Economic and Clinical Impact of COVID-19 on Provider Practices in Massachusetts

Interim Results: May 20 – June 17, 2020

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Zirui Song, MD, PhD[1,2,3], Mia Giuriato, MA[1], Timothy Lillehaugen, MPH[1], Wayne Altman, MD, FAAFP[4], Daniel Horn, MD[1,2], Russell S. Phillips MD[1,3,5], Katherine Gergen Barnett, MD[6,7], Asaf Bitton, MD, MPH[8,9,10], Susan Edgman-Levitan, PA[2,11], Elisa Choi, MD, FACP, FIDSA[12], Paul Hattis, MD, JD, MPH[4,13], M. Diane McKee, MD, MS[14,15], David Auerbach, PhD[17]

1. Harvard Medical School
2. Massachusetts General Hospital
3. Center for Primary Care, Harvard Medical School
4. Tufts University School of Medicine
5. Beth Israel Deaconess Medical Center
6. Boston University Medical School
7. Boston Medical Center
8. Ariadne Labs
9. Brigham and Women's Hospital
10. Harvard T.H. Chan School of Public Health
11. John D. Stoeckle Center, Massachusetts General Hospital
12. Massachusetts Chapter, American College of Physicians
13. Tufts University Public Health Program
14. University of Massachusetts Medical School
15. UMass Memorial Medical Center
16. Health Policy Commission, Commonwealth of Massachusetts

Correspondence: Zirui Song, MD, PhD, Department of Health Care Policy, Harvard Medical School, 180 Longwood Avenue, Boston, MA 02115, e-mail: song@hcp.med.harvard.edu

Summary of Key Findings

- **Study population:** Respondents included 396 practices across specialties in Massachusetts, from small independent private practices to large provider organizations, over 28 days from May 20 through June 17, 2020. (p.4)

- **Workforce:** Cumulatively, 25% of non-clinical staff, 27% of nurses/other clinical staff, and 16% of nurse practitioners or physician assistants were reportedly furloughed or laid off due to COVID-19. Fewer physicians were out of practice. (p. 6)

- **Patient visits:** In-person visits declined by 78% after March 2020, driven by fewer visits to primary care and specialty practices, with half of this decline substituted by telehealth visits. Telehealth substitution for in-person visits was more complete in behavioral health. (p. 7)

- **Clinical activity:** About 70-80% of procedures, imaging, tests, and referrals were canceled or deferred in primary care, specialty practices, and those other than behavioral health. (p. 8)

- **Telehealth capacity:** Practices on average reported reaching about two-thirds of their full capacity for telehealth, led by behavioral health and primary care. (p. 9)

- **Revenues and expenses:** Practice revenues declined more than did practice expenses after COVID-19. Independent practices reported larger percent reductions in revenues relative to expenses (42% reduction in revenues vs. 18% reduction in expenses among independent primary care practices) than did non-independent practices. (p. 9)

- **Practice responses:** Over 60% of practices reported they would cut salaries of providers or employees, cut services or other operating expenses, and furlough or lay off more employees without additional financial assistance, with a roughly 40% likelihood of following through. Consolidation, selling, or closing the practice were reported by 20-40% of practices, driven by independent practices such as primary care (60% noted closure at 21% likelihood). (p. 11)

- **Payment preferences:** Going forward, smaller practices preferred pure fee-for-service to alternative payment models including global payment, while larger practices had a stronger preference for global payment. Independent behavioral health and specialist providers were more likely to clearly prefer pure fee-for-service, while primary care providers viewed global payment more favorably relative to pure fee-for-service than did other providers. Practices not infrequently reported a strong preference for pure fee-for-service over alternative models despite reporting economic peril caused by the decline in visits and utilization. (p. 14)

- **Stories:** Respondents offered anecdotes of patient impact, personal impact, practice impact, and more, such as the following: "*We are working twice as hard, for half the result. It is exhausting and disheartening. Everyone, providers and staff, is burning out*" and "*I have never until now feared for my practice's viability. I don't think any amount of financial assistance will get us to pre-COVID19 operation levels. The amount of renovation needed to make the space safe for that volume is not possible.*" (p. 16)

Introduction

The COVID-19 pandemic has substantially disrupted the U.S. health care system and economy. Beyond the nearly 2.2 million infections and 120,000 deaths reported in the U.S. to date,[1] 45.7 million workers have filed for unemployment over the last 13 weeks, encompassing about 1.5 million health care jobs that were lost in March and April 2020 alone.[2,3]

As millions of patients stayed home nationally, large amounts of outpatient care were canceled or deferred. By April, outpatient visits nationwide had declined 60%.[4] Reports from hospitals offered anecdotes of about 30% declines in inpatient admissions, 50% reductions in emergency department visits, and 70% reductions in outpatient procedures compared to the same time last year.[5] The expansion of telehealth and payment for telehealth by Medicare and other payers have helped practices maintain some elements of care delivery and provided a revenue stream,[6] but telehealth visits have not completely substituted for the foregone in-person visits.[3]

With a largely fee-for-service payment system nationwide, many practices—small businesses that depend on in-person visits for revenue—found themselves in financial peril.[7,8] Stories of practices furloughing additional workers, cutting salaries, and nearing closure or selloff grew.[9] Early survey data of physician practices from several states showed large declines in visits and revenue in April.[10,11] Despite these signals of economic distress, comparative evidence on how primary care, behavioral health, medical and procedural specialties, and other provider practices have fared under COVID-19 remains scant.

Through a partnership of clinicians, researchers, and public and private entities in the Commonwealth of Massachusetts, we queried provider practices about the impact of COVID-19 on their clinical and economic activities using a survey hosted by Harvard Medical School. This practice-level survey gathered detailed data on workers furloughed or laid off, clinical activities deferred or canceled, changes in revenues and expenses, economic relief received, and practices' foreseeable plans, including cutting costs, consolidation, and closure.

Methods

Survey Design

The survey was fielded in Massachusetts over 4 weeks from May 20 through June 17, 2020. All health care provider practices including physician and non-physician practices were eligible. The survey was developed by the authors and administered via electronic invitations. The survey instrument in its entirety is shown in Appendix 1. Participation was voluntary, and there was no deadline imposed. Each question on the survey was optional, and respondents could stop at any point. All responses were kept confidential on the Harvard Medical School survey platform. All results are reported in aggregate, without revealing any practice identities.

An open invitation to participate in the survey was sent on May 20, 2020 to a general distribution list provided by the Massachusetts Medicaid program (MassHealth). This included providers who have a relationship with MassHealth and those who have voluntarily signed up to receive bulletin updates from MassHealth via e-mail. In the ensuing days, several reminders were sent.

In addition, invitations were sent to organizations representing providers across the state with an encouragement to consider offering this survey to their members.

Analysis

Completed responses and responses in which 50% or more of the questions were at least partially answered were included in the analysis. Aggregate analyses of each question contained completed responses for that question. For answers that were provided in ranges (e.g. "90-100"), we recoded these at their midpoint (e.g. 95).

For questions that asked about information before and after March 2020, ascertaining how an outcome changed from before to after the COVID-19 pandemic, we included responses only when data were provided for both before and after March 2020. In other words, if a practice provided data for before March 2020 but not after, or vice versa, the response was excluded from analysis. These questions focused on number of workers, visits, and revenues and expenses.

Responses for some questions, such as clinical visits or revenues and expenses, were scaled by the total number of clinical workers within the respondent's practice, defined as the sum of full-time equivalent (FTE) physicians, nurse practitioners, physician assistants, nurses, and other clinical personnel. Aggregate responses reflecting the average clinician were further weighted by clinical FTEs at the practice level. This gave larger weight to larger practices. On the other hand, aggregate responses reflecting the average practice were unweighted, which gave small and large practices equal weight.

Responses were aggregated overall and by categories of provider specialty, which includes primary care, behavioral health, medical and procedural specialties, and all other providers. This latter category included physical therapy, chiropractor practices, dentistry, community health centers, and other providers. In addition, we analyzed responses from primary care and non-primary care practices by type of affiliation, defined in a binary fashion as independent (privately owned) and non-independent (which includes hospital or health system owned). Further details regarding data cleaning and processing are provided in Appendix 2. The Harvard Institutional Review Board approved this research study.

Results

A total of 1,214 individuals accessed or began the survey between May 20 and June 17 2020, from which 396 completed and eligible responses were included in the analysis. Table 1 shows distribution of responses by specialty and practice affiliation. On average, practices had 20.0 clinical FTEs and 20.9 non-clinical FTEs.

Characteristics of Practices

Primary care practices comprised 29% of the sample, averaging 21.8 clinical FTEs and 18.8 non-clinical FTEs per practice. Slightly over half (53%) were independent practices, which were considerably smaller (9.5 clinical FTEs and 8.0 non-clinical FTEs per practice) than non-independent primary care practices, which averaged 35.4 clinical and 30.7 non-clinical FTEs.

