care.

We found that paid care decreased by 5.5 pp (95% CI: -8.5 to -2.5; 39%), and we found no changes in the likelihood of receiving unpaid care from family or friends or in the likelihood of receiving no care.

The significant decline in nursing home residence in 2020 associated with increased local COVID-19 severity was experienced by all respondents who reported receiving LTC in 2018, irrespective of mode (full results shown in Appendix Table 3). Increases in local COVID-19 severity were associated with an 8.1%-point (95% CI: -3.0 to -13.3) increase in the probability of exiting nursing homes for people who lived in a nursing home in 2018 and who were interviewed in 2020. This is independent of the declines in nursing home residence due to residents' death (Appendix Table 6). Increased local pandemic severity significantly reduced the probability of moving into a nursing home for those living with children (-2.9 pp; 95% CI: -5.0 to -0.8), those receiving paid care (-3.9 pp; 95% CI: -6.4 to -1.4), and those receiving unpaid care (-2.7 pp; 95% CI: -4.6 to -0.8) in 2018.



Associations between local pandemic severity and nursing home care were negative but not statistically significant for those who did not receive any care in 2018.

The positive association between local COVID-19 severity and the likelihood of living with children was similar, regardless of the 2018 LTC mode, and of a similar magnitude to the decline in nursing home use (Figure 1; full results shown in Appendix Table 3) but only reached statistical significance for those receiving paid care (4.9 pp; 95% CI: 0.2 to 9.5). The association between local COVID-19 severity and a decline in the likelihood of paid care was found for all 2018 LTC modes, except for those living in a nursing home in 2018. The association between COVID-19 severity and receiving unpaid care was negative for people living in a nursing home in 2018 (−12.4 pp; 95% CI: −24.6 to −0.2) but not for any other group. No changes were found in the likelihood of receiving no care in 2020 across any 2018 LTC modes.

Local COVID-19 severity was also associated with the intensity of paid and unpaid care (Figure 2; full results shown in Appendix Table 2). A 1-SD increase in local COVID-19 severity was associated with a decrease of 0.05 paid caregivers (95% CI: −0.09 to −0.01), a 31% decline relative to the mean. There was no statistically significant change in hours per month of paid care; however, unpaid care increased by 15.09 hours per month (95% CI: 1.15 to 29.03) with a 1-SD increase in local COVID-19 severity.

Finally, we found no changes in paid care hours associated with greater local COVID-19 severity across 2018 LTC modes (Figure 2; full results shown in Appendix Table 3), but we found an increase in unpaid care hours for those living with children in 2018 (27.8 h; 95% CI: 11.8 to 43.9) for those receiving paid care in 2018 (25.6 h; 95% CI: 6.4 to 44.8) and for those receiving unpaid care in 2018 (17.8 h; 95% CI: 3.4 to 32.4). The decline in the number of paid caregivers associated with greater local COVID-19 severity was similar and statistically significant across all 2018 LTC modes, except for those living in a nursing home in 2020, who did not experience a reduction in the number of paid caregivers. No changes were found in the number of unpaid caregivers.

Because of the high COVID-19 mortality rates in nursing homes, some of the decline in nursing home residence we observed could be due to HRS respondent deaths. We examined whether the likelihood of death for individuals in the sample was higher in county-months with higher COVID-19 cumulative mortality rates. There were 150 deaths during this period in the HRS, and we found an 8-pp increase in the likelihood of death in county-months with higher COVID-19 cumulative mortality rates among HRS respondents living in nursing homes. We did not find any evidence of differential mortality among the sample of community-dwelling older adults in 2018 (Appendix Table 6).

## Discussion

The research on LTC during the pandemic has focused on the particular dangers posed by nursing homes and other congregate living arrangements<sup>2,4,30</sup> or impacts of the pandemic on family caregivers.<sup>7,8,31,32</sup> Yet, anecdotal evidence emphasizes the trade-offs and interactions between paid and unpaid care, including family members taking on additional caregiving responsibilities when their older relatives moved out of nursing homes or lost access to services such as adult day care.<sup>33,34</sup>

We examined how different LTC modes, including nursing home residence, co-residence with family, and the use of paid and unpaid care, interacted with one another during the first year of COVID-19 in a nationally representative sample of older adults with care needs that predated the pandemic. Using the community-wide COVID-19 death rate during the month of data collection as a proxy for local pandemic severity, we showed that greater pandemic severity was associated with a decline in paid care in both residential and community settings. Greater local pandemic severity was associated with a decline in the probability of entering a nursing home and an increase in the probability of exiting a nursing home, both because residents moved out and because residents died. The decline in nursing home residence in counties and months with high COVID-19 death rates is consistent with Werner and Coe,<sup>4</sup> who show that nursing home censuses decreased more sharply in counties with high COVID-19 case rates. While these census changes have been attributed to a fall in short-stay post-acute care patients,<sup>1</sup> we found that there was a decrease in long-stay nursing home residents as well.

