

**ORIGINAL RESEARCH**

# Outcomes of Delay of Care After the Onset of COVID-19 for Patients Managing Multiple Chronic Conditions

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**Purpose:** Many patients delayed health care during COVID-19. We assessed the extent to which patients managing multiple chronic conditions (MCC) delayed care in the first months of the pandemic, reasons for delay, and impact of delay on patient-reported physical and behavioral health (BH) outcomes.

**Methods:** As part of a large clinical trial conducted April 2016–June, 2021, primary care patients managing MCC were surveyed about physical and behavioral symptoms and functioning. Surveys administered between September 3, 2020, and March 16, 2021, included questions about the extent of and reasons for any delayed medical and BH care since COVID-19. Multivariable linear regression was used to assess health outcomes as a function of delay of care status.

**Results:** Among patients who delayed medical care, 58% delayed more than once. Among those who delayed behavioral health care, 63% delayed more than once. Participants who delayed multiple times tended to be younger, female, unmarried, and reported food, financial, and housing insecurities and worse health. The primary reasons for delaying care were lack of availability of in-person visits and perceived lack of urgency. Participants who delayed care multiple times had significantly worse outcomes on nearly every measure of physical and mental health, compared with participants who delayed care once or did not delay.

**Conclusions:** Delay of care was substantial. Patients who delayed care multiple times were in poorer health and thus in need of more care. Effective strategies for reengaging patients in deferred care should be identified and implemented on multiple levels.

**Trial registration:** ClinicalTrials.gov NCT02868983. Registered on August 16, 2016. (J Am Board Fam Med 2022;00:000–000.)

**Keywords:** COVID-19, Data Analysis, Health Services Accessibility, Linear Models, Mental Health, Multiple Chronic Conditions, Outcome Assessment, Pandemics, Patient Reported Outcome Measures, Primary Health Care

## Introduction

The onset of COVID-19 dramatically impacted health care delivery across the United States<sup>1–3</sup>.

The acute need to treat patients with COVID-19 strained the US health care system, and, in anticipation of further decreases in treatment capacity,

This article was externally peer reviewed.  
Submitted 16 March 2022; revised 27 July 2022; accepted 2 August 2022.

This is the Ahead of Print version of the article.  
From University of Vermont Larner College of Medicine, Burlington, VT (GLR, LNB, JC, LWN, JRH, JO-L).

**Funding:** Research reported in this manuscript was funded through a Patient-Centered Outcomes Research Institute (PCORI) Award (PCS-1409-24372). The views, statements, and opinions presented in this report are solely the responsibility of the authors and do not necessarily represent the views of the Patient-Centered Outcomes Research Institute (PCORI), its Board of Governors or Methodology Committee. The Patient-Centered Outcomes Research Institute (PCORI) is an independent, nonprofit organization authorized by Congress in 2010. Its mission is to fund research that will provide patients, their caregivers,

and clinicians with the evidence-based information needed to make better-informed healthcare decisions. PCORI is committed to continually seeking input from a broad range of stakeholders to guide its work.

**Conflict of interest:** None of the authors have any commercial associations that pose, or have the appearance of posing, a conflict of interest in connection with the submitted article, including but not limited to employment, consultancies, stock ownership or other equity interests, patent-licensing arrangements, honoraria, paid expert testimony, personal relationships, academic competition, and intellectual passion.

PCS-1409-24372/PCORI/Patient-Centered Outcomes Research Institute/United States.

**Prior presentations:** None.

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health care systems opted to postpone elective care. Subsequently, national surveillance data showed substantial declines in Emergency Department (ED) visits and hospital admissions, even for life-threatening non-COVID related conditions<sup>4-10</sup>. Primary care contacts during March–July 2020 declined compared with prior years for symptoms indicative of urgent care needs<sup>11</sup>. Patients and providers reported substantial deferral of health care<sup>12-15</sup> and diminished practice capacity to provide routine care<sup>16</sup>. Deferrals of care due to concerns about the pandemic were more likely among individuals with multiple underlying medical conditions, disabilities, and mental health conditions.<sup>13,14,17,18</sup>