Behavioral health practices accounted for 24% of the sample, averaging 10.2 clinical FTEs and 2.5 non-clinical FTEs per practice. Medical and procedural specialties were 18% of the sample and averaged 37.5 clinical FTEs and 41.8 non-clinical FTEs per practice (Table 1).

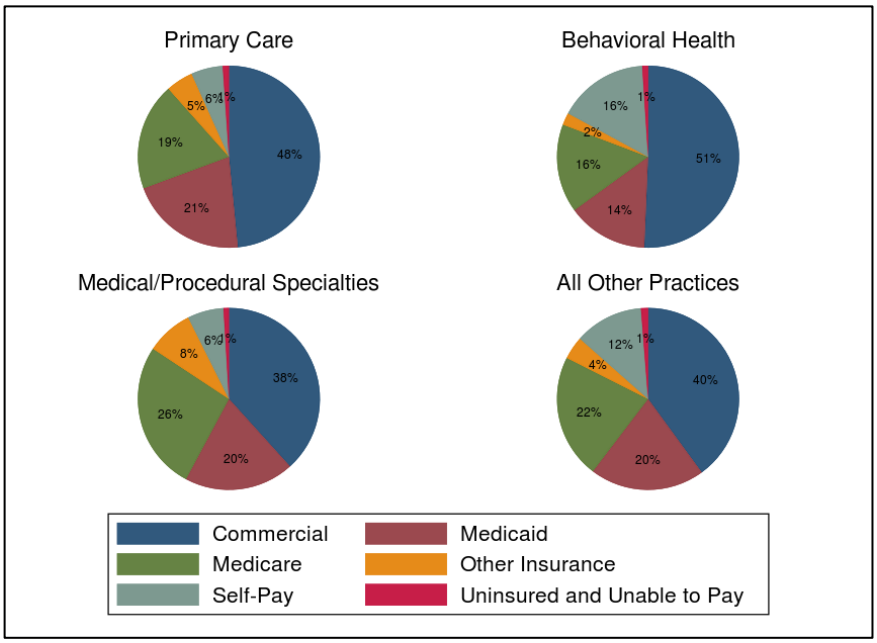
Table 1. Sample Size

	Practices (%)	Clinical FTEs	Non-clinical FTEs
By Specialty Category			
Primary Care	115 (29)	21.8	18.8
Behavioral Health	95 (24)	10.2	2.5
Medical/Procedural Specialties	71 (18)	37.5	41.8
All Other Practices	115 (29)	13.5	26.7
By Practice Affiliation			
Primary Care—Independent	61 (15)	9.5	8.0
Primary Care—Non-independent	54 (14)	35.4	30.7
Other Providers—Independent	166 (42)	6.5	8.4
Other Providers—Non-independent	115 (29)	42.4	45.5
Total	396 (100)	19.8	20.9

Notes: FTEs is full-time equivalents. Clinical FTEs include physicians, nurse practitioners, physician assistants, nurses, and other clinical personnel. Non-clinical FTEs include all other staff.

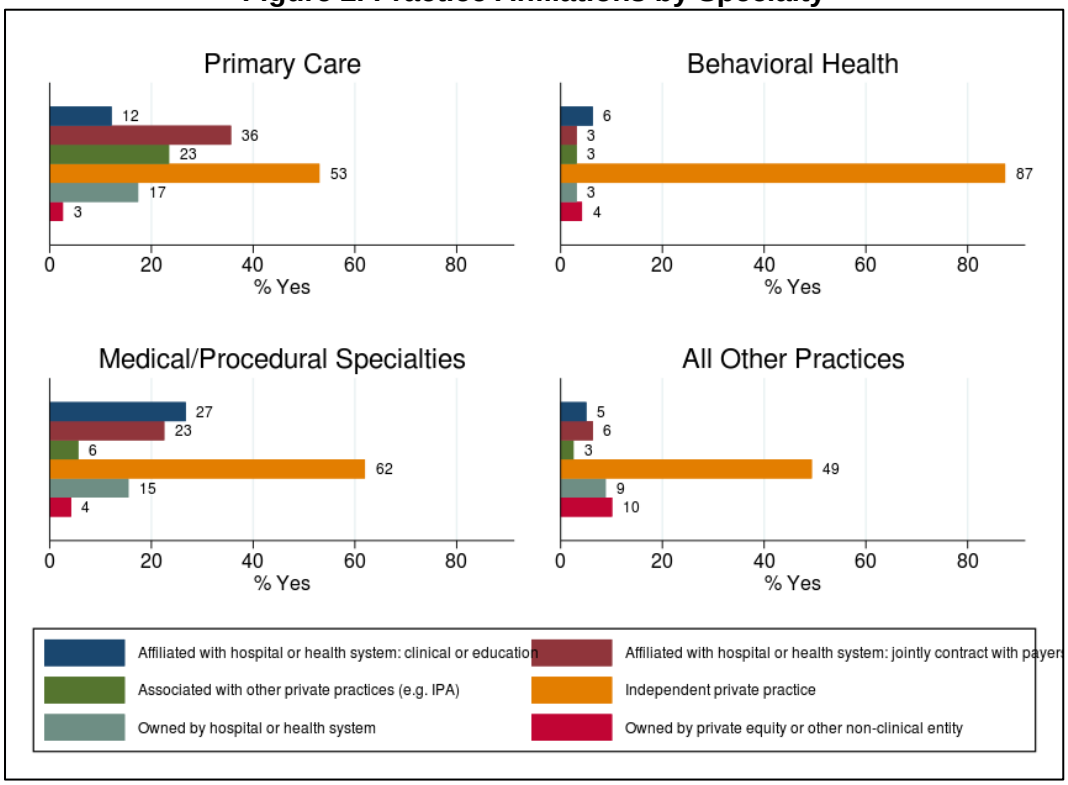
Among all respondents, commercial payers accounted for 45% of practices' patients on average, followed by Medicare (20%), Medicaid (19%), self-pay (10%), other insurance (5%), and lastly uninsured and unable to pay (1%) (Appendix 3). This general pattern was consistent across provider categories (Figure 1). Behavioral health had larger proportions of commercially insured and self-pay patients than other provider categories.

Figure 1. Practice Payer Mix by Specialty



About 53% of primary care practices reported independent, private practice status, 36% reported a hospital or health system affiliation for contracting purposes, and 12% reported a hospital or health system affiliation for clinical or educational purposes. Behavioral health respondents were overwhelmingly independent private practices.

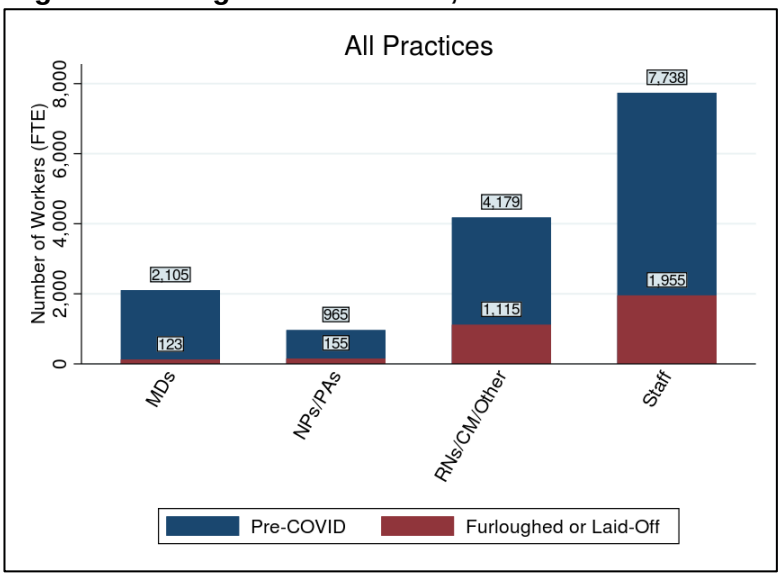
Figure 2. Practice Affiliations by Specialty



