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## The Effect of COVID-19 on Dual-Eligible Beneficiaries: A Scoping Review

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### Abstract

**Objectives:** To examine the impact of COVID-19 on clinical health outcomes and health related social needs among Medicaid-Medicare dual eligible beneficiaries

**Design:** Scoping Review

**Setting and Participants:** Dual eligibles during COVID-19

**Methods:** We performed a comprehensive scoping review including observational studies, clinical trials, and original empirical research studies of PubMed, and CINAHL. We generated a list of terms related to programs that both serve dual eligibles and address our desired outcomes. With the assistance of a medical librarian, we identified relevant abstracts published during COVID-19 meeting our inclusion criteria. We performed full-text reviews of relevant abstracts and selected the final studies. We extracted the study population, design, and major findings, then conducted thematic analysis.

**Results:** 1100 articles were identified with 439 deemed relevant. On full text-review, 15 articles met inclusion criteria representing over 86 million Medicare beneficiaries. No studies were specific only to dual eligibles. Topic areas included in this review include COVID-19 case counts (two articles), mortality (eight articles), hospitalizations (seven articles), food insecurity (one article), self-reported mental health (one article), and social connectedness (two articles). Dual eligibles had disparate COVID-19 related outcomes from Medicare-only enrollees in 12 of 15

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#### CONFLICTS OF INTEREST

RF is the Chief Executive Officer AR is the Chief Technology Officer of Intus Care, a technology company that provides services to Programs of All-Inclusive Care for the Elderly.

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studies. Studies show higher mortality for dual eligibles overall, but this was not true for dual eligibles in nursing homes and assisted living communities. Dual eligibles were more likely to experience food insecurity. More favorably, dual eligibles reported greater social connectedness.

**Conclusions and Implications:** Dual eligibles had different outcomes from Medicare-only recipients in multiple health outcomes and health-related social needs during COVID-19, but studies are limited, particularly in terms of health-related social needs. Future work focusing on outcomes only among dual eligible beneficiaries, integrated care programs and fiscal alignment between Medicare and Medicaid plans may help stakeholders address health needs specific to dual eligibles.

### Brief Summary:

There is limited research on dual eligibles during COVID-19- but they have different health utilization and health related social needs outcomes than Medicare only beneficiaries during the pandemic

### Keywords

Dual-eligible; Medicaid; Medicare; COVID-19; Healthcare Utilization; Disparities; Quality of Life

## INTRODUCTION

Underserved and vulnerable populations, including the poor, older adults, and people with disabilities, have faced disproportionate physical and mental health impacts during COVID-19 in terms of COVID-19 clinical outcomes, social connectedness, and access to material resources. COVID-19 incidence and mortality are associated with income inequality and as the pandemic has progressed, COVID-19 mortality has increased among lower-income adults.<sup>1-4</sup> Adults over the 65 and older have been hospitalized at a rate almost five times that of adults ages 18 to 49 and make up 75% of all deaths in the US.<sup>5,6</sup> The pandemic itself as well as pandemic mitigation measures have limited access to needed medical and social services, increased social isolation, caused major disruptions in daily life and increased social unmet needs.<sup>7,8</sup> People with disabilities have also faced heightened challenges. Many people with disabilities are at higher risk of death from COVID-19 and, like older adults, are reliant on access to medical care and rehabilitative services.<sup>9</sup> Specific pandemic containment measures may also create more widespread challenges for people with disabilities; for instance, people with hearing loss may not be able to lip read with masks or hear as well with social distancing.<sup>9</sup>

These three groups – older adults, the poor, and people with disabilities – comprise Medicare-Medicaid dual eligibles. Specifically, dual eligibles are people who receive Medicare (based on age or disability) and who are also low-income and thus eligible for Medicaid. In 2019, there were 12.2 million dual eligibles, with over three-fifths being over the age of 64.<sup>10</sup> While the pathways to dual eligibility vary by state, dual eligibles represent some of the most vulnerable and medically complex Medicare and Medicaid members. Dual eligibles make up only 19% of Medicare recipients but account for 34% of

Medicare spending.<sup>11</sup> Half of these dual eligibles have difficulty with at least one activity of daily living.<sup>10</sup> Dual eligibles face greater medical challenges than their Medicare-only counterparts: 41% have at least one mental health diagnosis, 60% have multiple chronic conditions and 18% rate their health as poor compared to 6% of Medicare beneficiaries.<sup>12</sup> Many dual eligibles receive home and community-based services such as personal attendants that enable them to live independently.<sup>13</sup> During COVID, there are reports that dual eligibles did not receive these services due to concerns about COVID-19 spread. Compared to Medicare-only recipients, dual eligibles are poorer and have lower levels of both education and social support.<sup>11, 14</sup> Even prior to the pandemic, these dual eligibles were also far more likely to experience health related social needs; between two-thirds to 80% of dual eligible reported at least one health related social need (financial strain, food insecurity, loneliness or social isolation, housing insecurity or poor housing quality, utility insecurity, unreliable transportation) compared to less than 50% of their Medicare only counterparts,<sup>15, 16</sup> with pandemic only worsening existing disparities.<sup>17</sup>

While the impact of COVID-19 on both Medicare beneficiaries and low-income groups has been well demonstrated, limited attention has been paid to the consequences of the pandemic on Medicare-Medicaid dual eligibles. Understanding the impact of the pandemic on this unique population of recipients is critical for the Centers for Medicare & Medicaid Services (CMS) at the national level, Medicaid agencies at the state level, as well as the Medicaid managed care organizations, community-based organizations, and clinicians that serve dual eligibles to improve their care during the ongoing COVID-19 pandemic and future public health emergencies. This comprehensive scoping review aimed to summarize the existing research on the impact of COVID-19 on health outcomes and health related social needs. While we initially sought to understand the role of integrated care plans serving dual eligibles such as Plans of All Inclusive Care, Medicare-Medicaid plans, and Dual Eligible Special Needs Plans that are focused on addressing the complex medical and social needs of this group, given the lack of literature on the topic, we broadened our search to look holistically at a broader range of studies examining the impact of COVID-19 on dual eligibles, specifically focusing on healthcare outcome related to COVID-19 (case counts, hospitalizations, and mortality,) and health-related social needs. Finally, we discuss possibilities for future work to improve care of this unique high-cost high need population.

