

ORIGINAL RESEARCH

Geriatrics

COVID-19 hospital and emergency department visitor policies in the United States: Impact on persons with cognitive or physical impairment or receiving end-of-life care

Alexander X. Lo MD, PhD^{1,2} | Logan K. Wedel MD¹ | Shan W. Liu MD, SD^{3,4} |
 Thiti Wongtangman MD^{3,5} | Phraewa Thatphet MD^{3,6} | Ilianna Santangelo BA³ |
 Anita N. Chary MD, PhD⁷ | Paul D. Biddinger MD^{3,4,8} | Corita R. Grudzen MD, MSHS⁹ |
 Maura Kennedy MD, MPH^{3,4}

¹ Department of Emergency Medicine, Northwestern University Feinberg School of Medicine, Chicago, Illinois, USA

² Center for Health Services & Outcomes Research, Northwestern University Feinberg School of Medicine, Chicago, Illinois, USA

³ Department of Emergency Medicine, Massachusetts General Hospital, Boston, Massachusetts, USA

⁴ Department of Emergency Medicine, Harvard Medical School, Boston, Massachusetts, USA

⁵ Department of Emergency Medicine, Lerdsin General Hospital, Bangkok, Thailand

⁶ Department of Emergency Medicine, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

⁷ Departments of Medicine and Emergency Medicine, Baylor College of Medicine

⁸ Mass General Brigham, Boston, Massachusetts, USA

⁹ Ronald O. Perelman Department of Emergency Medicine and Department of Population Health, NYU Grossman School of Medicine, New York, New York, USA

Correspondence

Alexander X. Lo, MD PhD, Northwestern University, Department of Emergency Medicine, 211 E. Ontario Street, Suite 200, Chicago IL, 60611, USA.

Email: alexander.lo@northwestern.edu

Funding and support: By *JACEP Open* policy, all authors are required to disclose any and all commercial, financial, and other relationships in any way related to the subject of this article as per ICMJE conflict of interest guidelines (see www.icmje.org). The authors have stated that no such relationships exist.

See related editorial: [10.1002/emp2.12659](https://doi.org/10.1002/emp2.12659)

Abstract

Objective: To characterize the national distribution of COVID-19 hospital and emergency department visitor restriction policies across the United States, focusing on patients with cognitive or physical impairment or receiving end-of-life care.

Methods: Cross-sectional study of visitor policies and exceptions, using a nationally representative random sample of EDs and hospitals during the first wave of the COVID-19 pandemic, by trained study investigators using standardized instrument.

Results: Of the 352 hospitals studied, 326 (93%) had a COVID-19 hospital-wide visitor restriction policy and 164 (47%) also had an ED-specific policy. Hospital-wide policies were more prevalent at academic than non-academic (96% vs 90%; $P < 0.05$) and at urban than rural sites (95% vs 84%; $P < 0.001$); however, the prevalence of ED-specific policies did not significantly differ across these site characteristics. Geographic region was not associated with the prevalence of any visitor policies. Among all study sites, only 58% of hospitals reported exceptions for patients receiving end-of-life care, 39% for persons with cognitive impairment, and 33% for persons with physical impairment,

Supervising Editor: Catherine Marco, MD

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. *JACEP Open* published by Wiley Periodicals LLC on behalf of American College of Emergency Physicians

and only 12% provided policies in non-English languages. Sites with ED-specific policies reported even fewer exceptions for patients with cognitive impairment (29%), with physical impairments (24%), or receiving end-of-life care (26%).

Conclusion: Although the benefits of visitor policies towards curbing COVID-19 transmission had not been firmly established, such policies were widespread among US hospitals. Exceptions that permitted family or other caregivers for patients with cognitive or physical impairments or receiving end-of-life care were predominantly lacking, as were policies in non-English languages.

KEYWORDS

COVID-19, dementia, disability, end-of-life, health disparities, older adults, visitor policy

1 | INTRODUCTION

1.1 | Background and significance

The coronavirus disease 2019 (COVID-19) pandemic has inflicted a disproportionately heavier toll on older persons.^{1,2} In the United States, adults ≥ 65 years old accounted for $\sim 15\%$ of cases but $> 80\%$ of deaths in 2020.¹ In many countries, older persons who avoided or survived COVID-19 still faced an increased risk of physical deconditioning, cognitive decline, or increased care needs amid social restrictions and community lockdowns.²⁻⁴ Several public health and hospital responses to COVID-19, such as social distancing, reductions in community programs, or care rationing, were unduly harmful to older persons.⁵⁻⁷ Hospital visitor restriction policies have also been adopted in response to COVID-19, but their prevalence and impact have not been well studied. These policies restrict or prevent caregivers from accompanying dependent older adults in the hospital⁸ and may be especially detrimental to patients with cognitive^{9,10} or physical impairment⁴ or receiving end-of-life care,^{11,12} particularly in times of emergency care or unavoidable hospitalization.