Changes in Workforce

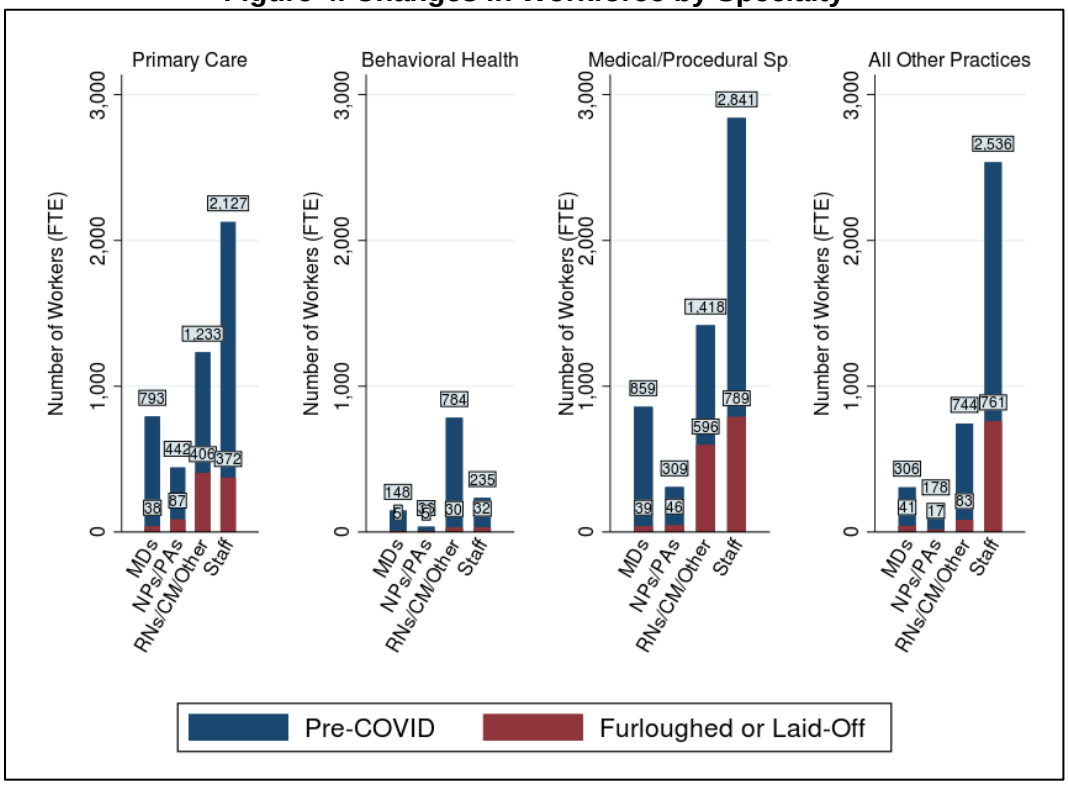
Summed across all practices, the number of workers before COVID-19 (defined as March 2020) and furloughed or laid off due to COVID-19 are shown in Figure 3. There were 7,738 FTE non-clinical staff across all practices in the sample, among whom 1,955 (25.3%) FTEs were reported furloughed or laid off at the time of data collection. Analogously, 26.7% of nurses, case managers, and other clinicians were furloughed or laid off. The proportion of advanced practice providers (NPs/PAs) furloughed or laid off was lower at 16.1%, and that for physicians was the lowest at 5.8% (123 of 2,105 physician FTEs).

Figure 3. Changes in Workforce, All Practices



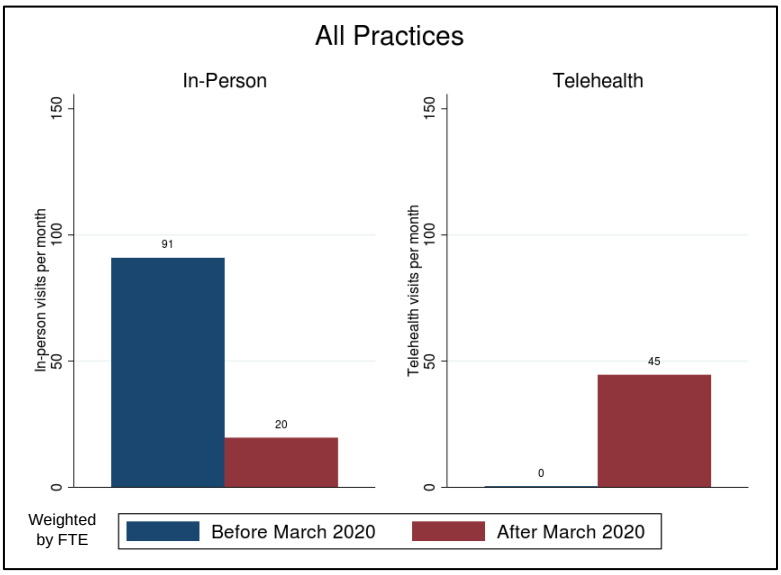
Findings by specialty category are shown in Figure 4. There were sizeable reductions in nurses and other clinical staff as well as non-clinical staff in primary care and medical and procedural specialties. Behavioral health reported the lowest share of workers affected. Findings for primary care and all other practices by affiliation are shown in Appendix 4.

Figure 4. Changes in Workforce by Specialty



Changes in Clinical Activity

Figure 5. Changes in Monthly Visits, All Practices

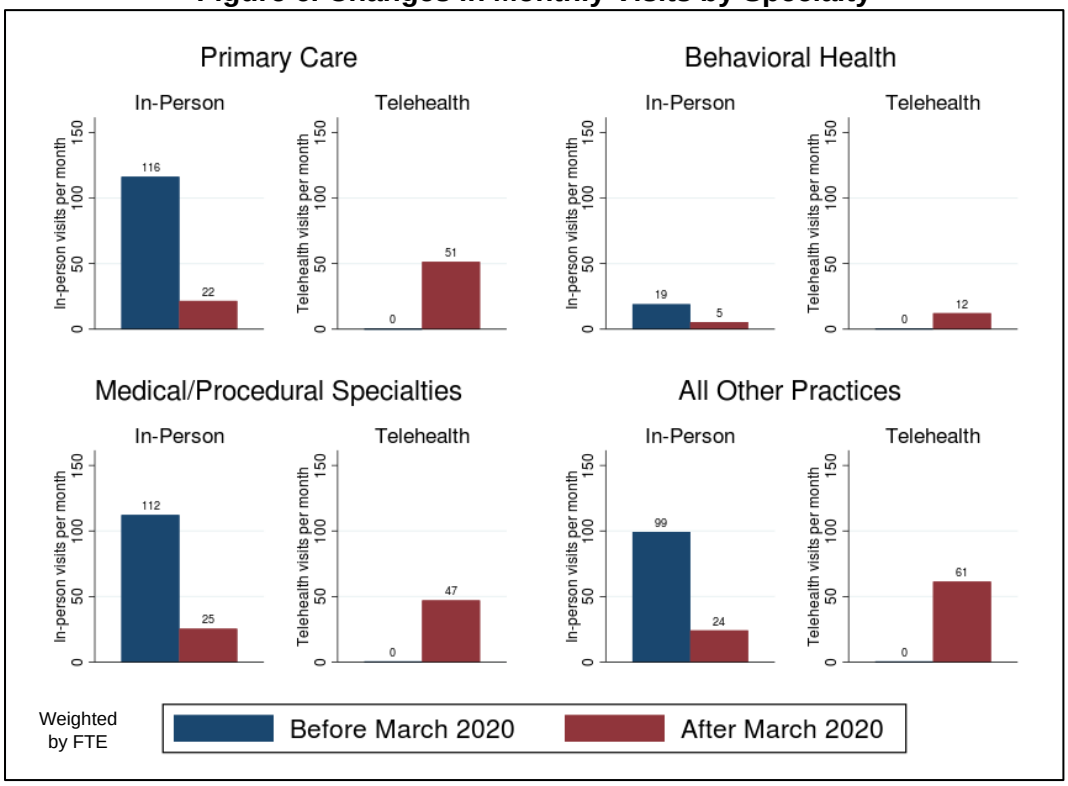


Across all practices, in-person visits per clinical FTE per month averaged 91 pre-COVID and declined to 20 post-COVID, a reduction of 71 in-person visits (78%). Meanwhile, telehealth visits per clinical FTE per month increased from essentially none pre-COVID to 45 post-COVID, thus making up a little over half of the decline in in-person visits (Figure 5).

Decomposed by specialty category, the declines in in-person visits were similar for primary care (81%), behavioral health (74%), medical and procedural specialties (78%), and all other practices (76%). All specialty categories reported incomplete

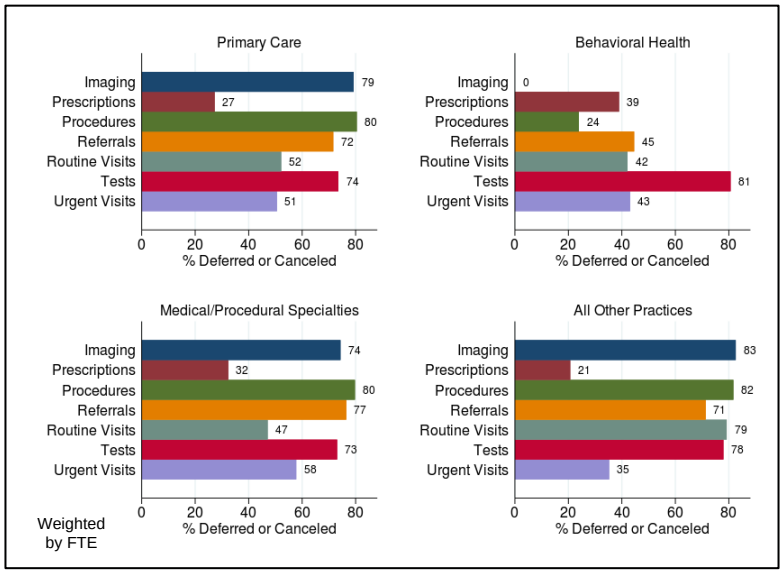
substitution of in-person visits by telehealth with the exception of behavioral health, which was able to almost fully substitute for the decline in in-person visits with telehealth (Figure 6).