In addition to declines in nursing home care, we found that increases in local COVID-19 severity were associated with a decline in the use of paid care for help with ADL and IADL limitations and in the number of paid caregivers. The one important exception to the overall decline in the paid care is among people who lived in a nursing home in 2018 for whom there was not a statistically significant decline in the likelihood of receiving paid care.

We show that family members picked up some of the slack. Greater local COVID-19 severity was associated with an increase in the probability of living with adult children, a substitute for nursing home care or other forms of paid help, and in more hours of care from unpaid caregivers.<sup>9</sup> The 1 exception to this pattern was among people who lived in nursing homes in 2018 for whom greater local COVID-19 severity was associated with a decline in the likelihood of unpaid care, perhaps because of restricted visitation policies in nursing homes during 2020. Whether declines in paid care were fully compensated by increased unpaid care or led to unmet care needs and adverse health outcomes is an important avenue of future research.

The implications of our findings extend to a wide range of care-related policies. If the decline in nursing home care coupled with an increase in co-residence with children were to be permanent, it would imply an increase in demand for services related to more intensive caregiving in the home, including assistive equipment and other home modifications, adult day services, and paid home health care. However, our findings suggest that older adults may be less likely to use in-home paid care. While we cannot directly determine whether this was driven by changes in the supply or demand for paid care, it points to the role of policies to both increase the supply of professional caregivers and make high-quality paid care more accessible and affordable. Finally, the increased hours of unpaid caregiving highlight the need for policies that support combining caregiving and employment, supporting the physical and mental health needs of caregivers, and enhancing community-based care. These include paid leave for caregiving and paid sick leave for more occasional care demands and continuing support for health care coverage not tied to employment. Ongoing federal efforts aimed at improving the quality of paid care jobs, increasing support for family caregivers, and increasing support for Medicaid-funded Home

and Community-Based Services to help older adults receive care in their home are examples of such policy responses.<sup>35,36</sup>

Our analysis shows associations between the initial impact of COVID-19 and a broad set of care arrangements, with implications for the well-being of both caregivers and care recipients. We conceptualize the COVID-19 effect as a multifaceted shock, which encompassed both the direct morbidity and mortality threat of the SARS-CoV-2 virus as well as the myriad ways in which the pandemic may have impacted the local LTC infrastructure. To the extent that local COVID-19 severity was associated with changes in the supply of care through staffing shortages or closures in LTC facilities, changing local regulations, or the changing availability of family caregivers, these will all be potential drivers of our findings. COVID-19 may have also affected the demand for care arrangements. In particular, the excess mortality in nursing homes and policies on visitation may have made older adults more hesitant to use this type of care. State or local policies may also have affected both the demand for and supply of care and may themselves be a cause or consequence of local COVID-19 severity. We did not attempt to disentangle these policy effects. Our results lay the groundwork for future studies to unravel these separate drivers while underscoring the importance of considering the full range of LTC outcomes and how they interact.

## Conclusion

This study assessed how LTC arrangements changed among older adults with care needs during the first year of the COVID-19 pandemic. Our findings suggest that the pandemic accelerated existing trends away from institutional LTC but was also associated with a decline in the use of paid care more broadly, placing additional pressures on family caregivers. It is critical that we understand whether the decline in paid care, regardless of its immediate cause, will persist into the future.<sup>37</sup>

## Supplementary material

Supplementary material is available at *Health Affairs Scholar* online.

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## Conflicts of interest

Please see ICMJE form(s) for author conflicts of interest. These have been provided as supplementary materials.

## Notes

- Examining long-term care in America: the impact of the coronavirus in nursing homes: hearing before the U.S. House of Representatives Select Subcommittee on the Coronavirus Crisis, 117th Cong. 2022. Testimony of Dr. David Grabowski. <https://docs.house.gov/meetings/VC/VC00/20220921/115148/HHRG-117-VC00-Wstate-GrabowskiD-20220921.pdf>. Accessed October 2022.
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