1.2 | Objective of this study

Our objective was to determine the scope of COVID-19 hospital visitor policies and exceptions across the United States, as they relate to patients with cognitive or physical impairment or end-of-life care, seeking emergency care or requiring hospitalization, and whether these policies were accessible to non-English speakers.

2 | METHODS

2.1 | Overview

This was an observational cross-sectional study to characterize the prevalence of hospital visitor policies and their exceptions in response to the COVID-19 pandemic using a nationally representative random

sample of US hospitals and their emergency departments. Data on visitor policies and exceptions were collected via web-based query of publicly available information posted on hospital websites. The study was conducted from June to September 2020, during the height of the first wave of the COVID-19 pandemic in the United States. The institutional review board at Massachusetts General Hospital determined that this study did not meet criteria for human subjects research.

2.2 | Study sites

To capture the care experience of patients requiring emergency care and unavoidable hospitalization, we designed our sampling scheme a priori to include only care facilities that comprised both an ED and an attached hospital (in this study, any facility comprising an ED and hospital are referred to as "sites"). Freestanding EDs (emergency facilities that are functionally and physically separated from inpatient services¹³) and urgent care clinics were excluded. Hospitals without an ED were also excluded from the sample. This study used a stratified random sample of US academic and non-academic sites from the 50 US states and District of Columbia (DC).

2.3 | Sampling approach

For academic EDs, we randomly selected a minimum of 50% of all Accreditation Council for Graduate Medical Education accredited emergency medicine residency programs within each state, with a minimum of 1 ED per state to ensure representation by every state and DC.

We identified non-academic ED and hospitals using the National Emergency Department Inventories (NEDI-USA) database, which includes data on all non-federal, non-specialty US EDs.¹⁴ EDs and hospitals not included in this database include the Veterans Administration facilities and atypical emergency facilities with selected patient populations, such as specialized emergency or acute care units at dedicated cancer care hospitals.¹⁵ Based on 2018 NEDI-USA data, the number of US EDs per state range from a minimum of 9 (DC) to a maximum of

815 (Texas). Four states (Ohio, Florida, California, and Texas) reported more than 200 EDs each.

In order to avoid a disproportionate influence by the far greater numbers of non-academic sites in the United States, or by more populous states that have greater numbers of sites, we planned a priori to sample approximately equal numbers of academic and non-academic sites with a minimum of 3 non-academic sites per state. This was achieved by a random sample of 3% of all non-academic sites.

2.4 | Data collection

Data were collected by trained study investigators using a standardized protocol and instrument. At the outset, the lead study investigators (AXL and MK) developed a standardized training program for investigators (TW, PT, and IS) using a training data set with 5 randomly chosen study sites that were not included in this study.

For each site, study investigators searched for a publicly available website using common publicly available web search engines to mimic the expected approach any individual would undertake when researching visitor policies at a particular ED or hospital. Search terms included [name of ED/hospital], ["visit" or "visitor" or "visitor policy" or "visitor policies"] and ["COVID," "COVID-19," or "coronavirus"].

Whenever web-based visitor policy information was unavailable on the website, study investigators contacted that site to obtain data via telephone communication with individual hospitals through publicly listed telephone numbers and using a standardized telephone interview script (Appendix 1). Data from 34 (14 academic and 20 non-academic) sites were obtained in this manner. If a COVID-specific policy existed, the study investigator asked to have the policy read verbatim or sent via email or fax to avoid having the respondent contextualize or interpret the visitor policy.

By design, this study did not distinguish if the visitor or patient has a COVID-19 diagnosis, because during the study period, COVID-19 testing across the United States had variable availability and the accuracy of available tests had not been established. Therefore, any categorization of visitor policies by COVID-19 status may invite the risk of misclassification because of the challenges of validating COVID-19 diagnoses.

2.5 | Study variables and outcome measures

The main outcome measures included any hospital or ED visitor policy related to COVID-19 and any reported exceptions pertaining to patients with cognitive or physical impairment or receiving end-of-life care, and children (ie, patients <18 years of age), with the latter serving as a control measure. Data on the languages in which the policies were reported were also collected.