Figure 6. Changes in Monthly Visits by Specialty



Both independent and non-independent practices reported large reductions in in-person visits, with a smaller share replaced by telehealth among independent practices (Appendix 5).

Figure 7. Changes in Clinical Activity by Specialty



The reported shares of several categories of clinical activities deferred or canceled due to COVID-19 are shown in Figure 7. Within primary care, specialty, and other practices, reductions on the order of 70% to 80% of procedures, imaging, tests, and referrals were reported to be canceled or deferred. Again, behavioral health was an exception, with smaller shares of some of these activities deferred. The proportion of visits affected differed in some cases relative to analogous calculations from the previous question, accounting for the incomplete substitution by telehealth. The proportion of prescriptions affected was smaller for all practices. Similar patterns were found among independent and non-independent practices (Appendix 6).

On average, practices reported achieving approximately 67% of their full capacity for telehealth at the time of survey completion. ("Full capacity" was defined as telehealth use by all clinicians in a practice with adequate technology for doing so.) Behavioral health practices reported an average of 88% of full capacity reached, whereas medical and procedural specialties and other practices were roughly halfway to full capacity. Primary care reported an average capacity of 71%. Similar responses were found among independent and non-independent practices (Table 2).

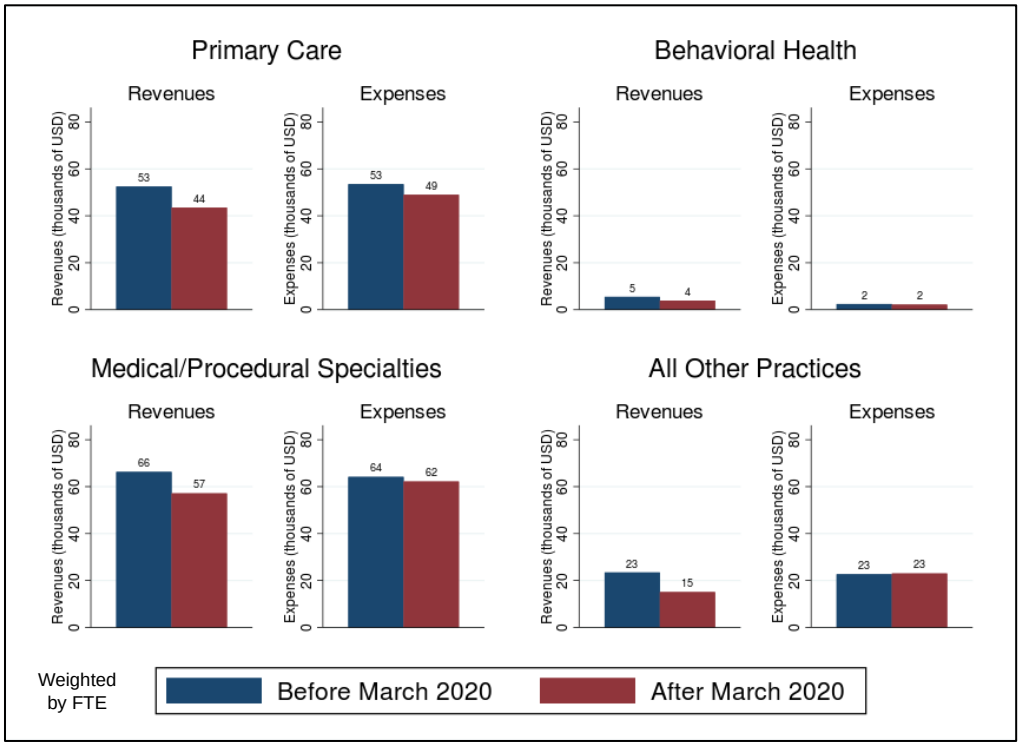
Table 2. Percent of Full Capacity for Telehealth Reached

	Practices	Mean	Std. Dev.
By Specialty Category			
Primary Care	113	71	28
Behavioral Health	93	88	21
Medical/Procedural Specialties	69	50	39
All Other Practices	87	53	42
By Practice Affiliation			
Primary Care—Independent	60	70	29
Primary Care—Non-independent	53	73	27
Other Providers—Independent	158	66	40
Other Providers—Non-independent	91	64	37
Total	**362**	**67**	**36**

Notes: FTEs is full-time equivalents. Clinical FTEs include physicians, nurse practitioners, physician assistants, nurses, and other clinical personnel. Non-clinical FTEs include all other staff.

Changes in Revenues and Expenses

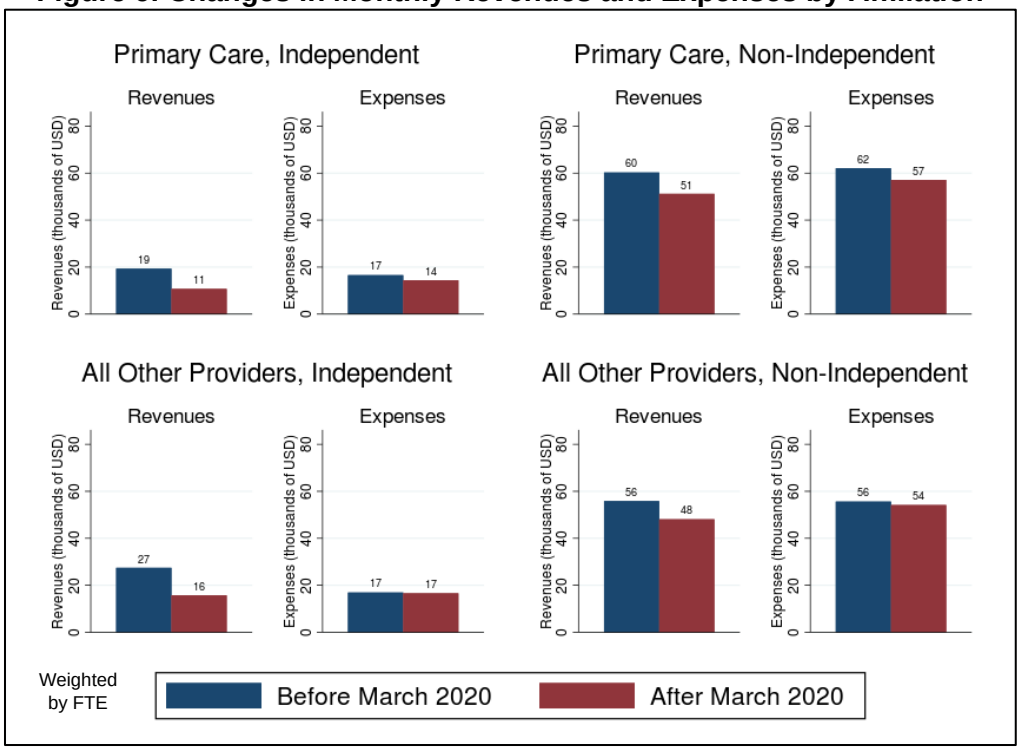
Figure 8. Changes in Monthly Revenues and Expenses by Specialty



Reported total practice revenues declined to a greater extent than total practice expenses (Figure 8). Primary care practices reported average total revenues of $53,000 per clinical FTE per month before March 2020 and $44,000 after March 2020 (17% decline), compared to reported average expenses of $53,000 before and $49,000 after (8% decline). A similar pattern was found across the other specialties. This was generally consistent with anecdotal evidence from practices that they tried to hold on to their expenses—the largest component of which was employee salaries—in the early months of the pandemic as revenues fell in an effort to defer more difficult decisions of cuts in personnel or practice closure.

Independent practices faced larger percent reductions in revenues than non-independent practices (Figure 9). Within primary care, revenues among independent practices declined from $19,000 per clinical FTE per month to $11,000 (42% decline) amidst a 18% decline in expenses, while revenues among non-independent practices decreased by 15% while expenses decreased by 8%. A similar pattern was observed among non-primary care practices.

