quine from retail pharmacies, including an approximate additional 93 000 patients who received both hydroxychloroquine and azithromycin. First, evidence of efficacy in preventing or treating COVID-19 is limited. Treatment guidelines found insufficient clinical data to recommend for or against hydroxychloroquine or chloroquine use and recommend against combining either with azithromycin, except in clinical trials.[1] Second, because of reports of cardiac and other adverse events, the US Food and Drug Administration has cautioned against using hydroxychloroquine or chloroquine for COVID-19 outside of hospitalized settings or clinical trials.[5] If azithromycin is used with hydroxychloroquine or chloroquine, correcting electrolyte levels, completing electrocardiographic monitoring, and avoiding other QTc interval–prolonging drugs are recommended.[6] Third, sudden increases in demand for hydroxychloroquine and chloroquine limit availability for FDA-approved uses for rheumatoid arthritis, lupus, and malaria.[5] While some of the largest increases in hydroxychloroquine and chloroquine dispensing occurred in states with high COVID-19 case rates (eg, New Jersey, New York), other states with large increases in dispensing had moderate (eg, Florida) or low (eg, Hawaii) case rates.

These data do not include prescribing indication, so not all increased dispensing may be for COVID-19. It is unknown if patients immediately used or saved these medications. Finally, data were collected prior to release of many treatment guidelines and as state board of pharmacy dispensing regulations for hydroxychloroquine and chloroquine were evolving.[2]

As COVID-19 continues to spread, ongoing assessment of the use of potential therapies will be essential to inform safe and appropriate treatment, along with prompt adverse event reporting to FDA's MedWatch safety reporting program (https://www.fda.gov/safety/medwatch-fda-safety-information-and-adverse-event-reporting-program). State-specific data can help target efforts to improve prescribing.

Nadine Shehab, PharmD, MPH
Maribeth Lovegrove, MPH
Daniel S. Budnitz, MD, MPH

Author Affiliations: US Centers for Disease Control and Prevention COVID-19 Response Team, National Center for Emerging and Zoonotic Infectious Diseases, Division of Healthcare Quality Promotion, US Centers for Disease Control and Prevention, Atlanta, Georgia (Shehab, Lovegrove, Budnitz); Lantana Consulting Group, Atlanta, Georgia (Shehab).

Accepted for Publication: June 9, 2020.

Corresponding Author: Daniel S. Budnitz, MD, MPH, US Centers for Disease Control and Prevention COVID-19 Response Team, National Center for Emerging and Zoonotic Infectious Diseases, Division of Healthcare Quality Promotion, US Centers for Disease Control and Prevention, 1600 Clifton Rd NE, Mailstop V18-4, Atlanta, GA 30329 (dbudnitz@cdc.gov).

Published Online: July 6, 2020. doi:10.1001/jamainternmed.2020.2594

1. National Institutes of Health. COVID-19 treatment guidelines. Published 2020. Accessed April 30, 2020. https://covid19treatmentguidelines.nih.gov/introduction/

2. American Medical Association. Joint statement on ordering, prescribing or dispensing COVID-19 medications. Published 2020. Accessed April 30, 2020. https://www.ama-assn.org/delivering-care/public-health/joint-statement-ordering-prescribing-or-dispensing-covid-19

3. Liu M, Caputi TL, Dredze M, Kesselheim AS, Ayers JW. Internet searches for unproven COVID-19 therapies in the United States. *JAMA Intern Med*. Published online April 29, 2020.. doi:10.1001/jamainternmed.2020.1764

4. US Centers for Disease Control and Prevention. 2019 Annual surveillance report of drug-related risks and outcomes—United States Surveillance Special Report. Published November 1, 2019. Accessed May 8, 2020. https://www.cdc.gov/drugoverdose/pdf/pubs/2019-cdc-drug-surveillance-report.pdf

5. US Food and Drug Administration. FDA drug safety communication: FDA cautions against use of hydroxychloroquine or chloroquine for COVID-19 outside of the hospital setting or a clinical trial due to risk of heart rhythm problems, does not affect FDA-approved uses for malaria, lupus, and rheumatoid arthritis. Published April 24, 2020. Accessed April 30, 2020. https://www.fda.gov/media/137250/download