Delayed medical care is likely to continue. In a recent nationwide survey, 42% of patients indicated they would delay care (because of COVID-19) until they have a “serious concern”<sup>19</sup>. However, delay of care for chronic illnesses heightens the risk of complications or death. Lapses in disease management can result in dangerous exacerbation of or failure to recognize new symptoms, compounding the longer-term consequences for the effective management of these conditions<sup>16,19,20</sup>. Even delayed preventive care can have health consequences due to later diagnoses for conditions such as cancer<sup>21</sup>. In a survey of adults who reported having delayed or forgone health care, a third indicated that the delay worsened their health conditions or general functional capacity.<sup>14</sup>

Utilization of mental and behavioral health (BH) services also decreased in the initial months of the pandemic. Compared with predictions based on previous years, documented mental health appointments, first diagnoses of common mental health disorders, and primary care contacts for mental health disorders between March and August 2020 were far fewer than expected<sup>11,22,23</sup>. This is concerning because most BH conditions are treated in primary care rather than specialty settings, and diagnostic delays are associated with poorer outcomes.<sup>24</sup>

Reduction in BH service utilization coincided with a substantial increase in need<sup>18,25</sup>. The pandemic intensified the emotional experiences for many patients, several of whom reported their emotional support decreased or stopped altogether<sup>26-28</sup>. Psychologists reported an increased demand in 2021 for anxiety and depression treatment compared with earlier in the pandemic and 41% indicated that they are unable to meet the current demand<sup>29</sup>. Although

telehealth improved access and was well received by some<sup>12</sup>, many patients indicated that they preferred face-to-face interactions, were unable to access the internet, or stopped care because telehealth was not available<sup>27</sup>. Those who have had difficulties accessing mental health services during the pandemic have experienced reduced coping and mental health deterioration.<sup>27</sup>

Research on reasons for delaying care during the pandemic has identified practice closure and fear of virus transmission<sup>1,12,14</sup>. In addition, delay was more likely among individuals who were Black, had lost their employment, had lower incomes, were managing MCCs, and had poorer mental health<sup>14</sup>. Other than fear of virus transmission, patient-reported reasons for delaying medical and BH care during the pandemic have not been evaluated systematically. Greater knowledge of patients’ reasons for and consequences of delay, particularly among those with multiple chronic conditions (MCC), is necessary to inform strategies and allocation of resources for outreach to patients needing ongoing care.

This study takes advantage of data obtained from a clinical trial (described below) that was underway from April 2016 to June, 2021, which gave us the unique opportunity to extend our understanding of delay beyond epidemiologic reports and within a population with relatively high need for care. This study seeks to 1) characterize patients’ reasons for delaying both medical and BH care in the first several months after onset of the COVID-19 pandemic, and 2) assess the relationship between delay of care and medical and BH outcomes among a group of patients managing MCC.

## Methods

### *Setting and Sample*

This study is part of a large prospective cluster-randomized pragmatic clinical trial, Integrated Behavioral Health and Primary Care for Comorbid Behavioral and Medical Problems<sup>30</sup>, which aimed to test the comparative effectiveness of a practice-level change process designed to enhance integrated BH and improve the health of patients with multiple health conditions. Between September 2017 and December 2018 (baseline) and March 2020, and February 2021 (follow-up), we obtained self-reported demographic and health data from adults who typically received care from 1 of 41 Family

Practice or Internal Medicine clinics with a colocated BH provider(s). Delay of care data were only at obtained at follow-up. Practices varied widely in size and were located in urban, suburban, and rural areas of 13 US states, predominantly from the regions of the West Coast, Northeast, Southeast, and Midwest. The sample included community health centers, federally qualified health centers, nonprofit and for-profit organizations, resident training sites, academic medical centers, hospital or health system-owned, and privately owned. Patient-reported outcomes were assessed at 3 time points over 2 years.

Participants from both experimental and control sites were included in this analysis because the question of whether care was delayed applies equally to practices with colocated and fully integrated behavioral health care.