## METHODS

### Study design

We conducted a scoping review by searching PubMed, and CINAHL for studies pertaining to the COVID-19 pandemic-related health and quality of life outcomes in the dual eligible population. While we initially focused on dual eligible integrated programs, given the very limited literature on these programs, we expanded our search to include any studies that reported outcomes specific to dual eligibles. We followed the Preferred Reporting Items for Systematic Review and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guidelines in this manuscript;<sup>18</sup> a registered protocol was not followed.

## Search strategy

During our literature review, we adhered to the Joanna Briggs Institute Reviewers' manual: *Methodology for JBI Scoping Review*.<sup>18</sup> A medical librarian assisted the research team with the search. The search was conducted from September 13, 2021- May 22,2023. Given our focus on a group that only exists within the US healthcare system, we included English language articles published in the US. The detailed search strategy is provided in the Appendix. To fully capture the impact of COVID-19 on dual eligibles, we included several concepts: (a) Dual-eligible enrollment for Medicare and Medicaid (b) Integrated Medicare-Medicaid Programs (Programs of All-Inclusive Care, Fully Integrated Dual-Eligible Special Needs Plans, and Medicare-Medicaid Plans), and (c) clinical outcomes (case numbers, hospitalizations, or mortality) and health related social needs during the COVID-19 pandemic. Health related social needs included self-reports of housing instability, food insecurity, transportation problems, utility help, family and community support, financial strain, employment, education, physical activity, substance use, and mental health. We chose these specific health related social needs by examining those that were asked about in the CMS Accountable Health Community Health Related Social Need Screener. While disability was included in the screener as well, we excluded it due to disability also being a reason for dual eligibility. We excluded studies that focused solely on utilization of outpatient health services, many of which examined the use of telehealth, given our interest in patient's immediate clinical outcomes rather than routine ambulatory care..We included clinical outcomes related to COVID-19 (e.g. COVID-19 related hospitalizations) as well as clinical outcomes unrelated to the virus, but immediately relevant to dual eligible health during a pandemic (e.g., all-cause excess deaths during the pandemic, opioid overdose deaths in the pandemic period). Although we could have excluded these, ample data suggests the impact on health of the pandemic period was far-reaching due to the downstream impact of the virus on access and quality of inpatient care.<sup>19,20</sup>

An initial limited search of PubMed was undertaken to identify relevant articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles were used to develop a full search strategy for PubMed and Cumulative Index for Nursing and Allied Health (CINAHL). These two databases were chosen to ensure a breadth of articles from multiple disciplines; PubMed covers a broad range of biomedical topics relevant to public health and CINAHL includes references for nursing and allied health journals that may not be indexed in other databases. The search strategy, including all identified keywords, MeSH terms and index terms, were adapted for each included database and/or information source. We included studies specifically examining COVID-19 health and health related social needs in populations dual-eligible for Medicare and Medicaid programs that were English language studies; US based; and had one of the following study designs: observational data (prospective, retrospective), or clinical trials.

## Study selection and abstraction

Following the execution of the search strategy, we collected and uploaded all identified studies in the COVIDENCE systematic review management software and duplicates were automatically removed. After an initial joint review of several articles to ensure

concordance, at least authors independently reviewed the titles and the abstracts to assess which publications met the inclusion criteria. Any disagreement between the two reviewers was resolved by another. If an article was reviewed and determined to meet inclusion criteria, the full article was then read by either the senior author (EG) or two additional authors to further examine adherence to the criteria. At least two authors (SM, ND) then assessed all included articles to create evidentiary tables summarizing the findings.

## RESULTS

### Abstraction process

After identifying 1100 abstracts, 439 were found to be relevant. When full-text articles were retrieved for the 439 abstracts, 424 of them did not meet inclusion criteria. Of the 424 abstracts that were deemed not relevant from the full-text review, reasons for exclusion included: 393 abstracts compared Medicare and Medicaid populations separately or did not include dual-eligible enrollees and 193 abstracts did not include data on COVID-19 related outcomes of interest. Ultimately, fifteen articles were deemed relevant (Tables 2 and 3). All included articles were published in or after 2020.

### Study designs and study data sources

Of the fifteen studies, ten studies were retrospective cohort studies of Medicare beneficiaries using Medicare claims data,<sup>21–30</sup> with two focusing on Medicare beneficiaries in assisted living communities (ALCs)<sup>29,30</sup> and another that focused on a group of beneficiaries enrolled in an Accountable Care Organization at an academic medical center.<sup>28</sup> These studies used Medicare A and B claims,<sup>21–23,25</sup> the Master Beneficiary Summary file (MBSF),<sup>21,23,24,27,29,30</sup> the Minimum Data Set (MDS),<sup>21,24,25,29</sup> the CMS enrollment database,<sup>21,22,25,29</sup> Medicare claims available through the Chronic Condition Warehouse,<sup>26</sup> the publicly available New York Times COVID-19 cases/deaths tracking system,<sup>29,30</sup> and official state databases.<sup>29</sup> Keeney et al. used claims available from accountable care organization membership.<sup>28</sup> Four studies were secondary, cross-sectional analyses of survey data,<sup>31–34</sup> using the Household Pulse Survey administered by the US Census Bureau,<sup>32,33</sup> as well as the Summer 2020 Medicare Current Beneficiary Survey COVID-19 Supplement.<sup>31,34</sup> Lastly, one study was a case control study that used the MBSF, the MDS, the Medicare Carrier File, and the hospital standard analytic file.<sup>35</sup>

### Study characteristics

**Study outcomes**—Study outcomes included COVID-19 related clinical outcomes (case counts, complications, deaths and hospitalizations), and health-related social needs during COVID-19 and included findings specific to dual eligibles. The claims-based data studies focused on health outcomes, including all-cause,<sup>26</sup> COVID-related,<sup>21,25,28</sup> non-COVID<sup>23</sup> and opioid overdose related mortality;<sup>27</sup> excess deaths;<sup>22</sup> COVID-19<sup>21,35</sup> and non-COVID-19<sup>23,25</sup> related hospitalizations; COVID-19 case counts<sup>29,30</sup> and medically-treated overdoses.<sup>24</sup> The four survey-based studies were focused on health related social needs including food-security,<sup>32</sup> anxiety and depression,<sup>33</sup> feelings of loneliness and sadness,<sup>34</sup> and social connection.<sup>31,34</sup>