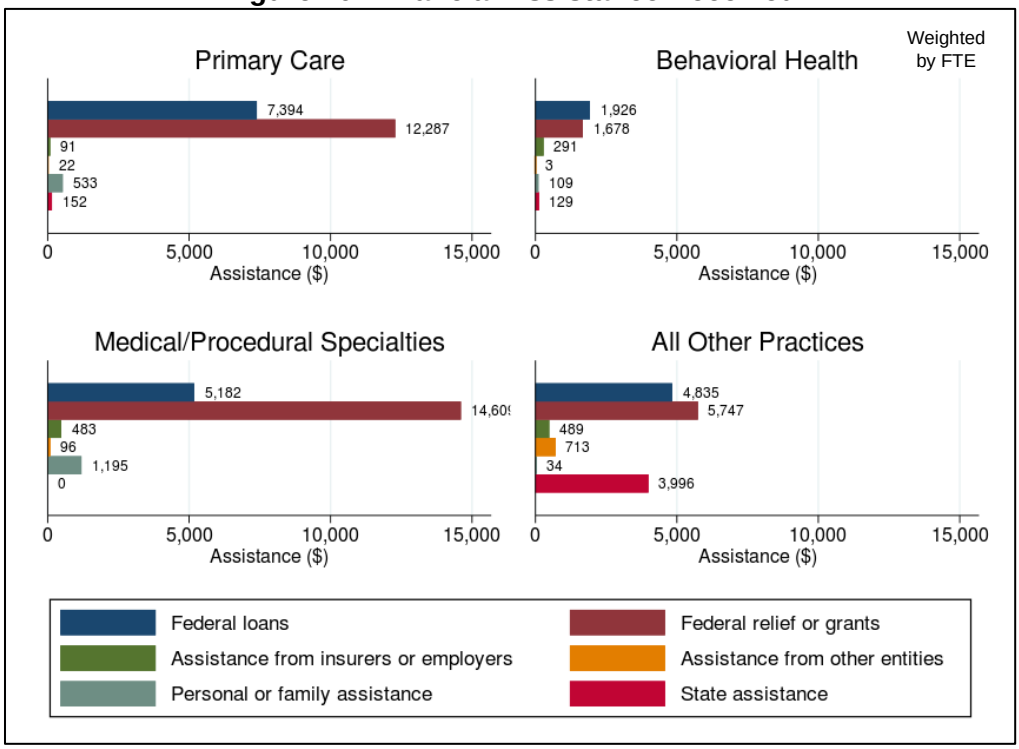
Figure 9. Changes in Monthly Revenues and Expenses by Affiliation



This pattern is consistent with reports of smaller, private-owned community practices facing relatively more financial peril relative to practices that may have some hospital or health system support. In general, non-independent practices reported larger revenues and expenses at baseline, which may reflect larger clinical operations in these settings. These hospital or health system affiliated practices also did report larger drops in revenue than in expenses, which combined with reductions in admissions, elective procedures, and other sources of revenue, may generate different or additional economic pressure that smaller independent practices do not face. Further context for interpreting these findings may be gleaned from qualitative responses.

Practices reported receiving various amounts of financial assistance from federal, state, and other sources (Figure 10). Primary care practices reported receiving $7,394 per clinical FTE in federal loans, which need to be repaid, and $12,287 per clinical FTE in federal relief or grants, which do not need to be repaid. Medical and procedural specialists reported similar amounts of assistance. Behavioral health and all other practices reported less assistance. Personal or family assistance of about $500 per clinical FTE in primary care and $1,200 in medical and procedural specialties was reported. State assistance included that for community health centers. Average assistance for independent relative to non-independent practices are shown in Appendix 7.

Figure 10. Financial Assistance Received



Forecasted Responses to COVID-19

Respondents were asked to forecast what strategies—and with what likelihood—their practices would adopt in response to COVID-19 without additional financial assistance. Table 3 shows the percent of respondents that selected each option and the average reported likelihood of following through on that action among those who selected each option.

Among all practices, the most common responses were "cut salaries of providers or employees," "cut services or other operating expenses," and "Furlough or lay off employees," which ranged from 61% to 67% of respondents, of whom the average likelihood of taking these actions was 41% to 43%. These three responses were most popular among primary care practices, with 79% to 82% of respondents selecting them, reporting an average likelihood of taking these actions slightly over 50%. Behavioral health practices were less likely to select these responses. These three responses may represent efforts to keep the practice open without consolidation or closure.

Among all practices, generating revenue through providing more services or diagnostic coding was selected by 44% and 25% of respondents, respectively, with average likelihood among those selecting these options of 21% and 12%, respectively. These may also represent strategies to maintain a practice during COVID-19.

Table 3. Forecasted Responses to COVID-19 by Specialty

	All Practices (N=307)		Primary Care (N=103)		Behavioral Health (N=78)		Medical/Proc. Specialties (N=61)		Other Providers (N=65)	
	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)
Close the practice	42	17	47	15	28	13	44	23	48	22
Consolidate with hospital or health system	18	7	25	9	6	2	20	9	20	7
Consolidate with other practices	23	7	31	12	13	2	21	8	26	7
Cut salaries of providers or employees	61	41	82	54	24	13	74	55	58	41
Cut services or other operating expenses	67	43	79	50	50	28	72	55	66	38
Evolve toward membership-based practice	17	6	28	8	10	6	11	3	14	7
Furlough or lay off employees	62	41	82	53	27	15	74	53	62	41
Generate revenue by improved diagnostic coding	25	12	39	18	12	5	26	13	17	8
Generate revenue by providing more services	44	21	44	19	49	23	33	18	48	23
Sell the practice	26	10	28	9	13	5	33	16	32	13
Other	4	3	3	1	10	7	0	0	3	2

Notes: The survey question asked, “Without additional financial assistance, what is the percent chance that your practice WOULD DO the following in the foreseeable future?” Respondents were free to choose more than one response and invited to indicate a percent likelihood for each choice.

About 42% of all practices selected “close the practice” with an average likelihood among those selecting this option of 17%. By specialty, 47% of primary care practices selected closure with a reported likelihood averaging 15%. This was similar among medical and procedural specialists, and lower among behavioral health practices.

Among all practices, 23% and 18% selected consolidation with other practices and with hospitals or health systems, respectively, with average likelihoods of around 7%, while 26% selected “sell the practice” with an average likelihood of 10%. Sales of practices may include those to private equity, provider groups, or larger health systems, which may result in consolidation similar to the prior two options. About 17% of practices selected “evolve toward membership-based practice,” sometimes referred to as a concierge or direct care model, in which patients pay a prospective fee for access to a provider or practice. This option was most popular among primary care practices (28% selected, average likelihood 8%).

Table 4. Forecasted Responses to COVID-19 by Affiliation

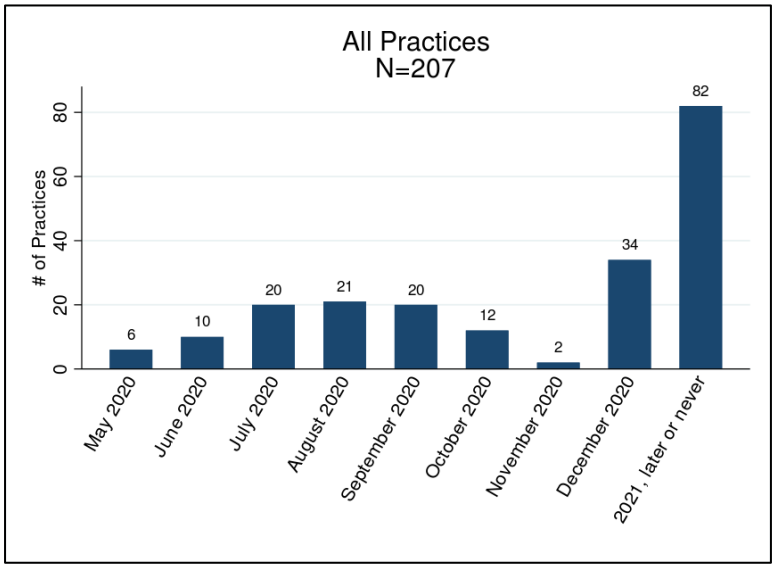
	All Practices (N=307)		Primary Care Independent (N=60)		Primary Care Non-independent (N=43)		All Other Independent (N=145)		All Other Non-independent (N=59)	
	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)	Selected (%)	Likelihood (%)
Close the practice	42	17	60	21	28	6	47	23	20	7
Consolidate with hospital or health system	18	7	30	8	19	9	16	7	12	3
Consolidate with other practices	23	7	35	12	26	11	23	7	12	2
Cut salaries of providers or employees	61	41	78	50	86	60	48	36	56	31
Cut services or other operating expenses	67	43	77	47	81	53	61	41	63	33
Evolve toward membership-based practice	17	6	32	9	23	7	13	6	8	5
Furlough or lay off employees	62	41	80	51	84	57	50	34	58	35
Generate revenue by improved diagnostic coding	25	12	33	16	47	20	17	7	20	13
Generate revenue by providing more services	44	21	43	16	44	23	46	20	39	25
Sell the practice	26	10	33	11	21	6	31	14	10	4
Other	4	3	5	2	0	0	6	3	3	3

Notes: The survey question asked, "Without additional financial assistance, what is the percent chance that your practice WOULD DO the following in the foreseeable future?" Respondents were free to choose more than one response and invited to indicate a percent likelihood for each choice.