6. Roden DM, Harrington RA, Poppas A, Russo AM. Considerations for drug interactions on QTc in exploratory COVID-19 (coronavirus disease 2019). *J Am Coll Cardiol*. Published online April, 2020. doi:10.1016/j.jacc.2020.04.016

HEALTH CARE POLICY AND LAW

Assessment of Disparities in Digital Access Among Medicare Beneficiaries and Implications for Telemedicine

In response to the coronavirus disease 2019 (COVID-19) pandemic, Medicare temporarily expanded its coverage of telemedicine to all beneficiaries, included visits in the patient's home, and

+ Supplemental content

began paying for audio-only visits at the same rate as video and in-person visits.[1,2] Previously, Medicare (with a few exceptions) limited telemedicine coverage to video visits for rural beneficiaries and required video visits to take place at a medical facility, such as a physician's office, rather than at a patient's home.[3]

Access to technology at home and the ability to use technology may affect use of video or audio-only telemedicine visits by Medicare beneficiaries. Although evidence on the efficacy of video vs audio-only visits is lacking,[4] audio-only visits might be inadequate in some situations, such as when visual monitoring or diagnosis is important for care. We examined

Table. Limitations in Computer and Internet Access Among Community-Dwelling Medicare Beneficiaries in 2018[a]

Characteristic	Without desktop or laptop computer with high-speed internet[b]		Without smartphone with a data plan for wireless internet[c]		Without any digital access[d]	
	Proportion (95% CI), %	P value[e]	Proportion (95% CI), %	P value[e]	Proportion (95% CI), %	P value[e]
Among Medicare beneficiaries	41.4 (40.4-42.4)	NA	40.9 (40.0-41.8)	NA	26.3 (25.5-27.1)	NA
Sex						
Male	39.2 (38.1-40.2)	<.001	38.6 (37.6-39.7)	<.001	24.0 (23.2-24.9)	<.001
Female	43.3 (42.4-44.2)		42.8 (41.9-43.7)		28.1 (27.3-28.8)	
Age, y						
<64	46.8 (45.8-47.8)		35.2 (34.2-36.1)		24.4 (23.6-25.2)	
65-69	33.5 (32.5-34.3)		29.8 (28.8-30.7)		17.1 (16.4-17.8)	
70-74	36.2 (35.1-37.3)	<.001	36.1 (35.0-37.2)	<.001	21.1 (20.3-22.0)	<.001
75-59	42.0 (40.8-43.1)		46.1 (44.9-47.3)		28.6 (27.5-29.6)	
80-84	49.9 (48.7-51.1)		56.9 (55.6-58.1)		38.4 (37.2-39.6)	
≥85	59.1 (57.9-60.2)		66.5 (65.3-67.7)		50.0 (48.7-51.2)	
Race/ethnicity						
Non-Hispanic White	38.6 (37.4-39.8)		40.7 (39.7-41.7)		24.5 (23.6-25.3)	
Non-Hispanic Black	56.3 (55.0-57.5)	<.001	47.9 (46.7-49.0)	<.001	37.3 (36.1-38.5)	<.001
Hispanic	51.8 (50.7-53.0)		40.1 (38.9-41.2)		31.6 (30.5-32.7)	
Other	35.5 (33.4-37.5)		31.2 (29.3-33.1)		20.7 (18.9-22.6)	
Marital status						
Married	32.4 (31.4-33.5)		33.5 (32.5-34.5)		17.9 (17.2-18.7)	
Widowed	54.3 (53.3-55.4)	<.001	54.5 (53.4-55.5)	<.001	40.6 (39.6-41.7)	<.001
Divorced or separated	49.2 (48.1-50.3)		44.8 (43.8-45.8)		31.2 (30.3-32.2)	
Never married	51.7 (50.6-52.9)		47.6 (46.4-48.7)		34.3 (33.2-35.4)	
Educational attainment						
Less than high school	62.3 (61.2-63.4)		54.8 (53.6-56.1)		44.8 (43.7-46.0)	
High school	49.9 (48.9-50.8)	<.001	50.1 (49.2-51.0)	<.001	34.2 (33.5-35.0)	<.001
Some college or higher	30.3 (29.5-31.1)		31.4 (30.7-32.2)		16.1 (15.5-16.6)	

(continued)

disparities in digital access (ie, access at home to technology that enables video telemedicine visits) among Medicare beneficiaries by socioeconomic and demographic characteristics.