Each site was geographically classified by US Census Bureau Region (Northeast, Midwest, South, or West)¹⁶ and by rural or urban designation based on US Department of Agriculture Urban Influence Codes categories,^{17,18} where category 1 was large metropolitan with ≥ 1

The Bottom Line

The COVID-19 pandemic has posed important questions regarding patient visitors. Although visitors are important to patients' health and recovery, additional questions about infectious risks to patients, visitors, and staff must be considered. This study investigated the national distribution of COVID-19 hospital and emergency department visitor restriction policies across the United States and found that visitor restriction policies were widespread among US hospitals. Some exceptions permitted family or other caregivers for patients with cognitive or physical impairments or end-of-life care.

million persons; category 2 was large metropolitan with < 1 million persons; and categories 3–12 rural non-metropolitan with decreasing number of persons. The 12 categories were collapsed into 2 mutually exclusive categories, where the 2 metropolitan categories (1 and 2) were combined and classified as "urban" and the remaining 9 rural categories (3 through 12) were combined and singularly classified as "rural," following prior work by Liu et al.¹⁹

2.6 | Data validation

Data on visitor policies at each site were independently abstracted by 2 of 3 study investigators (PT, TW, IS). All data, particularly those where the 2 investigators were discordant, were reviewed and adjudicated by a lead investigator (LKW).

2.7 | Validation analyses

Two validation analyses were conducted to account for the theoretical possibility that during the study period, hospitals may revise their visitor policies because of (1) changes in local government regulations, or (2) regional variations in COVID-19 case burden. The first scenario was exemplified by New York State issuing a statewide ban on all hospital visitation from March 18 to May 20, 2020.²⁰ Although data for this study were collected after that time period, there may have been other state or local area restrictions that we did not discover in our web-based searches and that may have affected the study results. For this validation analysis, we examined whether each state had at least 1 site that had an explicit exception to their visitor policy, which would indicate the absence of a statewide mandate that would have systematically eliminated all exceptions to visitor policies across all sites in that state. In the second scenario, regional variations in COVID-19 prevalence may also have affected hospital policies, whereby hospitals in regions undergoing a COVID-19 surge might temporarily adopt more restrictive visitor policies. To address this, we conducted a

TABLE 1 Geographic characteristics of study sites

	Academic ED/hospital	Non-academic ED/hospital	Total sites
All sites	146	206	352
US geographical region			
Northeast region	47 (32%)	32 (16%)	79 (22%)
Midwest region	38 (26%)	49 (24%)	87 (25%)
South region	44 (30%)	78 (38%)	122 (35%)
West region	17 (12%)	47 (23%)	64 (18%)
Urbanicity of site			
Urban location	140 (96%)	123 (60%)	263 (75%)
Rural location	6 (4%)	83 (40%)	89 (25%)

Note: US geographic regions were defined as Northeast, Midwest, South, and West regions based on US Census Bureau Region classifications (https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf). Rural or urban locations were designated based on US Department of Agriculture Urban Influence Codes (<https://www.ers.usda.gov/data-products/urban-influence-codes.aspx>).

region-specific analysis across the four U.S. Census regions by examining whether there were significant differences in the proportion of sites with any exceptions.

2.8 | Statistical analysis

We compared the proportions of visitor policy characteristics across different categories of study site characteristics, such as academic status and geographical factors, using Fisher's exact tests.²¹ All statistical analyses including the validation analysis described subsequently, were conducted using IBM SPSS statistics software version 26 (IBM Corporation, Somers, NY).

3 | RESULTS

The study sample comprised 352 (146 academic and 206 non-academic) total sites. The geographic characteristics of study sites are shown in Table 1. COVID-19 hospital-wide visitor policies were available at 326 (93%) sites and significantly more likely found at academic and urban sites. Separate ED-specific policies were available at 164 sites, although their overall prevalence did not significantly differ between academic and non-academic or between urban and rural sites. The prevalence of hospital-wide or ED-specific visitor policies did not vary significantly across the 4 geographic regions ($P = 0.965$).

Of the 326 sites with a hospital-wide visitor policy, 76% reported exceptions for children, 39% for patients with cognitive impairment (with 14% specific for dementia), 33% for those with physical impairment, and 58% for those receiving end-of-life care. Among sites with ED-specific visitor policies, 48% reported exceptions for children, 32% for patients with cognitive impairment (11% of sites specified demen-

tia), 27% for those with physical impairment, and 29% for those receiving end-of-life care.