**Study sample characteristics**—The fifteen included studies included over 86 million Medicare beneficiaries from the United States. No studies were specific to dual eligible beneficiaries, although Guo et al. did focus on dual eligibility as a major independent variable.<sup>30</sup> All studies included dual eligible beneficiaries, with the proportion of dual eligibles where reported ranging from 6.3%<sup>35</sup> to 72.5%.<sup>25</sup> Temkin-Greener et al. primarily examined ALCs and presented the demographics of the residents within those communities, of whom 32.9% were dual eligibles.<sup>29</sup> Guo et al. and Tarazi et al. did not include demographics table with information on the proportion of dual eligibles included in their studies, but did report outcomes for dual eligibles.<sup>22,30</sup> The age of participants varied across studies with most reporting age groups rather than mean or median age, with a plurality of participants less than 65,<sup>23,24,24,32</sup> between 65–69,<sup>21</sup> 65–74,<sup>26,31,34,35</sup> and aged 85 and older.<sup>22,25</sup> Three studies reported a mean value for age: 76.0 (SD: 11.1),<sup>29</sup> 49.3 (SD 12.5),<sup>32</sup> and 78.9 (SD 7.7).<sup>28</sup> Eleven studies included information on comorbid conditions, race/ethnicity, and an indicator for geographic residence location.<sup>21–29,32,34</sup> Friedman et al 2022, and Keeney et al., did not include information on comorbid conditions or an indicator for geographic residence location, Guo et al., did not include information on race/ethnicity, and Mehta et al., did not include an information for geographic residence location.

### Results of primary outcomes by study

While the study objectives and primary outcomes varied across all fifteen studies, nine studies<sup>21–23,25,26,30,32,33,35</sup> demonstrated that dual eligibles generally had poorer clinical and health related social need outcomes during COVID-19 as compared with non-dual eligible beneficiaries, while six<sup>24,27–29,31,34</sup> found that dual eligibles either had the same or better outcomes as non-dual eligibles.

**Results that show that dual eligible status is associated with worse health outcomes**—Case counts- One study found that ALCs with higher proportions of dual eligible minority residents were more likely to have a least one COVID-19 case (Odds Ratio (OR): 1.39 (95% CI: 1.03–1.88)), but there was no association with the number of COVID-19 cases ((OR: 1.20 (95% CI: 0.91–1.61)).<sup>30</sup>

Hospitalizations- Among the entire population of dual eligibles, one study found dual eligibles had two times the odds of being hospitalized with COVID-19 ((OR) 2.23 (2.08–2.39)),<sup>21</sup> a similar pattern was found for Medicare beneficiaries in nursing homes, with dual eligibility being associated with COVID-19 hospitalizations (HR: 1.19 (95% CI: 1.01–1.39)).<sup>25</sup> In a case-control study examining the efficacy of COVID-19 booster, Mehta et al., found that in both unadjusted rates and their adjusted model, dual eligibles were more likely to have a COVID-19 related hospitalization.<sup>35</sup> The unadjusted hospitalization rate per 1,000,000 person-days among dual eligibles was 41.01 (95% CI: 38.59–43.59), while the unadjusted rate among non-dual eligibles was 24.88 (95% CI: 24.38–25.39).

Mortality- Anderson et al., identified that both partial and full dual eligibles had worsening all-cause mortality both prior to and during the pandemic.<sup>26</sup> They found that from 2019–2020 during the pandemic, all-cause mortality had increased by 30.3% among full and partial dual eligibles versus an 11.8% increase in non-dual eligibles (2019 vs. 2016; full dual



eligible- Odds Ratio (OR): 1.004 (95% CI: 1.002, 1.006), partial dual eligible- OR: 1.022 (1.018, 1.026)) and during the pandemic (2020 vs. 2019; full dual eligible- OR: 1.303 (95% confidence interval (CI): 1.297, 1.309), partial dual eligible- OR: 1.191 (1.178, 1.205)). This was also seen in a study examining excess death- Tarazi et al. found dual eligible beneficiaries had a disproportionate share of excess deaths in 2020;<sup>22</sup> dual eligibles had a 52.6% share of the excess deaths while making up only 16.6% of Medicare fee-for-service (FFS) beneficiaries.

In terms of COVID-19 specific mortality, Izurieta et al. found that compared with the general population, beneficiaries who died with a COVID-19 diagnosis were more likely to be dual eligibles (29.0% vs 9.4%).<sup>21</sup> They also found that dual eligibles had increased odds of dying from COVID-19 (OR: 2.17 (95% CI: 1.92–2.44)). Dang et al., also found higher mortality among beneficiaries admitted to the hospital for non-COVID-19 diagnosis.<sup>23</sup> Dual eligibles were less likely to be admitted to the hospital during the COVID-19 pandemic compared with prior to the pandemic (26.7% vs 28.9%), their adjusted models found that they had a greater increase in mortality in the 30 days after admission in April 2020–September 2021 vs 2019 (OR: 1.25, 95% (CI: 1.24–1.27)) than non-dual eligibles (OR: 1.18, 95% (CI: 1.16–1.18)).