### **Measures**

#### *Delay of Care*

Delay of care was assessed using items developed by our team of researchers, clinicians, and patient partners. Patients were asked to report if, because of the COVID-19 pandemic, they had delayed getting 1) medical care for something other than COVID-19 testing or treatment, and 2) BH care. For each item, patients who reported not delaying care were asked if it was because they did not need any medical/BH care since COVID-19 began, or because they received the care when they needed it. If the patient reported delaying care, they were asked if they delayed more than once. Multiple instances of delay were thought to reflect greater need. Finally, patients reported reason(s) for the delay, with several possible reasons provided, plus “other” with an open-ended text field. Respondents could check all that applied. See Appendix for survey items.

#### *Health Outcomes*

The Patient-Reported Outcomes Measurement Information System<sup>31</sup> measures 8 domains of physical and BH functioning (physical function, anxiety, depression, fatigue, sleep disturbance, social functioning, pain intensity and pain interference), from which physical and mental health summary scores are calculated. Higher scores indicate better functional health. Reported Minimum Clinically Important Difference values range between 2 and 6 depending on the subscale and population studied.<sup>32–35</sup>

The Duke Activity Status Index<sup>36</sup> is a 12-item self-assessment of 1’s ability to perform various common activities that correlates significantly with peak oxygen consumption. We converted the DASI to Metabolic Equivalent of Task (METs) units (range = 2.74–9.89) where higher METs indicate better functional capacity.

The General Anxiety Disorder-7<sup>37</sup> and Patient Health Questionnaire<sup>34</sup> are brief questionnaires that measure anxiety and depression symptom severity on continuous scales from 0 to 21 and 0 to 27, respectively. Higher scores indicate greater severity. For both questionnaires, a 20% reduction of scores (or approximately 1.5–3.7 points) is considered a Minimum Clinically Important Difference.<sup>38,39</sup>

#### *Covariates*

Clinical expertise and prior literature were used to determine potential covariates included in the multivariable models. Demographic variables, a binary indicator of the presence of any 1 or more of 3 indicators of social instability (food, housing, or financial insecurity), the number of chronic conditions, time into the COVID-19 pandemic calculated as the date of survey minus March 13, 2020, and the Social Deprivation Index (SDI) were included. The SDI is an aggregate measure of neighborhood social deprivation based on census tract level income, education, employment, housing, single parent household, and access to transportation. Higher scores indicate greater deprivation. Finally, for each outcome, we included the baseline measure of that outcome as a covariate. For instance, we accounted for baseline mental health summary score when assessing the relationship between delay of care and mental health summary score at follow-up.

#### *Analysis*

On the delay survey, the open-ended responses for “other reasons” were coded independently by 2 members of the research team with experience in qualitative methods. The codes list included the reasons provided in the survey and additional codes created to characterize respondents’ free text answers. The 2 coders compared their coded lists and a third team member acted as arbiter. The 3 researchers discussed all responses that were ambiguous.

We summarized demographic, social, and health information by 3 delay of care categories (ie, no

delay, delayed care once, delayed care more than once) for both medical and BH care. We also summarized the patient-reported reasons for delaying both medical and BH care. Chi-square tests and bivariate linear regression were used to test differences between demographic, social, and health characteristics by delay of care status. We considered using multilevel linear models with a random intercept for primary care practice of the participant. However, the likelihood ratio test determined the additional level was unnecessary, so for the sake of simplicity and parsimony we used traditional multivariable linear regression models with Stata (version 16; StataCorp LLC, College Station, Texas).

## Results

### *Participant Characteristics*

Participant characteristics are shown in Table 1. The average age was 63. The majority were female (66%), non-Hispanic (92%), white (77%), unmarried (53%), unemployed or retired (71%), and had annual incomes <\$30,000/year (50%). Surveys were administered between September 2020, and March, 2021, a median of 227 days (IQR 208 to 243) after March 13, 2020. 23% of participants experienced food, financial, or housing insecurities and the median neighborhood SDI was 56 (IQR 30 to 75). The median number of chronic medical and BH conditions was 4 (IQR 3 to 5).

### *Delay of Care*

Of the 2,179 participants that completed the post-intervention survey question on delaying medical care, 221 (10%) reportedly did not need medical care. Of those who needed care, 770 (32%) delayed care at least once, and of those, 447 (58%) delayed more than once.