A comparison of individual exceptions between academic and non-academic sites is shown in Table 2, where academic sites were more likely to report policy exceptions, although non-academic sites were notably more likely to report exceptions for end-of-life care.

Of the 352 sites, 310 (88%) provided information only in English; the remaining 12% also provided information in Spanish, of which 4% included a third language. Academic sites were more likely to provide information in languages other than English (17% vs 8%; $P = 0.048$).

In the validation analysis, every state had at least 1 site that had an explicit exception to their visitor policy, and we observed no significant differences in the prevalence of either hospital-wide or ED-specific visitor policies between geographic regions.

4 | LIMITATIONS

One limitation with this study was the reliance on publicly available information, as hospitals may have unpublicized internal policies. For example, only 76% of sites explicitly provided an exception for parents, although the remaining sites likely permitted this exception without explicitly publicizing it.⁴⁹ Nonetheless, our approach was intentionally chosen to mimic the expected steps the public would take in search of a hospital's visitor policy. Furthermore, explicit publicly available policies are more relevant to older persons; whereas parents of children were more likely to pursue exemptions when none were explicitly provided,⁴⁹ older persons were more likely to identify barriers and be discouraged from seeking care.⁵⁰ This suggests that allowances for discretionary exceptions should be explicitly mentioned, as the onus of requesting them should not be placed upon the patient, who are the ones most likely to benefit most but evidently also most reluctant to request them. Second, hospital policies may change over time in response to individual state regulations or be influenced by regional COVID-19 patterns and may also change as knowledge of disease transmission and the vaccinated proportion of the population changes. We anticipated this possibility and therefore intentionally designed this study to capture all data in as narrow a time frame as possible to avoid or minimize such changes. We eschewed a potentially larger sample of sites in order to gain a shorter data collection period. We also addressed this limitation with a validation analysis that found no evidence of either a systematic statewide elimination of visitor exceptions or significant regional variations in the prevalence of visitor policies. Relatedly, we also recognize that a similar study conducted after the availability of the COVID-19 vaccines may produce different findings in regard to visitor restrictions.

5 | DISCUSSION

During the height of the first wave of the US COVID-19 pandemic, nearly all hospitals sampled for this study reported a COVID-19 hospital-wide visitor policy and half also reported an ED-specific

TABLE 2 Comparison of COVID-19 hospital-wide and ED-specific visitor restriction policies and exceptions between academic and non-academic sites

Policy elements	Hospital policies		ED-specific policies	
	Academic sites	Non-academic sites	Academic sites	Non-academic sites
Sites reporting a COVID-19 visitor policy, n	140	186	70	94
Sites with any exceptions to the visitor policy, n (%)	118 (84%)	150 (81%)	65 (93%)**	45 (48%)**
Exception for children (patients < 18 years), n (%)	116 (83%)*	133 (71%)*	44 (63%)*	35 (37%)*
Exception for patients with cognitive impairment, n (%)	63 (45%) [§]	63 (34%) [§]	31 (44%)**	17 (18%)**
Exception for patients with physical impairment, n (%)	65 (46%)**	42 (23%)**	18 (26%)	22 (23%)
Exception for patients receiving end-of-life care, n (%)	67 (48%)*	123 (66%)*	9 (13%)*	34 (36%)*

Note: Superscript notations indicate where differences in the proportion of sites with particular visitor policy elements, when comparing academic and non-academic sites, were statistically significant at $P < 0.05$ (*) or $P < 0.001$ (**). [§] P value 0.0507. Fewer than 5 academic and non-academic sites each did not provide details for policy exceptions nor indicated discretionary exceptions that required visitors to contact the hospital or emergency department to discuss their specific circumstances.

policy. Yet, fewer than 60% of hospitals reported exceptions for end-of-life care, fewer than 40% reported exceptions for patients with either cognitive or physical impairment, and fewer than 1 in 8 hospitals publicly posted a visitor policy in a language other than English.