Independent practices were more likely to choose practice closure, consolidation, or sale relative to non-independent practices (Table 4). Within primary care, 60% of independent practices selected "close the practice," with an average likelihood of 21%, while 28% of non-independent practices selected this option, reporting a 6% likelihood. Similarly, 33% of independent primary care practices selected "sell the practice," with a mean likelihood of 11%, compared to 21% of non-independent practices selecting this option, with a likelihood of 6%. An analogous pattern was found among all other types of practices.

Figure 11 shows the projected dates of closure and number of practices selecting this option. A similar pattern was seen across the specialties (Appendix 8).

Figure 11. Timing of Projected Closure



Preferred Payment Model

Respondents were asked to report their preference on a 10-point scale for four payment models, ranging from pure fee-for-service (FFS) to a prospective per-member-per-month global payment (capitation) for their practice's services. To separate the mechanism of payment from the amount of payment, the survey asked respondents to assume current fees (prices). In recognition of key components of global payment models, but to not overly complicate the question, the question also asked the respondent to assume accurate risk-adjustment and adequate quality measurement.

Table 5 shows the results by specialty category, both weighted by clinical FTE and unweighted. Results weighted by FTE reflect the average preferences of a clinician, assuming practice-level preferences represent individual clinician preferences. In the weighted results, large practices or provider groups have proportionally larger weight and influence on the averages. Unweighted results, which render small and large practices equally weighted, reflect average preferences of a practice. Within each specialty category, we reported P values from a t test of the difference in means between each alternative payment mechanism and pure FFS (the reference group).

Table 5. Preferences Among Payment Mechanisms by Specialty

	Primary Care (N=102)		Behavioral Health (N=87)		Medical/Procedural Specialties (N=56)		Other Providers (N=59)	
	Mean preference	P value vs. FFS	Mean preference	P value vs. FFS	Mean preference	P value vs. FFS	Mean preference	P value vs. FFS
Weighted by clinical FTE (larger practices have more weight)								
Pure FFS	6.0	--	6.3	--	7.7	--	8.2	--
Partial FFS + bundled payments for episodes	5.0	0.03	4.0	<0.001	4.2	0.06	4.1	<0.001
Partial FFS + prospective payment	6.7	0.08	4.3	0.001	5.7	0.69	3.1	0.001
Prospective global payment	7.5	0.11	4.2	<0.001	8.9	0.45	6.3	0.09
Unweighted (equal weight between large and small practices)								
Pure FFS	6.5	--	8.5	--	8.8	--	8.3	--
Partial FFS + bundled payments for episodes	4.2	<0.001	2.1	<0.001	3.1	<0.001	3.1	<0.001
Partial FFS + prospective payment	6.0	0.54	2.5	<0.001	2.3	<0.001	3.6	<0.001
Prospective global payment	5.2	0.08	2.0	<0.001	2.1	<0.001	3.3	<0.001

Note: Preference for payment mechanisms was indicated on a 10-point scale, with 0 indicating strongly oppose and 10 indicating strongly favor. Sample sizes in the headings indicate the numbers of practices that responded to this question. FFS = fee-for-service. P values are from a t test of the difference in mean preference between a given payment mechanism and that for pure FFS, the reference group.

In general, smaller practices had a stronger preference for pure FFS, while larger practices had a stronger preference for alternative payment mechanisms, notably global payment. For example, the average primary care *practice* (unweighted result) reported a preference of 5.2 for global

payment (P value of 0.08 in its difference relative to pure FFS), while primary care *clinicians* on average (weighted result) reported a preference of 7.5 for global payment (P value of 0.11 in its difference relative to pure FFS).

Behavioral health providers and practices preferred pure FFS to alternative payment mechanisms ($p<0.001$). In unweighted results, medical and procedural specialty practices on average preferred pure FFS (8.8) relative to other payment mechanisms such as global payment (2.1) (P value of the difference <0.001). Upon weighting by clinical FTE, the average specialist preference for global payment was notably greater (8.9 and no longer significantly different from pure FFS) (Table 5). This again highlights the influence of larger practices that preferred global payment.

Table 6. Preferences Among Payment Mechanisms by Affiliation

	Primary Care Independent (N=59)		**Primary Care Non-independent (N=43)**		**All Other Independent (N=158)**		**All Other Non-independent (N=44)**	
	Mean preference	P value vs. FFS	Mean preference	P value vs. FFS	Mean preference	P value vs. FFS	Mean preference	P value vs. FFS
Weighted by clinical FTE (larger practices have more weight)								
Pure FFS	6.7	--	5.4	--	7.5	--	7.3	--
Partial FFS + bundled payments for episodes	4.0	0.003	5.4	0.76	3.6	<0.001	4.4	0.006
Partial FFS + prospective payment	6.5	0.85	6.9	0.04	3.4	<0.001	5.0	0.40
Prospective global payment	6.0	0.60	7.9	0.11	3.7	<0.001	8.9	0.73
Unweighted (equal weight between large and small practices)								
Pure FFS	6.6	--	6.2	--	8.9	--	7.0	--
Partial FFS + bundled payments for episodes	3.7	0.002	4.8	0.10	2.2	<0.001	4.4	0.008
Partial FFS + prospective payment	6.0	0.55	6.0	0.82	2.0	<0.001	5.3	0.38
Prospective global payment	5.2	0.21	5.3	0.21	1.4	<0.001	5.5	0.18

Note: Preference for payment mechanisms was indicated on a 10-point scale, with 0 indicating strongly oppose and 10 indicating strongly favor. Sample sizes in the headings indicate the numbers of practices that responded to this question. FFS = fee-for-service. P values are from a t test of the difference in mean preference between a given payment mechanism and that for pure FFS, the reference group.

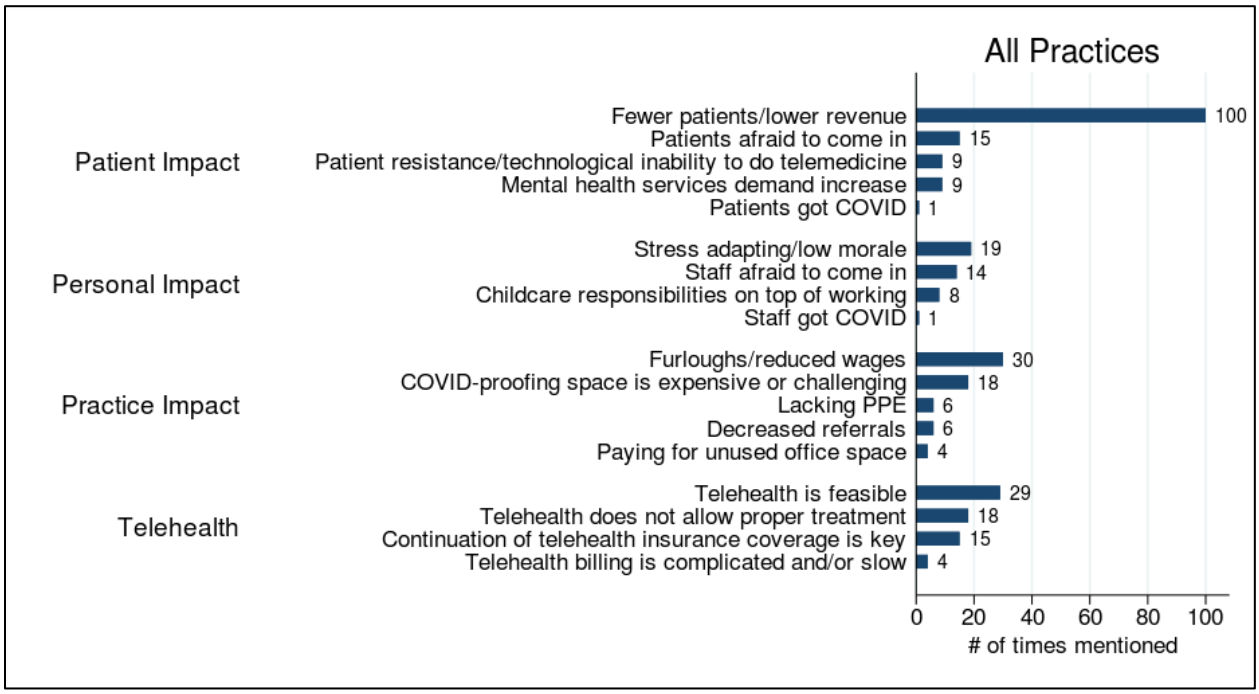
Table 6 shows that the average preference among independent primary care clinicians (weighted results) for pure FFS, partial FFS with a prospective payment, and global payment were similar, while non-independent primary care clinicians preferred partial FFS with a prospective payment to pure FFS (6.9 vs. 5.4, p=0.04) and seemed to prefer global payment to pure FFS, although this was not statistically significant (7.9 vs. 5.4, p=0.11). A similar pattern between independent and non-independent clinicians was observed for all other specialties as a whole.