Of 2,162 participants who had complete data on delaying BH care, 1,420 (66%) said they did not need BH care. Of those who needed care, 193 (19%) delayed care at least once, and of those, 122 (63%) delayed care more than once. On average, participants that delayed either medical or BH care more than once were younger, female, unmarried, and had 1 or more (food, financial, or housing) insecurities and worse health than those who delayed only once or did not delay medical or BH care.

Rates of endorsement of the various reasons for delay are shown in Table 2. The majority of reasons

selected had to do with lack of availability of in-person visits (ie, The combined categories of *practice was not scheduling visits*, *patient prefers in-person visits*, and *patient cannot do video or phone visits* accounted for 73% of reasons selected for medical care delay and 85% for BH care delay). The second most common category of reasons was perceived lack of urgency (ie, The combination of *symptoms were mild enough to wait* and *did not want to bother my provider* was 47% for medical and 40% for BH appointments). Contrary to prior research, *fear of contracting COVID-19* was only the third most common reason, having been selected by 41% for medical and 30% for BH care.

The category “other reason” for medical or BH delay was selected by 155 respondents. After review of free text responses, 21 instances were reclassified into existing categories, leaving 15% of medical and 19% of BH care reasons in the “other” category. Of these, sufficient numbers of responses were related to finances or inconvenience, so we created 2 new categories to capture those (see Table 2). “Other” responses for 11% of medical and 14% of behavioral delays did not specify a reason and 3 responses could not be coded due to insufficient information (eg, “personal”).

The frequency of the individual reasons selected for medical vs BH care delay were in almost identical order except that *my symptoms were mild enough to wait* was the third reason endorsed for medical care delay but was the fourth most frequent reason for BH care delay. *Prefer in person visits* was third for BH care and fourth for medical.

### *Association between Delay of Care and Health Outcomes*

As presented in Table 3, unadjusted models showed that patients who delayed medical or BH care only once had similar health outcomes as those who did not delay care. However, patients who delayed care more than once had significantly lower mental and physical health summary scores and higher severity of depression and anxiety symptoms compared with those who did not delay care. The only variable not significantly associated with delay of care was METs score, although it went in the expected direction. These relationships persisted after adjusting for demographic, social, and health information (See Table 3).

The adjusted multivariable models for delay of medical and BH care analyses had missing data on

**Table 1. Baseline Characteristics of Participants from the IBH-PC Trial Who Were Included in the Delay of Care Analysis**

Baseline Characteristic	Delay of Medical Care			P†
	No Delay in Medical Care (n = 1188)	Delayed Care Only Once (n = 323)	Delayed Care More than Once (n = 447)	
Mean Age ± SD (years)	65 ± 13	62 ± 13	61 ± 13	<0.001
Male (%)	419 (35%)	122 (38%)	123 (28%)	0.004
White race (%)	893 (76%)	261 (83%)	351 (80%)	0.02
Hispanic (%)	88 (8%)	18 (6%)	37 (8%)	0.34
Married (%)	540 (46%)	174 (54%)	201 (45%)	0.02
Working (%)	296 (25%)	118 (37%)	145 (32%)	<0.001
Income <\$30,000 (%)	600 (51%)	128 (41%)	238 (54%)	<0.001
College graduate (%)	500 (57%)	174 (54%)	240 (55%)	<0.001
Presence of food, housing, or financial insecurities (%)	228 (19%)	72 (22%)	147 (33%)	<0.001
Mean neighborhood social deprivation index ± SD (units)	54 ± 28	50 ± 28	52 ± 28	0.17
Time between baseline and follow-up surveys (days)	227 ± 38	223 ± 29	225 ± 25	0.08
Mental health summary score‡	51 ± 9	51 ± 8	47 ± 8	<0.001
Physical health summary score‡	45 ± 10	46 ± 10	43 ± 9	<0.001
PHQ-9 depression score‡	5.2 ± 5.4	5.6 ± 5.3	7.6 ± 6.0	<0.001
GAD-7 anxiety severity‡	3.6 ± 4.9	4.0 ± 4.7	5.6 ± 5.3	<0.001
Cardiovascular capacity (METs) ‡	6.2 ± 2.0	6.6 ± 2.1	6.2 ± 2.0	0.006