To our knowledge this is the first nationally-representative and randomly sampled US study on COVID-19 visitor policies with a focus on 3 clinical conditions highly germane to the older adult population.^{4,9-12} Exceptions to visitor restrictions for patients receiving obstetric,²² pediatric,^{23,24} and end-of-life care have been reported²⁵; however, the impact of visitor policies on persons with cognitive impairment or physical impairment is lacking. Jaswaney examined visitor policies using a non-random sample of the 70 largest metropolitan US hospitals from 24 states and similarly found that 93% had visitor policies and 46% had ED-specific policies, and a higher proportion of hospitals with exceptions for end-of-life care (78%) and for patients with any “disabilities” (54%), with that category including cognitive impairment.²⁶

As the SARS-CoV-2 virus may be transmitted by asymptomatic persons,²⁷ one logical concern was that visitors could infect patients, hospital staff, and/or other visitors or could themselves be infected while in the hospital. Although these risks could be mitigated by providing visitors with personal protective equipment (PPE), the need for visitors to use PPE inside the hospital introduces new challenges with regard to having adequate supplies of PPEs, educating visitors in proper PPE usage, monitoring visitors' compliance with PPE policies and physical distancing mandates, and addressing the potential liability of allowing uninfected individuals access to a facility with a high prevalence of COVID-19 infections. Restrictions on visitors can also reduce the absolute number of persons at each site, particularly in common use areas such as cafeterias during times of peak capacity, and facilitate adherence to physical distancing recommendations. In one ED study, visitors made up 16% of the people in an ED, whereas ED nurses comprised 11% and all physicians 13%, with the remainder patients and other employees.²⁸

Although our study found that visitor restrictions were widely implemented, their impact on infection control remains unclear. One study found that visitor restrictions did not reduce hospital-based

respiratory viral infections,²⁹ although a different study reported that rigorous infection control measures, including visitor restrictions, decreased nosocomial COVID-19 infections.³⁰

The higher prevalence of policy exceptions for persons with cognitive or physical impairments at academic sites may reflect their higher patient population with severe cognitive or physical impairment, whereas the lower prevalence of exceptions for patients receiving end-of-life care was perhaps explained by the specialized care of immunocompromised transplant and oncology patients at these sites that necessitated more restrictive policies for terminally ill patients.³¹ Nonetheless, these observations warrant further research.

Our findings underscore the need to distinguish the different roles within the umbrella term of “visitors.” This term disregards or minimizes the critical roles of family and other caregivers of dependent older persons, who serve as surrogate decision-makers, provide critical medical information, lend emotional support, and advocate for care quality on their behalf.^{32,33} In the case of persons living with advanced dementia, caregivers serve the invaluable role of interpreting the non-verbal clues of these persons, who otherwise may communicate pain, fear, overstimulation, or an unmet need only through agitation.³⁴ The roles of caregivers of older adults may practically parallel those of parents of young children, and the fact that parents were most likely to be granted an explicit exemption from visitor policies in our study demonstrates that hospitals recognize the benefit of such critical roles in the care of the patient. Caregiver presence would arguably have been more crucial during the pandemic, as persons with cognitive or physical impairment experienced further functional declines,^{3,9,35} where the widespread use of face masks potentially exacerbated disorientation in those with advanced dementia,^{36,37} and where constraints in hospital resources or competing demands often limited the hospital staff's ability to attend to patients with special needs or disabilities.³⁸ Allowing caregivers at the bedside also ensures that physically impaired persons receive timely assistance with self-care needs and may reduce the workload of health care practitioners during the pandemic. With these considerations in mind, it is therefore surprising that not more hospitals and EDs would have explicitly accommodated the needs

of patients with cognitive and physical impairments. Moreover, such exceptions would apply to a large and growing segment of the communities they serve, especially given the substantial and rising prevalence both Alzheimer's disease and related dementias (ADRD) and physical impairment. Currently, there are an estimated 5 million persons in the United States and 50 million persons worldwide living with ADRD, as well as 13 million persons in the United States and 800 million persons worldwide with physical impairment.³⁹⁻⁴³ The impact of visitor restrictions also gained greater importance during the COVID-19 pandemic and restrictions were especially harmful to older persons receiving end-of-life care and their families. Up to half of older persons in the United States spend their last month of life in the ED or hospitalized even before the pandemic,¹² and as many as two thirds of COVID-19-related deaths occurred in hospitals in some US communities.⁴⁴ The absence of family or other caregivers had adversely affected shared decision-making for older persons requiring aggressive treatments or complex care.⁴⁵ Although technological solutions have been heavily used to connect patients, families, and medical teams virtually during the pandemic, face-to-face interactions remain the gold standard for complex decision-making involving multiple parties.³² Even in situations where exceptions to visitor restrictions exist, we expect that such exceptions would be extended only to family or caregivers and may exclude others, such as clergy or close family friends, who may nonetheless offer relief and comfort to terminal patients.