Health related social needs—One study found that dual eligibles had greater food insecurity--that compared to Medicare-only members with disabilities, dual eligibles with disabilities had less to eat in their household and had less confidence in accessing food.<sup>32</sup> Specifically, dual eligibles with disabilities were more likely to have enough, but not always the kinds of food they wanted (OR: 1.21 (95% CI: 1.08–1.36)), sometimes not enough to eat (OR: 1.46 (95% CI: 1.25–1.72)), and often not enough to eat (OR: 1.69 (95% CI: 1.30–2.21)). dual eligibles were more likely to not have enough food because they could not afford to buy it (OR: 1.16 (95% CI: 1.01–1.34)), or they could not get out to buy it (OR: 1.38 (95% CI: 1.19–1.61)). In a similar sample, dual eligibles with disabilities were more likely to exhibit symptoms of both anxiety (OR: 1.21 (95% CI: 1.11–1.32)) and depression (OR: 1.22 (95% CI: 1.12–1.33)) and to not get needed counseling therapy (OR: 1.32 (95% CI: 1.15–1.51)) than non-dual eligibles.<sup>33</sup>

**Results that show that dual eligible status has a favorable or non-significant relationship with health outcomes—**Case counts- In a study examining case counts in a n assisted living communities, the percentage of dual eligibles residing in assisted living communities was not associated with the presence of any COVID-19 infection (OR: 0.94 (95% CI: 0.88–1.01)) or count of COVID-19 cases (OR: 1.01 (95% CI: 0.99–1.03)) at the community level.<sup>29</sup>

Mortality-In patients enrolled in an accountable care organization, Keeney et al., found that dual eligibility was associated with better survival compared to non-dual eligibles in both unadjusted tests and adjusted (frailty, facility residence) models (unadjusted: log rank test,  $p=0.004$ ; adjusted hazard ratio (HR): 0.21 (95% CI: 0.1, 0.6)). In another study of nursing homes, dual eligibility was not associated with increased risk of death in adjusted models (HR: 1.11 (95% CI: 0.94–1.29)).<sup>25</sup> In looking at assisted living communities, Temkin-Greener et al. also found that assisted living communities with a higher percentage

of dual eligible residents had a lower likelihood of having at least one COVID-19 death (OR: 0.91 (95% CI: 0.84–0.99)), and that the percentage of dual eligibles was not associated with number of COVID-19 deaths ((OR: 0.97 (95% CI: 0.92–1.02)).<sup>29</sup> Two studies were specific to opioid use disorder one study found that among Medicare beneficiaries initiating opioid use disorder care during the pandemic, dual eligibles were less likely to experience a medically attended overdose (OR: 0.856 (95% CI: (0.814–0.900))<sup>24</sup> or experience a fatal overdose (OR: 1.30 (95% CI: 1.30 (0.97–1.74)).<sup>27</sup>

Health related social needs- Holaday et al., reported that 25.9% dual eligible beneficiaries reported experiencing loneliness or sadness compared to 22.5% of non-dual eligible beneficiaries with no difference between the two groups in adjusted models.<sup>34</sup> Additionally, they found that 26.9% of dual eligible beneficiaries reported feeling socially disconnected compared to 37.9% of Medicare only beneficiaries, with no difference between the two groups in adjusted models. Similar results were seen in another study which reported that in unadjusted models, 38.1% of non-dual eligibles reported decreased social connectedness compared to 26.6% of fully dual eligibles, 31.2% of partially dual eligibles, and 30.7% of Medicare beneficiaries, who were low income, but do not receive Medicaid.<sup>31</sup> In their adjusted model, dual eligibles were less likely to report having decreased social connectedness (predicted probability: 28.6% (95% CI: 23.5%–33.7%)) when compared to non-dual eligible beneficiaries (predicted probability: 38.1%; (95% CI: 36.5%–39.6%)).

## DISCUSSION

In this comprehensive scoping review of fifteen studies including dual eligible populations and their COVID-19 health and health related social needs outcomes, we found that dual eligible status was not consistently associated with unfavorable health outcomes during the COVID-19 pandemic. Results very much dependent on the outcome in question- while four studies showed either higher excess deaths,<sup>22</sup> all-cause<sup>26</sup> and COVID-19 related mortality (including generally<sup>21</sup> and after hospitalization<sup>23</sup>), particular groups of patients including those in an accountable care organization,<sup>28</sup> nursing homes<sup>25</sup> and assisted living community residents<sup>29</sup> did not. Similarly, when looking at opioid overdose rate, dual eligibles had more favorable outcomes with lower likelihood of experiencing a medically attended overdose,<sup>24</sup> and no difference in the odds of fatal overdose.<sup>27</sup> While studies were limited, dual eligible status was associated with both positive and negative health related social needs that differed by the population of dual eligibles. Dual eligibles with disabilities were more likely to report both food insecurity<sup>32</sup> and symptoms of anxiety and depression<sup>33</sup> while the general population of dual eligibles had higher levels of social connectedness and lower levels of social isolation.<sup>31,34.</sup>

These data suggest that while dual eligible beneficiaries may have increased vulnerability to disease and challenges accessing care, these individuals may modify these risks through positive health behaviors such as social connectedness and preventative services including vaccination. Although not specifically mentioned in the fifteen reviewed studies, integrative programs to serve dual eligibles residing at home and proactive facility staff in assisted living may have raised awareness of increased vulnerability to diseases in the dual eligible population and may have made efforts to reduce unfavorable health outcomes.



The pandemic reinforced and worsened preexisting disparities among marginalized and vulnerable populations, including dual eligibles. Social risk factors such as air pollution levels, as well as housing and food insecurity are positively correlated with both dual eligible status and healthcare utilization.<sup>36</sup> Therefore, our finding that dual eligibles reported more food insecurity during the pandemic is not surprising.<sup>32</sup> Social connectedness was reported as higher among dual eligibles in our two reviewed study than in those with only Medicare.<sup>31,34</sup> Although it is well established that dual eligibles have higher unmet social needs than similar age cohorts and non-dual eligibles, our search found only four articles reporting on social determinants of health, with two of the four exclusively focusing on dual-eligibles with disabilities. Additional research, both in general and in the context of COVID-19, is needed to better address the often intertwined medical and social needs of this high-cost high-need population.<sup>37,38</sup> We also did not find many articles on dual eligibles in long-stay nursing homes, another area deserving of further research.

Although this is the only US based comprehensive scoping review evaluating outcomes in dual eligibles during the COVID-19 pandemic, our study has limitations. First, populations and outcomes measured varied by study and thus it is challenging to make conclusions about all dual eligibles. For instance, we found inconsistent results on mortality, but this could be due to differences in residence status (facility-based care or not). Second, we aimed to evaluate the impact of integrated health plans and managed plans on COVID-19 health outcomes, but there was insufficient published data on the performance of these plans. Third, our included studies on social connectedness, and food insecurity were surveys, and are subject to sampling and acquiescence bias. Fourth, multiple studies used claims data to analyze COVID-19 cases, hospitalizations, and deaths. While claims data is generally adequate for capturing these sorts of events, it is not always comprehensive.