Methods | For this cross-sectional study, we analyzed public use respondent- and household-level data files from the 2018 American Community Survey (ACS; from January 1 2018, to December 31, 2018), a nationally representative survey of the US population. We selected respondents to the ACS who lived in the community (excluding those in nursing homes) and indicated that they were Medicare beneficiaries at the time of the survey. The University of Pittsburgh Institutional Review Board waived study review because this study used deidentified data and was determined to be non–human subjects research.

Among Medicare beneficiaries, we assessed the proportion who did not have (1) a desktop or laptop computer with a high-speed internet subscription, (2) a smartphone with a wireless data plan, or (3) either means of digital access. We examined how access limitations differed by, age, sex, race/ethnicity, marital status, educational level, language, income, enrollment in Medicaid, and disability status. We adjusted for person-level survey weights in the ACS to make our estimates representative of the national Medicare population. Analyses were performed using Stata, version 16 (StataCorp LLC). Reported P values were 2-sided and considered to be statistically significant at P < .05. The eAppendix in the Supplement provides more details about the methods.

Results | The study sample consisted of 638 830 surveyed individuals. When weighted, this sample represented 54 749 082 individuals in the community-dwelling Medicare population.

Overall, 41.4% (95% CI, 40.4%-42.4%) of Medicare beneficiaries lacked access to a desktop or laptop computer with a high-speed internet connection at home, and 40.9% (95% CI, 40.0%-41.8%) lacked a smartphone with a wireless data plan (Table). The proportion of beneficiaries without either form of digital access was 26.3% (95% CI, 25.5%-27.1%), and this proportion varied across demographic and socioeconomic groups. For example, a 50.1% (95% CI, 49.3%-50.9%) of beneficiaries with income of 100% below the federal poverty level lacked digital access compared with 11.5% (95% CI, 11.0%-11.9%) of those with income 400% or more above the federal poverty level (P < .001). The proportion of Medicare beneficiaries with digital access was lower among those who were 85 or older, were widowed, had a high school education or less, were Black or Hispanic, received Medicaid, or had a disability.

Discussion | Using data from 2018, we found that 26.3% of Medicare beneficiaries lacked digital access at home, making it unlikely that they could have telemedicine video visits with clinicians. The proportion of beneficiaries who lacked digital access was higher among those with low socioeconomic status, those 85 years or older, and in communities of color. Although Medicare's payment for audio-only visits at the same rate as video and in-person visits may be associated with im-

Table. Limitations in Computer and Internet Access Among Community-Dwelling Medicare Beneficiaries in 2018[a] (continued)

Characteristic	Without desktop or laptop computer with high-speed internet[b]		Without smartphone with a data plan for wireless internet[c]		Without any digital access[d]	
	Proportion (95% CI), %	P value[e]	Proportion (95% CI), %	P value[e]	Proportion (95% CI), %	P value[e]
Language spoken at home						
English	41.0 (39.9-42.1)		41.9 (40.9-42.8)		26.3 (25.4-27.1)	
Spanish	50.2 (49.0-51.4)	<.001	38.1 (37.0-39.2)	<.001	29.7 (28.6-30.9)	.01
Other	36.7 (35.5-37.9)		34.6 (33.3-35.9)		22.5 (21.3-23.6)	
Household income, % of FPL[f]						
<100	67.5 (66.7-68.2)		61.9 (61.1-62.7)		50.1 (49.3-50.9)	
100 to <200	59.3 (58.5-60.1)		58.5 (57.5-59.4)		43.3 (42.4-44.2)	
200 to <300	44.1 (43.2-45.0)	<.001	45.5 (44.5-46.4)	<.001	27.9 (27.1-28.6)	<.001
300 to <400	35.9 (34.9-36.8)		37.1 (36.2-38.0)		20.3 (19.6-21.0)	
≥400 FPL	25.0 (24.2-25.8)		24.5 (23.9-25.2)		11.5 (11.0-11.9)	
Enrolled in Medicaid						
Yes	54.4 (53.4-55.3)		47.3 (46.2-48.4)		36.1 (35.2-37.0)	
No	38.5 (37.5-39.5)	<.001	39.5 (38.5-40.4)	<.001	24.0 (23.2-24.8)	<.001
Has disability[g]						
Yes	48.9 (48.0-49.9)		48.1 (47.1-49.0)		33.6 (32.8-34.4)	
No	36.9 (36.0-37.9)	<.001	36.7 (35.7-37.6)	<.001	21.8 (21.1-22.6)	<.001

Abbreviations: FPL, federal poverty level; NA, not applicable.