The United States has seen a disproportionately higher incidence and mortality of COVID-19 among ethnic and racial minorities, including African Americans, Native Americans, and Hispanics.⁴⁶ Yet, in spite of this, only 12% of sites had visitor policy information available in Spanish or other languages than English, which only compounds the heavier COVID-19 burden on these particular communities and the difficult access to care faced by older persons not fluent in English.⁴⁷ Visitor restrictions present an additional challenge for Hispanic patients, given that they serve as caregivers to older family members more frequently and for longer durations, compared with their white counterparts.⁴⁸ Older Hispanics and other racial minorities who are not fluent in English, especially those with cognitive or physical impairment, may therefore benefit from the ED and in-hospital involvement of caregivers, but the limited availability of information about exceptions to COVID-19 visitor policies, whether in Spanish or other languages than English, may reduce the likelihood a caregiver requests or receives an exception.⁴⁷

In this random sample of US ED and hospitals, the majority of sites did not offer exceptions to COVID-19 visitor restrictions that would have benefited older persons with cognitive or physical impairments or who were receiving end-of-life care. Any potential benefits of visitor restrictions in minimizing viral spread must be weighed against the special needs of older persons with complex care needs and the potential harm of depriving them of caregivers. The lack of multilingual information may widen the existing disparities in access to care and health outcomes between socioeconomic groups. This issue is both critical and timely for older adults seeking emergency care in the United States, particularly given that hospitalizations for older persons in the United States often originate from the ED⁵¹ and the increasing use of the

ED as a frequent or primary place of care for older persons in the United States.⁵² This study also raises a concern for ageism, where well-intended hospital policies failed to account for the critical needs of, and the potentially harmful consequences to, the more vulnerable and dependent older persons of the community they serve. We recommend the modification of visitor policies to distinguish between caregivers and the casual visitor and argue for the allowance of visitors for all patients receiving end-of-life care and for at least 1 caregiver to accompany all patients with cognitive or physical impairment throughout any health care encounter. Even in the absence of vaccines, these allowances can be pragmatically facilitated by investing in education and PPE for visitors and caregivers. This study offers a vital lesson for the ongoing COVID-19 pandemic and future epidemics. Future studies should address the impact of visitor restrictions on the patient experience, as well as the psychological and clinical outcomes for patients hospitalized during a pandemic and with restricted access to family, caregivers, or other visitors.

ACKNOWLEDGMENTS

The authors wish to thank Krislyn M. Boggs, MPH, and the EMNet Coordinating Center at Massachusetts General Hospital (Boston, MA) for access to the information from the NEDI-USA database.

FUNDING SOURCES

There were no funding sources in support of this work.

CONFLICT OF INTEREST

The authors have no conflicts of interest to report.

AUTHOR CONTRIBUTIONS

Alexander X. Lo and Maura Kennedy were primarily responsible for the study concept and design, analysis and interpretation of data, and preparation of manuscript. Logan K. Wedel participated in the acquisition, validation, and interpretation of data and manuscript preparation. Thiti Wongtangman, Phraewa Thatphet, and Ilianna Santangelo participated in data acquisition and manuscript preparation. Shan W. Liu contributed to the study design and manuscript preparation. Anita N. Chary, Paul D. Biddinger, and Corita R. Grudzen contributed to interpretation of data and manuscript preparation.

REFERENCES

- Centers for Disease Control and Prevention COVID Data Tracker.
- Geriatric Medicine Research C, Covid C, Welch C. Age and frailty are independently associated with increased COVID-19 mortality and increased care needs in survivors: results of an international multi-centre study. *Age Ageing*. 2021;50:617-630.
- Aroos R, Wong BLL, Merchant RA. Delayed health consequences of COVID-19 lockdown in an older adult. *Age Ageing*. 2021;50:673-675.
- Lightfoot E, Yun H, Moone R, et al. Changes to family caregiving of older adults and adults with disabilities during COVID-19. *Gerontol Geriatr Med*. 2021;7:23337214211002404.
- Aronson L. Ageism is making the pandemic worse. *The Atlantic*. 2020.
- Colenda CC, Reynolds CF, Applegate WB, et al. COVID-19 pandemic and ageism: a call for humanitarian care. *J Am Geriatr Soc*. 2020;68:1627-1628.