Dual eligible populations may have increased vulnerability to the COVID-19 pandemic and future public health crises, but risks may be mitigated through targeted intervention services. To address disparities between dual eligibles and non-dual eligibles moving forward, these populations will require additional support to reduce risks. Integrated plans, including dual special needs plans and Medicare-Medicaid plans theoretically may help ensure coordination of services, including addressing both medical and health-related social needs.<sup>39</sup> But these programs are still in their infancy, as seen by the lack of articles included in this scoping review, and there has been slow uptake by states due to a lack of incentives for expansion of these programs.<sup>40</sup> A 2021 report by the U.S. Department of Health and Human Services highlights the lack of accurate and timely utilization data submitted by the managed care plans. This scarcity of comparative outcome data has resulted in the need for more research to evaluate the effectiveness and increase incentivization of these programs.<sup>41</sup>

The finding that dual eligibles have increased food insecurity, while not unexpected given the dual eligible population, points to the need for innovative and integrated efforts to address health-related social needs. Providing access to food through meal delivery programs ensures access to food for dual eligibles who may be more medically fragile, lack transportation, or have mobility challenges, while also reducing healthcare utilization.<sup>42</sup> Broader efforts to address social determinants of health including access to care, affordable

housing, and improvement in environmental quality may all benefit and support dual eligibles moving forward.<sup>36,43</sup>

## CONCLUSIONS AND IMPLICATIONS

To improve care and services for dual eligibles during the continuing COVID-19 pandemic and in future public health emergencies, we must fully understand their needs and their clinical outcomes. However, we found no studies specifically examining this population, and few that reported on differential outcomes in dual eligibles compared to non-dual eligible Medicare beneficiaries. Included studies focused on health outcomes such as mortality and hospitalizations, as well as social factors such as connectedness and food insecurity. While these results suggest that dual eligibility alone may not predict worse outcomes in health and quality of life measures, further research is needed to better characterize the challenges faced by dual eligibles and shape specific programmatic efforts to address disparities.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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## REFERENCES

1. Dukhovnov D, Barbieri M. County-level socio-economic disparities in COVID-19 mortality in the USA. *International Journal of Epidemiology*. 2022;51(2):418–428. doi:10.1093/ije/dyab267 [PubMed: 34957523]
2. Liao TF, De Maio F. Association of Social and Economic Inequality With Coronavirus Disease 2019 Incidence and Mortality Across US Counties. *JAMA Network Open*. 2021;4(1):e2034578. doi:10.1001/jamanetworkopen.2020.34578 [PubMed: 33471120]
3. Tan AX, Hinman JA, Abdel Magid HS, Nelson LM, Odden MC. Association Between Income Inequality and County-Level COVID-19 Cases and Deaths in the US. *JAMA Network Open*. 2021;4(5):e218799. doi:10.1001/jamanetworkopen.2021.8799 [PubMed: 33938935]
4. Pan W, Miyazaki Y, Tsumura H, Miyazaki E, Yang W. Identification of county-level health factors associated with COVID-19 mortality in the United States. *J Biomed Res*. 2020;34(6):437–445. doi:10.7555/JBR.34.20200129 [PubMed: 33109778]
5. COVID-19 Hospitalizations. Accessed September 26, 2022. [https://gis.cdc.gov/grasp/COVIDNet/COVID19\\_3.html](https://gis.cdc.gov/grasp/COVIDNet/COVID19_3.html)
6. Provisional COVID-19 Deaths by Sex and Age | Data | Centers for Disease Control and Prevention. [Data.CDC.gov](https://data.cdc.gov/NCHS/Provisional-COVID-19-Deaths-by-Sex-and-Age/9bhg-hcku). Accessed September 26, 2022. <https://data.cdc.gov/NCHS/Provisional-COVID-19-Deaths-by-Sex-and-Age/9bhg-hcku>
7. Lebrasseur A, Fortin-Bédard N, Lettre J, et al. Impact of the COVID-19 Pandemic on Older Adults: Rapid Review. *JMIR Aging*. 2021;4(2):e26474. doi:10.2196/26474 [PubMed: 33720839]
8. Miller EA. Protecting and Improving the Lives of Older Adults in the COVID-19 Era. *Journal of Aging & Social Policy*. 2020;32(4–5):297–309. doi:10.1080/08959420.2020.1780104 [PubMed: 32583751]
9. Shakespeare T, Ndagire F, Seketi QE. Triple jeopardy: disabled people and the COVID-19 pandemic. *The Lancet*. 2021;397(10282):1331–1333. doi:10.1016/S0140-6736(21)00625-5
10. Dually Eligible Beneficiaries. MACPAC. Accessed August 21, 2022. <https://www.macpac.gov/topics/dually-eligible-beneficiaries/>