[a] Analyses based on 638 830 observations in the 2018 American Community Survey. When weighted, this sample represented 54 749 082 individuals in the community-dwelling Medicare population.

[b] Medicare beneficiaries in households that did not have a desktop or laptop computer with high-speed internet provided via a cable, digital subscriber line, or fiber-optic connection. The eAppendix in the Supplement gives variable definitions.

[c] Medicare beneficiaries in households that did not have a smartphone or other mobile device with a data plan for wireless internet service. The eAppendix in the Supplement gives variable definitions.

[d] Medicare beneficiaries who not have access at home to either (1) a laptop or internet computer with a high-speed wireline internet connection or (2) a smartphone with a data plan for wireless internet service.

[e] P values are for differences between groups of Medicare beneficiaries categorized according to the demographic and socioeconomic variables shown and are adjusted for clustering within public use microdata areas.

[f] The FPL that applied to the individual's household size and state in 2018.

[g] Details of the assessment of disability status using the American Community Survey are given in the eAppendix in the Supplement.

proved access to care for those without digital access, the inability to have a video visit may be associated with increased disparities in access to care. Moreover, some Medicare beneficiaries are unable to use technology for video or even audio visits. Limitations of our study include the lack of data in the ACS on beneficiaries' ability to use technology or community-level broadband internet availability.

During the COVID-19 pandemic, federal telemedicine policy has focused on reimbursement and clinicians' capacity to deliver care remotely.[1] Our results underscore a need to address disparities in digital access among patients. Expanding programs such as Lifeline, a program of the Federal Communications Commission that provides reduced-cost phone or internet service to families with incomes 135% or more below the federal poverty level,[5] may help reduce disparities. However, Lifeline does not pay for devices, and patients may also need assistance using technology for video visits. Addressing these factors associated with digital access in populations with low socioeconomic status will be important as the use of telemedicine increases.

Eric T. Roberts, PhD
Ateev Mehrotra, MD, MPH

Author Affiliations: Department of Health Policy & Management, University of Pittsburgh Graduate School of Public Health, Pittsburgh, Pennsylvania (Roberts); Department of Health Care Policy, Harvard Medical School, Boston, Massachusetts (Mehrotra); Division of General Medicine and Primary Care, Beth Israel Deaconess Medical Center, Boston, Massachusetts (Mehrotra).

Corresponding Author: Eric T. Roberts, PhD, Department of Health Policy & Management, University of Pittsburgh Graduate School of Public Health, 130 DeSoto St, Rm A653, Pittsburgh, PA 15261 (eric.roberts@pitt.edu).

1. CMS. Medicare telemedicine health care provider fact sheet. Updated March 17, 2020. Accessed April 14, 2020. https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet

2. Centers for Medicare & Medicaid Services. Trump Administration issues second round of sweeping changes to support U.S. healthcare system during COVID-19 pandemic. Published April 30, 2020. Accessed May 5, 2020. https://www.cms.gov/newsroom/press-releases/trump-administration-issues-second-round-sweeping-changes-support-us-healthcare-system-during-covid

3. Mehrotra A, Huskamp HA, Souza J, et al. Rapid growth in mental health telemedicine use among rural Medicare beneficiaries, wide variation across states. *Health Aff (Millwood)*. 2017;36(5):909-917. doi:10.1377/hlthaff.2016.1461

4. Grigsby J, Sanders JH. Telemedicine: where it is and where it's going. *Ann Intern Med*. 1998;129(2):123-127. doi:10.7326/0003-4819-129-2-199807150-00012

5. Federal Communications Commission. Lifeline support for affordable communications. Updated August 17, 2016. Accessed May 5, 2020. https://www.fcc.gov/consumers/guides/lifeline-support-affordable-communications

HEALTH CARE POLICY AND LAW

Assessing Telemedicine Unreadiness Among Older Adults in the United States During the COVID-19 Pandemic

There has been a massive shift to telemedicine during the coronavirus disease 2019 (COVID-19) pandemic to protect medical personnel and patients, with the Department of Health and Human Services and others promoting video visits to reach patients at home.[1,2] Video visits require patients to have the knowledge and capacity to get online, operate and troubleshoot audiovisual equipment, and communicate without the cues available in person. Many older adults may be unable to do this because of disabilities or inexperience with technology. This study estimated how many older adults may be left behind in the United States in the migration to telemedicine.

