

OBSERVATION: BRIEF RESEARCH REPORT

Telemedicine and Office-Based Care for Behavioral and Psychiatric Conditions During the COVID-19 Pandemic in the United States

Background: The coronavirus disease 2019 (COVID-19) pandemic has had far-reaching effects on health care delivery in the United States, ranging from postponement of elective care (1) to increases in the use of telemedicine (2). However, little is known about how the pandemic has affected the treatment of behavioral and psychiatric conditions.

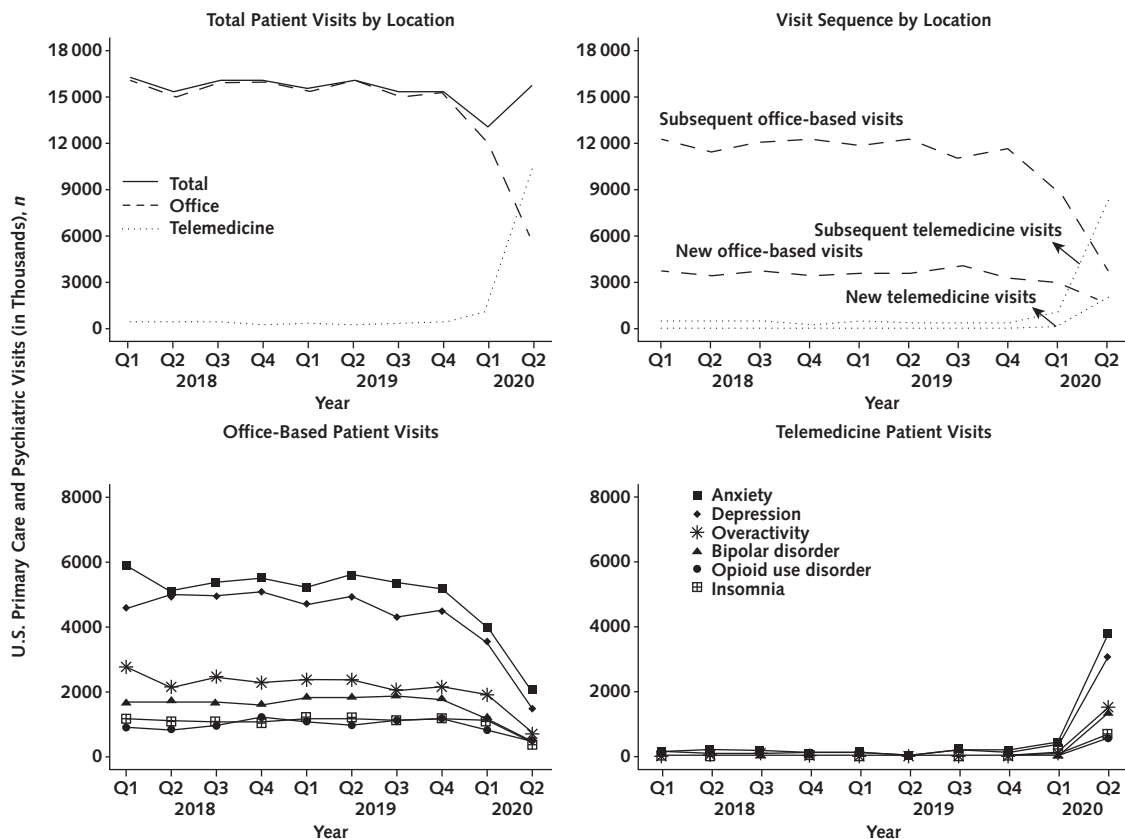
Objective: To characterize quarterly telemedicine and office-based visits from the first quarter of 2018 (2018Q1) through the second quarter of 2020 (2020Q2).

Methods and Findings: We used IQVIA's National Disease and Therapeutic Index—a proprietary, 2-stage, stratified (by specialty and geographic area), nationally representative audit of ambulatory care in the United States—to characterize quarterly telemedicine and office-based visits from 2018Q1 through

2020Q2. Telemedicine visits included those taking place by telephone as well as through web-based platforms. The National Disease and Therapeutic Index involves approximately 4800 physicians who use an electronic form to record details of all patient contacts during 2 consecutive workdays per quarter and generates more than 350 000 annual contact records. Reporting days are randomly assigned to ensure that all workdays in a report period are covered; Saturdays, Sundays, and holidays are assigned as reporting days to physicians practicing on those days. We restricted our analyses to primary care and psychiatric visits and focused on care for 6 of the most prevalent behavioral and psychiatric conditions in the United States: anxiety, depression, overactivity, bipolar disorder, insomnia, and opioid use disorder (3).