Unweighted results showed that primary care practices had generally mixed preferences among the payment option. Meanwhile, independent specialty practices more clearly preferred pure FFS to other options. Within each category of affiliation, a comparison of weighted and unweighted results again implied that larger practices preferred global payment more than smaller practices, as weighting by clinical FTE increased the preference for global payment (Table 6). Overall, practices not infrequently reported a strong preference for pure fee-for-service over alternative models despite reporting economic peril caused by the decline in visits and utilization.

Provider Perspectives

Lastly, the survey offered respondents the opportunity to describe how COVID-19 had impacted their practice in their own words. Figure 12 shows the common themes that were found among the responses, grouped by patient impact, personal impact, practice impact, and perspectives that discussed telehealth. A total of 100 practices discussed fewer patients and the consequent lower revenues, which was by far the most common theme. Fear among patients and staff, low morale and stress of adaptation, the expense of revamping practices space for the COVID-19 era, and furloughs and reduced wages were also frequently mentioned. While some respondents reported that telehealth was feasible, often among behavioral health practices, other respondents noted that telehealth is not a sufficient substitute for in-person visits, such as proceduralists.

Figure 12. Common Themes Among Free Text Responses



No analysis could do justice to personal anecdotes shared by the respondents. While some were lengthy, a selection of representative responses in their own words is provided here:

> *"I could never have prepared for something of this magnitude. It's affected my psyche. I feel like any day I may get infected and not survive. I will continue to see my patient. They need me."* – ***Pediatric practice***

"I have never until now feared for my practice's viability. I don't think any amount of financial assistance will get us to pre-COVID19 operation levels. The amount of renovation needed to make the space safe for that volume is not possible." – ***Family Medicine practice***

"The pandemic was worse than tsunami. I lack words to describe how precariously my business has suffered since the COVID-19. I have lost my whole life savings and would need at least $350,000 to stand again." – ***Home Care practice***

"We are working twice as hard, for half the result. It is exhausting and dis-heartening. Everyone, providers and staff is burning out." – ***Endocrine practice***

"I continue to pay for office space that I can't use. Now I have to pay for a telemedicine service also, in order to provide video sessions for my patients. Because I'm simultaneously homeschooling my daughter, I can't work as many hours. My husband was furloughed so we're desperate financially. Without assistance from the PPP loan my practice would have to close." – ***Clinical Psychology Practice***

"The advent of Covid-19 has decimated our practice as the majority of our behavioral health consultants to the nursing homes have been restricted from entry. Telehealth services are made difficult as the average age of our population is 85 and they reside in LTC facilities. Sadly, many of our patients have died from Covid which will likely result in the loss of customers as nursing facilities close and consolidate." – ***Geriatric Psychiatry practice***

"The pandemic has caused tremendous uncertainty and threatened to end primary care as we know it. We are doing our part to take the best care of our patients that we can and keep sick patients out of ERs, hospitals, and other health care settings, but we are not being compensated enough to keep our practice open. Our patients would suffer tremendously if we cannot stay open." – ***Family Medicine practice***

"As ophthalmologists, this has been a disaster. Telehealth is not an option. Elective surgery is not permitted. We have very high fixed costs. Our income will be in negative numbers unless we close practice or file for bankruptcy. Even if we open fully, hard to know when patients will return. I am truly torn as to what to do. I love my patients, staff and fellow doctors but can't afford to take on more debt to continue. We are no different than the thousands of other businesses that have and will continue to fail as this pandemic plays out." – ***Ophthalmology practice***

"COVID has destroyed my practice. I use to think that healthcare was the safest field to be in as it would always be needed no matter how the rest of the economy was. This belief has been shattered. My practice has evaporated. Patients have been terrified and will not seek medical care unless they are dying. … Haircutters are reopened yet neurosurgery cannot do surgeries that are not life-threatening. Many other states are already allowing elective procedures but not Massachusetts. Medicare is also not supportive as I submitted an application for the accelerated payment program but it is in limbo as they stopped paying those for no obvious reason. My emergency disaster loan still never completed processing either. I used to feel important to the community and now I am superfluous." – ***Neurosurgery practice***

Limitations

We note several limitations of these data. First, the survey was fielded to a convenience sample of provider practices across Massachusetts, which may not be representative of all practices in the state despite our efforts to circulate the survey broadly. Second, participation in a voluntary survey may not be random, rendering the responses susceptible to biases due to selection effects, whereby participation may be correlated with unobservable practice characteristics that may be correlated with certain responses. Third, survey responses may be influenced by other biases in reporting, such as recall bias, which could produce inaccurate or exaggerated responses.

Additionally, our data capture a cross-section of respondents over a 4-week period in late May through early June 2020. Economic conditions at the practices may change with time for many reasons. For example, the number of furloughed or laid off workers may change as more workers exit practices or some return due to reopening or conclusion of federal programs that provided income assistance. To the extent that demand for services is higher upon reopening than during normal times due to deferred or postponed care, practices may make up some lost finances in the early days of reopening. On the other hand, a rebound in utilization may be slow, given the new precautions needed to be established in clinic and lag in resumption of full clinical activities.

Policy Implications

Evidence from this survey suggests that COVID-19 has affected practices in Massachusetts in notable ways, from causing reductions in the health care workforce, to a decline in visits and clinical activities, to the consequent reductions in revenues and resulting economic distress. Our cross-section of responses suggests that from late May through early June 2020, these effects were experienced throughout the delivery system, though with heterogeneity across specialties and types of practices. Telehealth has provided a partial clinical substitute and financial boost, as has direct financial assistance from federal and state sources, but a general sense of economic peril remained across respondents. Practices are considering additional strategies to cut costs or generate revenues to maintain viability, and a nontrivial share are considering consolidation, sale, or closure. These forecasted actions, to the extent they are realized, could negatively impact access to care, especially among communities that rely on independent private practices. To the extent that consolidation or sales of practices to private entities occurs, insurers may face higher prices in future contract negotiations from previously independent practices.

These data add to survey evidence from other states[10-11] and to surveys of primary care practices nationwide that paint a picture of physician practices in distress.[12] It offers granular details and a sense of the heterogeneity between physician specialties and among health care providers more broadly. Much uncertainty over the fate of practices remains, as many states undertake a phased reopening during which health care utilization will to some extent rebound.

In the meantime, the Commonwealth of Massachusetts has established a formal mechanism for practices to request a one-time Alternative Interim Payment equaling up to 2 months of average 2019 MassHealth (Medicaid) payments for physician services, up to $500,000.[13,14] This effort to help practices remain solvent may serve as a model for other states and insurers.

Economic and Clinical Impact of COVID-19 on Provider Practices in Massachusetts

Appendix

Table of Contents

Appendix 1. Survey Instrument

The following is the survey instrument made available to provider practices in Massachusetts.

Impact of COVID-19 on Provider Practices

You are invited to take part in a survey that establishes evidence to inform policymakers about the economic and clinical impact of COVID-19 on practices. This evidence will inform policy efforts to support practices.

The survey has 14 items. Your participation is voluntary. You may withdraw your participation for any reason. **No patient information is asked. All responses are confidential.** Results will be anonymized and aggregated without any practice-identifying information. We would be happy to share the anonymized aggregate results with you as a token of our appreciation for your participation.

The survey is approved by the Harvard Medical School Institutional Review Board. Responses are stored on the secure Harvard platform to minimize risks to data confidentiality. The survey is supported by a coalition of clinicians, clinical leaders, and researchers from the organizations below.

Anonymized aggregate data will be shared with the policy community on a rolling basis. We hope you will contribute to building this important evidence base. Thank you for your time and participation.

Zirui Song, MD, PhD
Harvard Medical School
Massachusetts General Hospital

Wayne Altman, MD, FAAFP
Tufts Univ. School of Medicine
Family Practice Group

Katherine Gergen Barnett, MD
Boston Univ. Medical School
Boston Medical Center

Susan Edgman-Levitan, PA
John D. Stoeckle Center
Massachusetts General Hospital

Russell S. Phillips, MD
Harvard Medical School
Beth Israel Deaconess Med. Ctr.