7. Fraser S, Lagace M, Bongue B, et al. Ageism and COVID-19: what does our society's response say about us?. *Age Ageing*. 2020;49:692–695.
8. Sinvani L. The COVID-19 pandemic: experiences of a geriatrician-hospitalist caring for older adults. *J Am Geriatr Soc*. 2020;68:934–935.
9. Brown EE, Kumar S, Rajji TK, Pollock BG, Mulsant BH. Anticipating and Mitigating the Impact of the COVID-19 pandemic on Alzheimer's disease and related dementias. *Am J Geriatr Psychiatry*. 2020;28:712–721.
10. Mok VCT, Pendlebury S, Wong A, et al. Tackling challenges in care of Alzheimer's disease and other dementias amid the COVID-19 pandemic, now and in the future. *Alzheimers Dement*. 2020;16:1571–1581.
11. Choi C. Peaceful goodbyes: providing end-of-life care to patients with COVID-19. *J Am Geriatr Soc*. 2020;68:1682–1683.
12. Smith AK, McCarthy E, Weber E, et al. Half of older Americans seen in emergency department in last month of life; most admitted to hospital, and many die there. *Health Aff (Millwood)*. 2012;31:1277–1285.
13. Herscovici DM, Boggs KM, Sullivan AF. What is a freestanding emergency department? Definitions differ across major United States data sources. *West J Emerg Med*. 2020;21:660–664.
14. Sullivan AF, Richman IB, Ahn CJ, et al. A profile of US emergency departments in 2001. *Ann Emerg Med*. 2006;48:694–701.
15. Yang Z, Yang R, Kwak MJ, et al. Oncologic emergencies in a cancer center emergency department and in general emergency departments countywide and nationwide. *PLoS One*. 2018;13:e0191658.
16. US Census Bureau Region classifications
17. US Department of Agriculture Urban Influence Codes (UIC).
18. Larson SL, Fleishman JA. Rural-urban differences in usual source of care and ambulatory service use: analyses of national data using urban influence codes. *Med Care*. 2003;41:III65–III74.
19. Liu J, Bennett KJ, Harun N, Probst JC. Urban-rural differences in overweight status and physical inactivity among US children aged 10–17 years. *J Rural Health*. 2008;24:407–415.
20. The New York Times. N.Y. to Let Visits Resume at Some Hospitals.
21. Castelpietra G, Colli C, Tossut D, et al. The impact of Covid-19 pandemic on community-oriented mental health services: the experience of Friuli Venezia Giulia region, Italy. *Health Policy Technol*. 2021;10:143–150.
22. Arora KS, Mauch JT, Gibson KS. Labor and delivery visitor policies during the COVID-19 pandemic: balancing risks and benefits. *JAMA*. 2020.
23. Kitano T, Piche-Renaud PP, Groves HE, Streitenberger L, Freeman R, Science M. Visitor restriction policy on pediatric wards during novel coronavirus (COVID-19) outbreak: a survey study across North America. *J Pediatric Infect Dis Soc*. 2020.
24. Virani AK, Puls HT, Mitsos R, Longstaff H, Goldman RD, Lantos JD. Benefits and risks of visitor restrictions for hospitalized children during the COVID pandemic. *Pediatrics*. 2020.
25. Wallace CL, Wladkowski SP, Gibson A, White P. Grief during the COVID-19 pandemic: considerations for palliative care providers. *J Pain Symptom Manage*. 2020;60:e70–e76.
26. Jaswaney R, Davis A, Cadigan RJ, et al. Hospital policies during COVID-19: an analysis of visitor restrictions. *J Public Health Manag Pract*. 2021.
27. Johansson MA, Quandelacy TM, Kada S, et al. SARS-CoV-2 transmission from people without COVID-19 symptoms. *JAMA Netw Open*. 2021;4:e2035057.
28. Gilligan P, Joseph D, Bartlett M, et al. The 'who are all these people?' study. *Emerg Med J : EMJ*. 2015;32:109–111.
29. Wee LE, Conceicao EP, Sim JX, Aung MK, Venkatachalam I. The impact of visitor restrictions on health care-associated respiratory viral infections during the COVID-19 pandemic: experience of a tertiary hospital in Singapore. *Am J Infect Control*. 2020.
30. Rhee C, Baker M, Vaidya V, et al. Incidence of nosocomial COVID-19 in patients hospitalized at a large US academic medical center. *JAMA Netw Open*. 2020;3:e2020498.
31. Hui JYC, Yuan J, Teoh D, et al. Cancer management during the COVID-19 pandemic in the United States: results from a National Physician Cross-sectional Survey. *Am J Clin Oncol*. 2020;43:679–684.