11. Congressional Budget Office. Dual-Eligible Beneficiaries of Medicare and Medicaid: Characteristics, Health Care Spending, and Evolving Policies.; :45.
12. CMS Medicare-Medicaid Coordination Office. People Dually Eligible for Medicare and Medicaid (Fact Sheet). [https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Downloads/MMCO\\_Factsheet.pdf](https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Downloads/MMCO_Factsheet.pdf)
13. Kaye HS, Harrington C. Long-term services and supports in the community: Toward a research agenda. *Disability and Health Journal*. 2015;8(1):3–8. doi:10.1016/j.dhjo.2014.09.003 [PubMed: 25445015]
14. Govender A, Mohanty SA, Bynum J, Iyengar V. Protecting the Medically Vulnerable Amid COVID-19: Insights from the Dually Eligible Population in the United States. *NAM Perspect*. 2021:10.31478/202107c. doi:10.31478/202107c
15. Long CL, Franklin SM, Hagan AS, et al. Health-Related Social Needs Among Older Adults Enrolled In Medicare Advantage. *Health Affairs*. 2022;41(4):557–562. doi:10.1377/hlthaff.2021.01547 [PubMed: 35377752]
16. Peikes DN, Swankoski KE, Rastegar JS, Franklin SM, Pavliv DJ. Burden Of Health-Related Social Needs Among Dual- And Non-Dual-Eligible Medicare Advantage Beneficiaries. *Health Affairs*. 2023;42(7):899–908. doi:10.1377/hlthaff.2022.01574 [PubMed: 37406240]
17. Bleser WK, Tchuisseu YP, Shen H, et al. ACO REACH And Advancing Equity Through Value-Based Payment, Part 2. *Health Affairs Forefront*. Published online May 18, 2022. doi:10.1377/forefront.20220517.755520
18. The Joanna Briggs Institute. Joanna Briggs Institute Reviewers' Manual: 2015 edition / Supplement. Published online 2015. Accessed December 20, 2022. <https://nursing.lsuhscc.edu/jbi/docs/reviewersmanuals/scoping-.pdf>
19. Janke AT, Mei H, Rothenberg C, Becher RD, Lin Z, Venkatesh AK. Analysis of Hospital Resource Availability and COVID-19 Mortality Across the United States. *J Hosp Med*. 2021;16(4):211–214. doi:10.12788/jhm.3539 [PubMed: 33496664]
20. Wu H, Soe MM, Konnor R, et al. Hospital capacities and shortages of healthcare resources among US hospitals during the coronavirus disease 2019 (COVID-19) pandemic. *National Healthcare Safety Network (NHSN)*, March 27–July 14, 2020. *Infect Control Hosp Epidemiol*.:1–4. doi:10.1017/ice.2021.280
21. Izurieta HS, Graham DJ, Jiao Y, et al. Natural History of Coronavirus Disease 2019: Risk Factors for Hospitalizations and Deaths Among >26 Million US Medicare Beneficiaries. *The Journal of Infectious Diseases*. 2021;223(6):945–956. doi:10.1093/infdis/jiaa767 [PubMed: 33325510]
22. Tarazi WW, Finegold K, Sheingold SH, Wong Samson L, Zuckerman R, Bosworth A. COVID-19-Related Deaths And Excess Deaths Among Medicare Fee-For-Service Beneficiaries. *Health Affairs*. 2021;40(6):879–885. doi:10.1377/hlthaff.2020.02521 [PubMed: 34097514]
23. Dang A, Thakker R, Li S, Hommel E, Mehta HB, Goodwin JS. Hospitalizations and Mortality From Non-SARS-CoV-2 Causes Among Medicare Beneficiaries at US Hospitals During the SARS-CoV-2 Pandemic. *JAMA Netw Open*. 2022;5(3):e221754. doi:10.1001/jamanetworkopen.2022.1754 [PubMed: 35262712]
24. Jones CM, Shoff C, Hodges K, et al. Receipt of Telehealth Services, Receipt and Retention of Medications for Opioid Use Disorder, and Medically Treated Overdose Among Medicare Beneficiaries Before and During the COVID-19 Pandemic. *JAMA Psychiatry*. 2022;79(10):981–992. doi:10.1001/jamapsychiatry.2022.2284 [PubMed: 36044198]
25. Lu Y, Jiao Y, Graham DJ, et al. Risk Factors for COVID-19 Deaths Among Elderly Nursing Home Medicare Beneficiaries in the Prevacine Period. *J Infect Dis*. 2022;225(4):567–577. doi:10.1093/infdis/jiab515 [PubMed: 34618896]
26. Anderson KK, Maresh S, Ward A, et al. The COVID-19 pandemic's impact on all-cause mortality disparities in Medicare: By race, income, chronic health, mental/behavioral health, disability. *Gen Hosp Psychiatry*. 2023;81:57–67. doi:10.1016/j.genhosppsych.2023.01.013 [PubMed: 36805333]
27. Jones CM, Shoff C, Blanco C, Losby JL, Ling SM, Compton WM. Association of Receipt of Opioid Use Disorder-Related Telehealth Services and Medications for Opioid Use Disorder With Fatal Drug Overdoses Among Medicare Beneficiaries Before

- and During the COVID-19 Pandemic. *JAMA Psychiatry*. 2023;80(5):508–514. doi:10.1001/jamapsychiatry.2023.0310 [PubMed: 36988913]
28. Keeney T, Flom M, Ding J, et al. Using a Claims-Based Frailty Index to Investigate Frailty, Survival, and Healthcare Expenditures among Older Adults Hospitalized for COVID-19 at an Academic Medical Center. *J Frailty Aging*. 2023;12(2):150–154. doi:10.14283/jfa.2023.15 [PubMed: 36946713]
  29. Temkin-Greener H, Guo W, Mao Y, Cai X, Li Y. COVID-19 Pandemic in Assisted Living Communities: Results from Seven States. *Journal of the American Geriatrics Society*. 2020;68(12):2727–2734. doi:10.1111/jgs.16850 [PubMed: 32955107]
  30. Guo W, Li Y, Temkin-Greener H. Coronavirus disease 2019 (COVID-19) in assisted living communities: Neighborhood deprivation and state social distancing policies matter. *Infect Control Hosp Epidemiol*. 2022;43(8):1004–1009. doi:10.1017/ice.2022.46 [PubMed: 35189992]
  31. Talcott WJ, Yu JB, Gross CP, Park HS. Social Connectedness Among Medicare Beneficiaries Following the Onset of the COVID-19 Pandemic. *JAMA Internal Medicine*. 2021;181(9):1245–1248. doi:10.1001/jamainternmed.2021.2348 [PubMed: 34047760]
  32. Friedman C Food insecurity of people with disabilities who were Medicare beneficiaries during the COVID-19 pandemic. *Disabil Health J*. 2021;14(4):101166. doi:10.1016/j.dhjo.2021.101166 [PubMed: 34272190]
  33. Friedman C The mental health of Medicare beneficiaries with disabilities during the COVID-19 pandemic. *Rehabilitation Psychology*. 2022;67(1):20–27. doi:10.1037/rep0000427 [PubMed: 34748364]
  34. Holaday LW, Oladele CR, Miller SM, Dueñas MI, Roy B, Ross JS. Loneliness, sadness, and feelings of social disconnection in older adults during the COVID-19 pandemic. *Journal of the American Geriatrics Society*. 2022;70(2):329–340. doi:10.1111/jgs.17599 [PubMed: 34850379]
  35. Mehta HB, Li S, Goodwin JS. Effectiveness of COVID-19 Booster on the Risk of Hospitalization Among Medicare Beneficiaries. *Mayo Clin Proc*. 2022;97(10):1780–1793. doi:10.1016/j.mayocp.2022.06.029 [PubMed: 36202492]
  36. Alberti PM, Baker MC. Dual eligible patients are not the same. *Medicine (Baltimore)*. 2020;99(38):e22245. doi:10.1097/MD.00000000000022245 [PubMed: 32957371]
  37. Archibald N, Soper M. COVID-19's Effect on Dually Eligible Populations - CHCS Blog. Published online November 2, 2020. Accessed January 16, 2023. <https://www.chcs.org/covid-19s-effect-on-dually-eligible-populations/>
  38. Mir A More Research is Essential to Improve Care for Dual-Eligible Beneficiaries | AcademyHealth. Published July 1, 2021. Accessed January 16, 2023. <https://academyhealth.org/blog/2021-07/more-research-essential-improve-care-dual-eligible-beneficiaries>
  39. Leavitt MO. COVID-19 Shows Now Is The Time To Integrate Care For Dual-Eligible Beneficiaries. *Health Affairs Forefront*. Published online February 17, 2021. doi:10.1377/forefront.20210211.45136
  40. Keohane LM, Hwang A. Integrating Medicare And Medicaid For Dual-Eligible Beneficiaries Through Managed Care: Proposed 2023 Medicare Advantage Regulations. *Health Affairs Forefront*. Published online February 24, 2022. doi:10.1377/forefront.20220218.251565
  41. Feng Z, Wang J, Gadaska A, et al. Comparing Outcomes for Dual Eligible Beneficiaries in Integrated Care: Final Report. RTI International; 2021.
  42. Berkowitz SA, Terranova J, Hill C, et al. Meal Delivery Programs Reduce The Use Of Costly Health Care In Dually Eligible Medicare And Medicaid Beneficiaries. *Health Affairs*. 2018;37(4):535–542. doi:10.1377/hlthaff.2017.0999 [PubMed: 29608345]
  43. Alberti PM, Lantz PM, Wilkins CH. Equitable Pandemic Preparedness and Rapid Response: Lessons from COVID-19 for Pandemic Health Equity. *J Health Polit Policy Law*. 2020;45(6):921–935. doi:10.1215/03616878-8641469 [PubMed: 32464654]