  

Baseline Characteristic	Delay of Behavioral Health Care			P
	No Delay in Behavioral Health Care (n = 549)	Delayed Care Only Once (n = 71)	Delayed Care More than Once (n = 122)	
Mean Age ± SD (years)	60 ± 14	57 ± 12	56 ± 14	<0.001
Male (%)	172 (32%)	24 (34%)	32 (26%)	0.42
White race (%)	410 (76%)	47 (71%)	88 (73%)	0.61
Hispanic (%)	48 (9%)	3 (5%)	13 (11%)	0.36
Married (%)	206 (38%)	28 (39%)	44 (36%)	0.89
Working (%)	144 (26%)	28 (40%)	37 (30%)	0.05
Income <30K (%)	330 (61%)	37 (53%)	79 (65%)	0.24
College graduate (%)	231 (43%)	33 (47%)	64 (54%)	0.09
Presence of food, housing, or financial insecurities (%)	161 (29%)	30 (42%)	65 (53%)	<0.001
Mean neighborhood social deprivation index ± SD (units)	57 ± 28	55 ± 27	59 ± 26	0.50
Time between baseline and follow-up surveys (days)	223 ± 26	224 ± 29	224 ± 26	0.08
Mental health summary score‡	48 ± 9	45 ± 9	42 ± 7	<0.001
Physical health summary score‡	44 ± 10	45 ± 9	40 ± 9	<0.001
PHQ-9 depression score‡	7.9 ± 6.5	9.6 ± 7.1	11.6 ± 6.5	<0.001
GAD-7 anxiety severity‡	6.0 ± 5.9	7.4 ± 5.7	9.1 ± 6.0	<0.001
Cardiovascular capacity (METs) ‡	6.1 ± 2.0	6.3 ± 1.9	5.6 ± 2.0	0.006

Abbreviations: IBH-PC = Integrated Behavioral Health in Primary Care, the parent study; SD, standard deviation; PHQ, patient health questionnaire; GAD, generalized anxiety disorder; MET, metabolic equivalents.

†P value represents comparison among the 3 groups in the corresponding row using  $\chi^2$  tests for categorical variables and Kruskal-Wallis tests for continuous variables.

‡Measured at time of delay assessment.

**Table 2. Reasons for Delaying Care Reported by Participants in the IBH-PC Delay of Care Analysis**

Reasons for delaying medical care and behavioral health care (Yes)	Medical (N = 770)	BH (N = 193)
I could catch COVID-19	317 (41%)	58 (30%)
My practice was not scheduling visits	386 (50%)	87 (45%)
I didn't want to bother my provider or the clinic staff	98 (13%)	31 (16%)
I thought my symptoms or concerns were mild enough to wait	260 (34%)	47 (24%)
I prefer in person visits and the clinic was only offering video or phone visits	127 (17%)	55 (29%)
I can't do video or phone	42 (6%)	21 (11%)
Some other reason or reasons	118 (15%)	37 (19%)
Financial	8 (1%)	4 (2%)
Inconvenience	21 (3%)	6 (3%)
Unclear	3 (0%)	0 (0%)
No reason provided	86 (11%)	27 (14%)

Abbreviations: IBH-PC = Integrated Behavioral Health in Primary Care.

Data were collected at the follow-up assessment. Participants could select multiple reasons. Percentages refer to the percent of participants who selected that reason and therefore don't sum to 100%.

4% and 9% of records, respectively. There were no significant differences in demographic or health information between participants with and without complete data included in the final analyses.

## Discussion

Substantial numbers of patients managing MCC who needed care during the initial months of the COVID-19 pandemic did not receive this care. Consistent with other recent reports (Gonzalez et al., 2021), fewer patients said they needed BH than medical care but those who did were more likely to delay multiple times, and patients with food, housing, or financial insecurities were more likely to delay both medical and BH care<sup>13,14,25</sup>. Other studies - both surveys and records reviews - have reported slightly higher rates of self-reported delay and lower rates of utilization for medical and BH care during the pandemic than we observed in this study<sup>13,14</sup>. It is difficult to compare studies with different populations, time frames and methods but we speculate that these patients in our sample, who all had a greater need for care than the general population, showed evidence of medical utilization, and had prior access to BH services were less likely to put their health at risk by delaying care.