Methods | We completed a cross-sectional study of community-dwelling adults (N = 4525) using 2018 data from the National Health and Aging Trends Study, which is nationally representative of Medicare beneficiaries aged 65 or older, to assess the prevalence of telemedicine unreadiness. The institutional review board of the University of California, San Francisco, deemed this study not to be human subjects research because the data are deidentified and publicly available. *Telemedicine* is defined as the use of communications technology to deliver health care to patients at a distance. Envisioning telemedicine as direct-to-patient video visits, we defined *unreadiness* as meeting any of the following criteria for disabilities or inexperience with technology: (1) difficulty hearing well enough to use a telephone (even with hearing aids), (2) problems speaking or making oneself understood, (3) possible or probable dementia, (4) difficulty seeing well enough to watch television or read a newspaper (even with glasses), (5) owning no internet-enabled devices or being unaware of how to use them, or (6) no use of email, texting, or internet in the past month. National prevalence was determined using analytic weights.[3]

If a family member or caregiver cannot facilitate physician visits, an alternative is telemedicine by telephone. We thus assessed telemedicine unreadiness under 4 scenarios: (1) video visits as described above; (2) video visits assuming patients who have social supports (defined as having a child in the household or at least 2 individuals in one's social network) are telemedicine ready; (3) telephone visits with disability criteria reduced to difficulty speaking, difficulty communicating, or dementia and with technology criteria reduced to absence of any telephone; and (4) telephone visits assuming patients with social supports are telemedicine ready.

We used multivariable logistic regression to assess the adjusted odds of not being ready for video visits by age, sex, race/ethnicity, rurality, marital status, educational level, income, and self-rated health.

Results | Of the 4525 adults included in this study, 1925 (43%) were men, 2600 (57%) were women, and the mean (SD) age was 79.6 (6.9) years. The cohort consisted of 3119 (69%) non-Hispanic White individuals, 952 (21%) non-Hispanic Black individuals, and 273 (6%) Hispanic individuals. An additional 181 individuals (4%) self-identified as non-Hispanic other, which consisted of persons who reported their race/ethnicity as American Indian, Asian, Native Hawaiian, Pacific Islander, other, do not know, or more than 1 race/ethnicity.

Table 1. National Prevalence of Telemedicine Unreadiness in US Adults Older Than 65 Years in 2018 by Mode of Telemedicine Visit[a]

Reason for unreadiness	No., millions (%)			
	Video visits	Video visits with social support[b]	Telephone visits	Telephone visits with social support[b]
Any unreadiness	13.0 (38)	10.8 (32)	6.7 (20)	5.5 (16)
Unreadiness owing to any inexperience with technology	10.1 (30)	8.3 (25)	0.3 (1)	0.2 (1)
Has no internet-enabled devices or does not know how to use them	1.9 (6)	1.5 (4)	NA	NA
Has not emailed, texted, or gone online in a month	8.2 (24)	6.8 (20)	NA	NA
Has no telephone (cell phone or other)	NA	NA	0.3 (1)	0.2 (1)
Unreadiness owing to any physical disability	6.8 (20)	5.5 (16)	6.6 (20)	5.4 (16)
Difficulty hearing	0.8 (2)	0.7 (2)	0.8 (2)	0.7 (2)
Difficulty communicating	2.1 (6)	1.6 (5)	2.1 (6)	1.6 (5)
Probable dementia	2.5 (7)	1.8 (5)	2.5 (7)	1.8 (5)
Possible dementia	2.3 (7)	1.9 (6)	2.3 (7)	1.9 (6)
Difficulty seeing	0.5 (1)	0.4 (1)	NA	NA

Abbreviation: NA, not applicable.

[a] Estimates used complete case analysis for missingness; the number of missing cases never exceeded 16 (<0.2% of sample) for any criterion.

[b] *With social support* assumes that older adults are telemedicine ready if they have a child in the household or 2 or more people in their social network.