**Table 1:**

## Key words and definitions

<b>Medicare</b>	Medicare is the federal health insurance program for people who are 65 or older, certain younger people with disabilities and people with End-Stage Renal Disease.
<b>Medicaid</b>	Medicaid allows for health insurance coverage through several vehicles and over a continuum of settings, ranging from institutional care to community-based long-term services and supports (LTSS).
<b>Dual eligibles (DEs)</b>	People who receive Medicare (based on age or disability) who are also low income and thus eligible for Medicaid
<b>Full dual eligibles</b>	The 73% of dual eligibles who meet criteria for both Medicare and Medicaid services and can receive the full range of Medicaid benefits such as long terms services and supports
<b>Partial dual eligibles</b>	Partial dual eligibles are low income individuals who are not otherwise eligible for full benefit Medicaid where Medicaid pays their Part A and if needed Part B Medicare premiums
<b>Home and community-based services (HCBS)</b>	HCBS provide opportunities for Medicaid beneficiaries to receive services in their own home or community rather than institutions or other isolated settings.

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**Table 2:** Characteristics of studies relevant to COVID-19 clinical outcomes included in the scoping review

Study	Year published	Measures	Study population	Study design	Findings
Anderson et al.	2023	All-cause mortality (prior to and during 1 <sup>st</sup> year of COVID)	~33 million FFS Medicare beneficiaries	Retrospective cohort study using claims data	<ul style="list-style-type: none"> <li>Both partial and full DEs had worsening all cause mortality both prior to the pandemic (2019 vs. 2016; full- OR: 1.004 (95% CI: 1.002, 1.006), partial- OR: 1.022 (95% CI: 1.018, 1.026)) and during the pandemic (2020 vs. 2019; full- OR: 1.303 (95% CI: 1.297, 1.309), partial- OR: 1.191 (95% CI: 1.178, 1.205)), with greater worsening during the pandemic</li> </ul>
Dang et al.	2022	Hospitalizations for non-COVID reasons and mortality in 30 days after non-COVID hospital admission in 2019 vs April 2020-September 2021	8.4 million Medicare beneficiaries with a non-COVID admission at 4626 US hospitals	Retrospective cohort study using claims data	<ul style="list-style-type: none"> <li>DEs were less likely to be admitted to the hospital during COVID-19 than prior to the pandemic (26.7% vs 28.9%)</li> <li>DEs had a greater increase in mortality in the 30 days after admission in April 2020-September 2021 vs 2019 (OR: 1.25, 95% CI: 1.24-1.27) than non-DEs (OR: 1.18, 95% CI: 1.16-1.18) in models adjusted for patient, hospital and admission characteristics</li> </ul>
Guo et al.	2022	Presence/number of COVID-19 confirmed cases per ALC	Medicare beneficiaries residing in 2,854 ALCs in five states	Retrospective claims study of ALCs	<ul style="list-style-type: none"> <li>ALCs with higher proportions of DE minority residents were more likely to have a least one COVID-19 case (OR: 1.39 (95% CI: 1.03-1.88)), but there was no association with the number of COVID-19 cases ((OR: 1.20 (95% CI: 0.91-1.61))</li> </ul>
Izurrieta et al.	2021	COVID-19 hospitalizations and deaths ORs of hospitalizations and death among those with COVID 19	25 million Medicare FFS beneficiaries not in a nursing home and not having ESRD	Retrospective cohort study using claims data	<ul style="list-style-type: none"> <li>DEs made up 9.4% of beneficiaries and made up 29% of hospitalizations and 30.4% of deaths</li> <li>Among those with a COVID-19, DEs (versus non-DEs) had an OR of 2.17 (95% CI: 1.92-2.44) of death and an OR of 2.23 (95% CI: 2.08-2.39) of hospitalization; effect of DE varied by age and race</li> </ul>
Jones et al.	2022	Medically attended overdoses	70,497 Medicare FFS beneficiaries who initiated OUD treatment during COVID-19	Retrospective cohort study using claims data	<ul style="list-style-type: none"> <li>Among Medicare beneficiaries initiating OUD care during the pandemic, DEs were not less likely to experience a medically attended overdose (OR: 0.856(95% CI: 0.814-0.900))</li> </ul>
Jones et al.	2023	Fatal overdoses	70,497 Medicare FFS beneficiaries who initiated OUD treatment during COVID-19	Retrospective cohort study using claims data	<ul style="list-style-type: none"> <li>Among Medicare beneficiaries initiating OUD care during the pandemic, DEs were not more likely to experience a fatal overdose (OR: 1.30 (95% CI: 1.30 (0.97-1.74))</li> </ul>
Keeney et al.	2023	Survival after COVID-19 hospitalization	136 patients enrolled in an accountable care organization hospitalized for COVID-19	COVID-19 registry with claims data	<ul style="list-style-type: none"> <li>Dual eligibility was associated with better survival compared to non-DEs in both unadjusted tests and adjusted (frailty, NH/ALC residence) models (unadjusted: log rank <math>p=0.004</math>; adjusted HR: 0.21 (95% CI: 0.1, 0.6))</li> </ul>
Lu et al.	2022	COVID-19 hospitalization and death	608,251 Medicare beneficiaries 65 or older residing in a nursing home	Retrospective cohort study using claims data	<ul style="list-style-type: none"> <li>In multivariate Cox models adjusted for patient and facility level characteristics and geography, dual eligibility at the median age in the study participants was associated with COVID-19 hospitalization (HR: 1.19 (95% CI: 1.01-1.39), but not with death (HR:1.11 (95% CI: 0.94-1.29))</li> </ul>
Mehta et al.	2022	COVID-19 hospitalizations and booster effectiveness	3,940,475 Medicare beneficiaries who had received a COVID-19 booster matched to the same number of controls who had not	Case control study using claims data	<ul style="list-style-type: none"> <li>In both unadjusted rates and an adjusted model including patient characteristics and receiving a booster DEs were more likely to have a COVID-19 related hospitalization (unadjusted DE: 41 hospitalizations per 100,000 person-days; non-DE: 25 hospitalizations per 100,000 person days-adjusted HR: 1.49 (95% CI: 1.39-1.60))</li> </ul>