Total visits across settings for the 6 conditions decreased from an average of 15.9 million during the first quarter of 2018 and 2019 (2018/2019Q1) to 13.0 million in 2020Q1 (percentage change, -18%) before increasing to 15.8 million in 2020Q2, which is near the 2018/2019Q2 average of 15.7 million (Figure and Table). Office-based visits decreased from an average quarterly volume of 15.5 million before 2020 to 11.9 million in 2020Q1 and 5.3 million in 2020Q2. During the same

Figure. Quarterly trends in telemedicine and office-based visits for behavioral and psychiatric conditions in the United States, 2018–2020 (n = 16 067 unweighted total visits).



Q = quarter. Source: IQVIA's National Disease and Therapeutic Index, 2018–2020, based on a sampling frame of more than 500 000 physicians from the American Medical Association and the American Osteopathic Association master lists. Estimates are weighted based on survey weights provided by the National Disease and Therapeutic Index. Conditions were defined on the basis of having International Classification of Diseases, Ninth Revision codes listed from a visit. Data were based on primary care (family practice, general practice, geriatrics, internal medicine, and pediatrics) and psychiatrist visits.

This article was published at Annals.org on 17 November 2020.

Table. Telemedicine and Office-Based Visits for Behavioral and Psychiatric Conditions in the United States During the First Two Quarters of 2018–2020 (n = 9540 Unweighted Total Visits)*

Conditions or Characteristics	Office-Based Visits						Telemedicine Visits					
	2018/ 2019Q1 Average	2020Q1	Percentage Change (95% CI)	2018/ 2019Q2 Average	2020Q2	Percentage Change (95% CI)	2018/ 2019Q1 Average	2020Q1	Percentage Change (95% CI)	2018/ 2019Q2 Average	2020Q2	Percentage Change (95% CI)
Visits (in thousands), n												
Anxiety	5520	3988	–28 (–31 to –25)	5337	2028	–62 (–66 to –59)	150	444	195 (188 to 221)	140	3765	2584 (2010 to 4544)
Bipolar disorder	1718	1185	–31 (–39 to –26)	1746	465	–73 (–79 to –70)	17	27	55 (50 to 62)	49	1345	2648 (2305 to 3818)
Depression	4615	3496	–24 (–29 to –21)	4932	1487	–70 (–76 to –65)	144	379	163 (149 to 212)	102	3063	2889 (2316 to 4864)
Insomnia	1164	1045	–10 (–11 to –10)	1155	409	–65 (–70 to –62)	40	103	157 (156 to 158)	39	667	1620 (1566 to 1723)
Opioid use disorder	975	810	–17 (–21 to –15)	906	458	–49 (–55 to –47)	13	45	253 (233 to 260)	8	600	7360 (6975 to 8675)
Overactivity	2558	1901	–26 (–31 to –23)	2237	715	–68 (–74 to –65)	31	142	360 (347 to 368)	19	1534	8061 (6676 to 12 156)
Total	15 540	11 889	–23 (–27 to –21)	15 315	5327	–65 (–69 to –62)	395	1130	186 (169 to 231)	383	10 451	2629 (2048 to 4146)
Female, n (%)	8606 (55)	6754 (57)	–	8454 (55)	2765 (52)	–	210 (53)	548 (48)	–	211 (60)	6000 (57)	–
Age, n (%)												
≤19 y	3613 (23)	2718 (23)	–	3511 (23)	998 (19)	–	49 (13)	217 (19)	–	34 (10)	2880 (28)	–
20–39 y	4209 (27)	3100 (26)	–	3993 (26)	1297 (24)	–	95 (24)	239 (21)	–	69 (20)	3197 (31)	–
40–64 y	5348 (34)	4246 (36)	–	5553 (36)	1944 (36)	–	181 (46)	385 (34)	–	163 (46)	2966 (28)	–
≥65 y	2371 (15)	1826 (15)	–	2246 (15)	1088 (20)	–	70 (18)	289 (26)	–	86 (24)	1407 (13)	–
Race/ethnicity, n (%)												
White	12 275 (79)	9135 (77)	–	12 022 (78)	4260 (80)	–	312 (79)	958 (85)	–	298 (85)	7861 (75)	–
Black	1366 (9)	1201 (10)	–	1307 (9)	659 (12)	–	28 (7)	42 (4)	–	31 (9)	1229 (12)	–
Hispanic	1050 (7)	817 (7)	–	1085 (7)	245 (5)	–	47 (12)	70 (6)	–	5 (1)	766 (7)	–
Asian	545 (4)	517 (4)	–	591 (4)	100 (2)	–	33 (8)	12 (1)	–	NA	434 (4)	–
Other	303 (2)	219 (2)	–	311 (2)	63 (1)	–	10 (3)	48 (4)	–	20 (6)	162 (2)	–

NA = not available; Q = quarter.