32. Bronsther R. Visitor restrictions during COVID-19 pandemic may impact surrogate medical decision-making. *J Patient Exp*. 2020;7:428–429.
33. Mailhot T, Darling C, Ela J, Malyuta Y, Inouye SK, Saczynski J. Family identification of delirium in the emergency department in patients with and without dementia: validity of the family confusion assessment method (FAM-CAM). *J Am Geriatr Soc*. 2020;68:983–990.
34. Kennedy M, Koehl J, Shenvi CL, et al. The agitated older adult in the emergency department: a narrative review of common causes and management strategies. *J Am Coll Emerg Physicians Open*. 2020;1:812–823.
35. Canevelli M, Valletta M, Toccaceli Blasi M, et al. Facing dementia during the COVID-19 outbreak. *J Am Geriatr Soc*. 2020;68:1673–1676.
36. Gil R, Arroyo-Anllo EM. Alzheimer's disease and face masks in times of COVID-19. *J Alzheimers Dis*. 2020.
37. Schlogl M, Jones CA. Maintaining our humanity through the mask: mindful communication during COVID-19. *J Am Geriatr Soc*. 2020;68:E12–E13.
38. Selick A, Durbin J, Casson I, Lee J, Lunskey Y. Barriers and facilitators to improving health care for adults with intellectual and developmental disabilities: what do staff tell us?. *Health Promot Chronic Dis Prev Can*. 2018;38:349–357.
39. Hebert LE, Weuve J, Scherr PA, Evans DA. Alzheimer disease in the United States (2010–2050) estimated using the 2010 census. *Neurology*. 2013;80:1778–1783.
40. World Health Organization Dementia Key Facts 21 September 2020.
41. Okoro CA, Hollis ND, Cyrus AC, Griffin-Blake S. Prevalence of disabilities and health care access by disability status and type among adults - United States, 2016. *MMWR Morb Mortal Wkly Rep*. 2018;67:882–887.
42. World Health Organization World Report on Disability 13 December 2011.
43. Sleeman KE, de Brito M, Etkind S, et al. The escalating global burden of serious health-related suffering: projections to 2060 by world regions, age groups, and health conditions. *Lancet Glob Health*. 2019;7:e883–e892.
44. Chuzi S, Molsberry R, McCabe ME, et al. Distribution in place of death for COVID-19-Related mortality in the United States. *J Am Geriatr Soc*. 2020;68:1917–1918.
45. Dhand A, Forman L, Vegunta R, Aronow WS, Nabors C. Challenges of shared decision making in older patients with COVID-19. *J Am Geriatr Soc*. 2021;69:605–606.
46. Mackey K, Ayers CK, Kondo KK, et al. Racial and ethnic disparities in COVID-19-related infections, hospitalizations, and deaths : a systematic review. *Ann Intern Med*. 2020.
47. Chary AN, Naik AD, Kennedy M. Visitor policies and health equity in emergency care of older adults. *J Am Geriatr Soc*. 2021.
48. Rote SM, Angel JL, Moon H, Markides K. Caregiving across diverse populations: new evidence From the National Study of Caregiving and Hispanic EPESE. *Innov Aging*. 2019;3:igz033.
49. Lanphier E, Mosley L, Antommaria AHM. Assessing visitor policy exemption requests during the COVID-19 pandemic. *Pediatrics*. 2021.
50. Fitzpatrick AL, Powe NR, Cooper LS, Ives DG, Robbins JA. Barriers to health care access among the elderly and who perceives them. *Am J Public Health*. 2004;94:1788–1794.
51. Lo AX, Flood KL, Biese K, Platts-Mills TF, Donnelly JP, Carpenter CR. Factors associated with hospital admission for older adults receiving care in U.S. emergency departments. *J Gerontol A Biol Sci Med Sci*. 2017;72:1105–1109.

52. Lo AX, Carpenter CR. Balancing evidence and economics while adapting emergency medicine to the 21st century's geriatric demographic imperative. *Acad Emerg Med*. 2020.

AUTHOR BIOGRAPHY



Alexander Lo, MD, PhD, is an Associate Professor of Emergency Medicine at Feinberg School of Medicine at Northwestern University in Chicago, Illinois.

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

How to cite this article: Lo AX, Wedel LK, Liu SW, et al. COVID-19 hospital and emergency department visitor policies in the United States: impact on persons with cognitive or physical impairment or receiving end-of-life care. *JACEP Open*. 2022;3:e12622. <https://doi.org/10.1002/emp2.12622>