Patients delayed care primarily due to lack of availability of in-person visits. In comparison, other patient-reported care delay surveys only asked if delay was due to their own concern or the provider canceling the visit<sup>12,14,15</sup>. Our novel

survey of patient-reported reasons for delay included a broader range of reasons and allowed us to discover the importance of in-person visits for this vulnerable population. This, combined with the finding that delay of care more than once was associated with later adverse outcomes, suggests that patients in need of more frequent and consistent health care may be more vulnerable to lost opportunities to engage with their preference of in-person care.

The timing of our assessments allowed us to observe delay of care for the initial months of the pandemic. On average, the assessment took place 227 days (approximately 7 months) after COVID-19 onset, and after most lockdowns had been lifted. We were unable to evaluate health care delays that may have occurred in late 2020 and the months to follow, during which infection, hospitalization, and mortality rates (and associated economic and social disruptions) increased. We suspect many more patients postponed visits in the ensuing months and that ongoing disruptions to social networks, etc., compounded existing risk factors for patients in vulnerable circumstances. Similarly, it is possible that reasons for delaying care changed over time, and that outcomes varied based on these reasons.

## Study Strengths and Limitations

This study was an extension of a clinical trial that recruited a large sample of primary care patients who were likely to need access to routine medical and BH care during the study interval. This created

**Table 3. Mental and Physical Health Outcomes Reported at Follow-up as a Function of Delaying Medical and Behavioral Health Care**

Outcome by Delay Category	Unadjusted	95% CI	P	Adjusted	95% CI	P
Delay of Medical Care						
*Mental Health Summary Score						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	-0.76	-1.82, 0.17	0.16	-0.61	-1.29, 0.07	0.08
Delayed Care >1	-4.20	-5.10, -3.24	<0.001	-1.27	-1.87, -0.66	<0.001
*Physical Health Summary Score						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	0.77	-0.40, 1.95	0.20	-0.56	-1.28, 0.17	0.13
Delayed Care >1	-2.47	-3.52, -1.44	<0.001	-1.26	-1.91, -0.61	<0.001
PHQ-9						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	0.41	-0.27, 1.10	0.24	0.19	-0.30, 0.69	0.48
Delayed Care >1	2.41	1.81, 3.02	<0.001	0.84	0.39, 1.28	<0.001
GAD-7						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	0.40	-0.21, 1.01	0.20	0.05	-0.40, 0.49	0.84
Delayed Care >1	2.02	1.48, 2.56	<0.001	0.71	0.32, 1.10	<0.001
*METs						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	0.37	0.12, 0.62	0.004	-0.12	-0.28, 0.41	0.14
Delayed Care >1	-0.06	-0.29, 0.04	0.61	-0.07	-0.22, 0.08	0.36
Delay of Behavioral Health Care						
*Mental Health Summary Score						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	-2.42	-4.53, -0.30	0.03	-0.65	-2.01, 0.80	0.38
Delayed Care >1	-5.56	-7.23, -3.88	<0.001	-1.70	-2.83, -0.57	0.003
*Physical Health Summary Score						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	0.63	-1.68, 2.94	0.60	0.49	-1.00, 2.00	0.52
Delayed Care >1	-3.94	-5.77, -2.11	<0.001	-1.17	-2.34, -0.01	0.05
PHQ-9						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	1.73	0.09, 3.36	0.04	0.79	-0.45, 2.04	0.21
Delayed Care >1	3.68	2.38, 4.98	<0.001	1.17	0.20, 2.14	0.02
GAD-7						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	1.40	-0.06, 2.85	0.06	0.29	-0.97, 1.37	0.60
Delayed Care >1	3.12	1.96, 4.28	<0.001	1.34	0.49, 2.20	0.002
*METs						
No Delay in Care (ref)	—	—	—	—	—	—
Delayed Care Once	0.26	-0.25, 0.76	0.32	0.04	-0.32, 0.40	0.83
Delayed Care >1	-0.52	-0.91, -0.12	0.10	-0.26	-0.53, 0.02	0.07

Abbreviations: PHQ, patient health questionnaire; GAD, generalized anxiety disorder; MET, metabolic equivalents.