* Source: IQVIA's National Disease and Therapeutic Index, 2018–2020, based on a sampling frame of more than 500 000 physicians from the American Medical Association and the American Osteopathic Association master lists. Estimates are weighted based on survey weights provided by the National Disease and Therapeutic Index. Conditions were defined on the basis of having International Classification of Diseases, Ninth Revision codes listed from a visit. Data were based on primary care (family practice, general practice, geriatrics, internal medicine, and pediatrics) and psychiatrist visits. Percentage changes are compared with the same quarter of previous years.

period, telemedicine visits accounted for fewer than 3% of visits before 2020 (approximately 0.4 million), 9% during 2020Q1 (1.1 million), and 66% during 2020Q2 (10.5 million). Generally, there were no significant variations in patients' sex or race/ethnicity during the same period; however, patients who had telemedicine visits were younger, especially in 2020Q2. Most visits were subsequent rather than new visits, even after the shift to telemedicine starting in 2020 (Figure), suggesting that telemedicine served primarily to accommodate persons already established in care.

From 2018/2019Q1 to 2020Q1, there were decreases of 17% to 31% in office-based visits across the 6 conditions (Figure and Table). Office-based visits decreased further, by 49% (opioid use disorder) to 73% (bipolar disorder), between 2018/2019Q2 and 2020Q2. By contrast, telemedicine visits increased by 55% (bipolar disorder) to 360% (overactivity) between 2018/2019Q1 and 2020Q1 and by 1620% (insomnia) to 8061% (overactivity) between 2018/2019Q2 and 2020Q2.

Discussion: The COVID-19 pandemic has been associated with large decreases in office-based visits for behavioral and psychiatric conditions, although by 2020Q2 these had been offset by large increases in telemedicine visits among the conditions examined. Given concerns about the potential deleterious effects of the pandemic on the behavioral and psychiatric needs of vulnerable populations as well as the implementation of policies to mitigate such harms (4), the increases in telemedicine visits are noteworthy. However, further work is needed to establish how effectively telemedicine can reduce logistic and social barriers to mental health care. It is also unclear if the increases we note are sufficient to address the increased prevalence of

depressive and anxiety symptoms as a result of the COVID-19 pandemic (5).

Despite our analyses' insights, they provide a snapshot of dynamic processes and, like all surveys, may be prone to measurement error and bias. These limitations notwithstanding, our findings suggest profound shifts in care patterns for common behavioral and psychiatric illnesses in the United States and underscore the importance of further work to assess how different treatment settings, including the delivery of care through telemedicine platforms, may affect patients' experiences and health outcomes.

Omar Mansour, MHS

Monument Analytics, Baltimore, Maryland

Matthew Tajanlangit

James Heyward, MPH

Ramin Mojtabai, MD, PhD

Center for Drug Safety and Effectiveness, Johns Hopkins

Bloomberg School of Public Health, Baltimore, Maryland

G. Caleb Alexander, MD, MS

Center for Drug Safety and Effectiveness, Johns Hopkins

Bloomberg School of Public Health, and Johns Hopkins

Medicine, Baltimore, Maryland

Disclosures: Disclosures can be viewed at www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=M20-6243.

Reproducible Research Statement: Study protocol and data set: Not available. Statistical code: Available from Dr. Alexander (e-mail, galexan9@jhmi.edu).

Corresponding Author: G. Caleb Alexander, MD, MS, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe Street, W6035, Baltimore, MD 21205; e-mail, galexan9@jhmi.edu.

doi:10.7326/M20-6243

References

1. Cutler D. How will COVID-19 affect the health care economy? JAMA Forum. 9 April 2020. Accessed at <https://jamanetwork.com/channels/health-forum/fullarticle/2764547> on 2 June 2020.
2. Alexander GC, Tajanlangit M, Heyward J, et al. Use and content of primary care office-based vs telemedicine care visits during the COVID-19 pandemic in the US. JAMA Netw Open. 2020;3:e2021476. [PMID: 33006622] doi: 10.1001/jamanetworkopen.2020.21476
3. Ashman JJ, Rui P, Okeyode T. Characteristics of office-based physician visits, 2016. NCHS Data Brief. 2019:1-8. [PMID: 30707670]
4. Alexander GC, Stoller KB, Haffajee RL, et al. An epidemic in the midst of a pandemic: opioid use disorder and COVID-19 [Editorial]. Ann Intern Med. 2020;173:57-8. doi: 10.7326/M20-1141
5. Amsalem D, Dixon LB, Neria Y. The coronavirus disease 2019 (COVID-19) outbreak and mental health: current risks and recommended actions. JAMA Psychiatry. 2020. [PMID: 32579160] doi:10.1001/jama-psychiatry.2020.1730