Study	Year published	Measures	Study population	Study design	Findings
Tarazi et al.	2021	2020 excess deaths	Medicare FFS beneficiaries from 2015–2020 with Medicare part A and B (including ESRD and NH)	Retrospective cohort study using claims data	<ul style="list-style-type: none"> <li>• Booster vaccine effectiveness in preventing hospitalization was lower in DEs (76 (95% CI:72–79)) than non DEs (82 (95% CI:81–83))</li> <li>• DEs comprised 52.6% of excess deaths, but only 16.6% of FFS beneficiaries</li> </ul>
Temkin-Greener et al.	2020	Presence/number of COVID-19 confirmed cases and deaths per ALC	Medicare beneficiaries residing in 3,994 ALCs in seven states	Retrospective claims study of ALCs	<ul style="list-style-type: none"> <li>• In adjusted models, percentage of DEs in ALCs not associated with either the presence (OR: 0.944 (95% CI: 0.88–1.01)) or count of cases (at an individual)(OR: 1.009 (95% CI: 0.99–1.03)) at an ALC</li> <li>• Higher percent of DEs associated with decreased likelihood of having at least one death (OR:0.911 (95% CI: 0.84–0.99)), but not associated with the actual number of deaths (OR: 0.969 (95% CI: 0.92–1.02))</li> </ul>

ALC: Assisted Living Communities; CI: Confidence Interval; DE: Dual Eligible; FFS: Fee For Service; OR: Odds Ratio; PWD: People with Disabilities;

Characteristics of studies relevant to health-related social needs included in the scoping review

Table 3:

Study	Year published	Measures	Study population	Study design	Findings
Friedman	2021	Food Insecurity	70,171 persons with disabilities who were Medicare members under the age of 65 surveyed using US Census Bureau's COVID-19 Household Pulse Survey	Cross sectional survey data	<ul style="list-style-type: none"> <li>Compared to PWD who were Medicare only members, DEs who were PWDs were more likely to be only somewhat confident (OR: 1.48 (95% CI: 1.24–1.76)) or not at all confident (OR: 1.62 (95% CI: 1.30–2.03)) in food sufficiency in the next four weeks</li> </ul>
Friedman	2021	Mental health- positive screen for anxiety, depression and unmet need for counseling/therapy	65,369 persons with disabilities who were identified as Medicare members under the age of 65 surveyed using US Census Bureau's COVID-19 Household Pulse Survey	Cross sectional survey data	<ul style="list-style-type: none"> <li>DEs more likely to exhibit symptoms of both anxiety (OR: 1.21 (95% CI: 1.11–1.32)) and depression (OR: 1.22 (95% CI: 1.12–1.33)) and to not get needed counseling therapy (OR: 1.32 (95% CI: 1.15–1.51)) than non-dual eligibles</li> </ul>
Holaday et al.	2022	Self-reports of loneliness or sadness; social connection	8,125 Medicare beneficiaries surveyed from the Summer 2020 Medicare Current Beneficiary Survey COVID-19 Supplement	Cross sectional survey data	<ul style="list-style-type: none"> <li>25.9% of full Medicaid beneficiaries reported loneliness or sadness compared to 22.5% of Medicare only beneficiaries; no difference in adjusted models</li> <li>26.9% of full Medicaid beneficiaries reported feelings of social disconnection compared to 37.9% of Medicare only beneficiaries; no difference in adjusted models</li> </ul>
Talcoot et al.	2021	Social Connectedness	9,634 Medicare beneficiaries surveyed from the Summer 2020 Medicare Current Beneficiary Survey COVID-19 Supplement	Cross sectional survey data	<ul style="list-style-type: none"> <li>DEs were less likely to feel decreased social connectedness than non-DEs in both bivariate and multivariable analyses; 38.1% of non-DEs reported decreased social connectedness compared to 26.6% of fully DEs, and 31.2% of partially DEs.</li> <li>In an adjusted model, fully DEs were less likely to feel socially isolated</li> </ul>

ALC: Assisted Living Communities; CI: Confidence Interval; DE: Dual Eligible; FFS: Fee For Service; OR: Odds Ratio; PWD: People with Disabilities