\*Higher scores indicate better health.

Adjusted models control for baseline outcome measure, age, sex, race, ethnicity, marital status, income, employment, count of chronic conditions, neighborhood social deprivation, food, housing, and financial social determinants of health, and time into the COVID-19 pandemic.

a unique opportunity to better understand delayed care and resulting consequences in this population during the early months of the pandemic. Because of our setting and selection criteria, these participants likely had more regular access to care, including BH care, than the US adult population.

The ability of our design to capture consequences of delayed care is a unique strength. However, considering the opportunistic and unpredicted nature of this extension study, we were constrained in our choice of measures and design. Patient-reported retrospective recall of delay may be less reliable than an objective assessment, but the questions on our survey were framed around the pandemic, a highly salient event, likely improving recall. The questions about delaying care were added to an existing survey and therefore concerns about participant burden limited the number of new questions we could include. A prepost assessment of delayed care might have strengthened causal inferences, and a qualitative assessment would have enabled an exploration of other contextual factors possibly influencing any care they delayed.

### Conclusion and Implications

When delivery of services is disrupted on such a large scale, identifying and implementing effective strategies for re-engaging patients in their care becomes essential, particularly for patients with adverse social circumstances, chronic conditions, and those who have delayed care multiple times<sup>7,14,15,23</sup>. Possible strategies to ensure patients get sufficient care and to avoid excessive postpandemic surge in demand related to deferred care may include national communication campaign initiatives designed to encourage seeking care; specification of priorities and triage for hospitals and health clinics; funding for expansion of telehealth, virtual visits and other remote systems of care delivery; local clinic communications to patients to assuage fears and clarify COVID-19 safety precautions and policies for requesting and receiving care; prioritizing patients who truly need in-person care, and taking steps to increase disease self-management and care coordination, particularly for patients with health disparities. As local and federal resources get deployed to re-engage patients in their care, research on the drivers of care deferral and efficacy of various outreach methods for patients

who miss medical and BH appointments is needed.

These findings are relevant to the current pandemic, and to future large-scale societal disruptions that have the possibility to overwhelm the medical infrastructure of this country. Risk of future events related to climate change, terrorism, or political upheaval are increasing and careful planning for how to maintain adequate care for people who need it must remain a high priority for public health officials.

To see this article online, please go to: <http://jabfm.org/content/35/6/000.full>.

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## Appendix

### Delay of Care Survey

1. Because of the COVID-19 pandemic, did you delay getting **medical care** for something other than COVID-19 testing or treatment?

No, I received medical care when I needed it. *Skip to Question 2*

No, I did not need any medical care since the COVID-19 pandemic began. *Skip to Question 2*

Yes, I delayed getting medical care at least once

If yes, did you delay medical care more than once?

Yes

No

Why did you delay medical care? Check all that apply:

because I could catch COVID-19 at the medical clinic

because my practice was not scheduling visits

because I didn't want to bother my provider or the clinic staff

because I thought my symptoms or concerns were mild enough to wait

because I prefer in person visits and the clinic was only offering video or phone visits

because I can't do video or phone

Some other reason or reasons \_\_\_\_\_

2. Because of the COVID-19 pandemic, did you delay getting **behavioral health** care? **Behavioral health** refers to concerns about moods or emotions, alcohol or drug use, mental health conditions, and personal behaviors such as diet, exercise, sleep, etc.

No, I received behavioral health care when I needed it. *This is the end of the survey. Thank you for your responses!*

No, I did not need any behavioral health care since the COVID-19 pandemic began. *This is the end of the survey. Thank you for your responses!*

Yes, I delayed getting behavioral health care at least once

If yes, did you delay behavioral health care more than once?

Yes

No

Why did you delay behavioral health care? Check all that apply:

because I could catch COVID -19 at the clinic

because my practice was not scheduling visits

because I didn't want to bother my provider or the clinic staff

because I thought my symptoms or concerns were mild enough to wait

because I prefer in person visits and the clinic was only offering video or phone visits

because I can't do video or phone

Some other reason or reasons \_\_\_\_\_