Daniel Horn, MD
Massachusetts General Hospital
Harvard Medical School

M. Diane McKee, MD, MS
UMass Medical School
UMass Memorial Medical Center

Asaf Bitton, MD, MPH
Ariadne Labs, BWH, Harvard TH Chan School of Public Health

David Auerbach, PhD
Health Policy Commission
Commonwealth of Massachusetts

Elisa Choi, MD, FACP, FIDSA
American College of Physicians
Massachusetts Chapter

Susan Dargon-Hart, LICSW
Massachusetts League of Community Health Centers

Paul Hattis, MD, JD, MPH
Tufts Univ. School of Medicine
Tufts Public Health Program

If you have questions about the survey, please contact Zirui Song, MD, PhD at song@hcp.med.harvard.edu.

1. How many people (full time equivalents or FTEs) worked in your practice BEFORE COVID-19?

Physicians (MD, DO, etc.)	_____
Nurse Practitioners (NP) / Physician Assistants (PA)	_____
Nurses (RN) / Case Managers / Other clinicians	_____
Non-clinical staff	_____

2. How many people (full time equivalents or FTEs) has your practice furloughed or laid off due to COVID-19?

Physicians (MD, DO, etc.)	_____
Nurse Practitioners (NP) / Physician Assistants (PA)	_____
Nurses (RN) / Case Managers / Other clinicians	_____
Non-clinical staff	_____

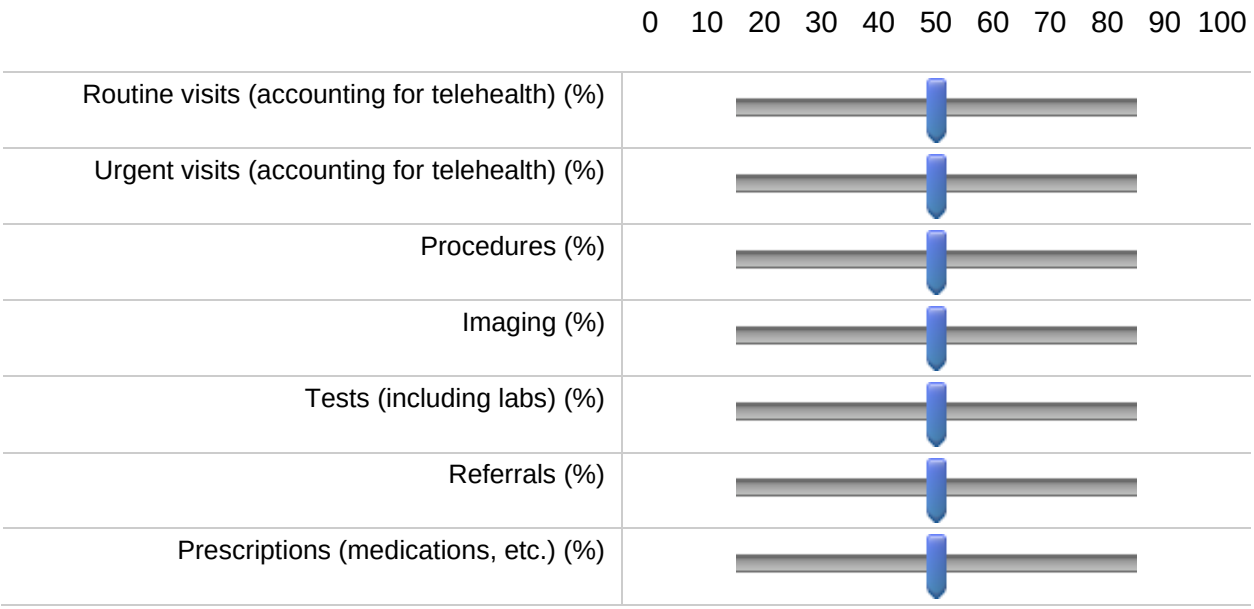
3. Generally speaking, what was your practice's payer mix BEFORE COVID-19?

Medicare (%)	_____
Medicaid (%)	_____
Commercial (%)	_____
Other insurance (e.g. VA, Military, Indian Health Service) (%)	_____
Self-pay (including membership-based) (%)	_____
Uninsured and unable to pay (%)	_____

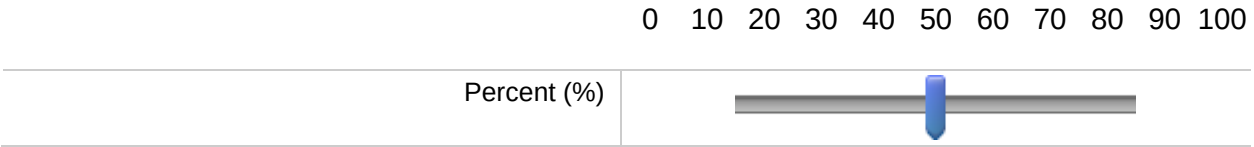
4. What is your practice's monthly patient visit volume BEFORE and AFTER COVID-19 (all payers)?

In-person visits per month BEFORE March 2020	_____
In-person visits per month AFTER March 2020	_____
Telehealth visits per month BEFORE March 2020	_____
Telehealth visits per month AFTER March 2020	_____

5. Approximately what percent of your practice's <u>usual clinical activities</u> has been DEFERRED or CANCELED due to COVID-19?



6. Approximately what percent of your practice's full capacity for <u>Telehealth</u> is your practice doing now? ("Full capacity" means telehealth usage by all clinicians in your practice with adequate technology for doing so.)



7. What are your practice's total monthly <u>revenues and expenses</u> BEFORE and AFTER COVID-19 (all payers)?

Revenues per month BEFORE March 2020 ($) _____
Revenues per month AFTER March 2020 ($) _____
Expenses per month BEFORE March 2020 ($) _____
Expenses per month AFTER March 2020 ($) _____

8. How much financial assistance has your practice received?

Federal relief or grants (no repayment needed) ($)	_____
Federal loans (repayment needed) ($)	_____
State assistance ($)	_____
Assistance from insurers or employers ($)	_____
Assistance from other entities (e.g. donations) ($)	_____
Personal or family assistance ($)	_____

9. Without additional financial assistance, what is the percent chance that your practice WOULD DO the following in the foreseeable future?

	Would NOT consider 0 10 20 30 40 50 60 70 80 90 100 Would DO for sure
Furlough or lay off employees (%)	
Cut salaries of providers or employees (%)	
Cut services or other operating expenses (%)	
Generate revenue by providing more services (%)	
Generate revenue by improved diagnostic coding (%)	
Evolve toward membership-based or "concierge" practice (%)	
Consolidate with other practices (%)	
Consolidate with hospital or health system (%)	
Sell the practice (e.g. to private equity firm) (%)	
Close the practice (%)	
Other (please specify) (%)	

Display This Question:
If 9. Without additional financial assistance, what is the percent chance that your practice WOULD D... [Close the practice] > 0
Or 9. Without additional financial assistance, what is the percent chance that your practice WOULD D... [Close the practice] Is Empty

***Follow-up*: Without additional financial assistance, <u>when</u> would your practice NEED TO CLOSE (select 1)?**

[ ] By end of May 2020
[ ] By end of June 2020
[ ] By end of July 2020
[ ] By end of August 2020
[ ] By end of September 2020
[ ] By end of October 2020
[ ] By end of November 2020
[ ] By end of December 2020
[ ] 2021 or later (please enter approximate date) _____

10. Going forward, assuming current fees (payment rates), accurate risk-adjustment, and adequate quality measurement, how would your practice prefer to be paid?

	Strongly Oppose 0 1 2 3 4 5 6 7 8 9 10 **Strongly Favor**
Pure fee-for-service (a payment for each service)	
Partial fee-for-service + "bundled" payments for defined episodes of care	
Partial fee-for-service + a prospective per-member-per-month (PMPM) payment	
A prospective PMPM payment for all services your practice provides ("global" or capitated payment)	

11. Please provide the following information for data quality control (to verify the existence of your practice and omit duplicates). Responses are CONFIDENTIAL.

Practice Specialty _____
Practice Name _____
Practice Address _____

---

12. What is your practice's affiliation (select all that apply)?

[ ] Independent private practice
[ ] Associated with other private practices (e.g. IPA)
[ ] Affiliated with hospital or health system: jointly contract with payers
[ ] Affiliated with hospital or health system: clinical (e.g. referrals) or education (e.g. teaching site)
[ ] Owned by hospital or health system
[ ] Owned by private equity or other non-clinical entity

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13. If you would like to receive a copy of the aggregate, anonymous survey results, please provide the following contact information. Responses are CONFIDENTIAL.

Contact Person Name _____
Contact Person E-mail _____

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14. Lastly, in your own words, please describe how COVID-19 has affected your practice. Feel free to estimate how much financial assistance your practice would need to return to pre-COVID-19 operation levels. Aggregate responses will be presented to the policy community anonymously.

_____
_____
_____
_____
_____

End of Survey

Appendix 2. Additional Data Cleaning Decisions

The following data cleaning decisions were made:

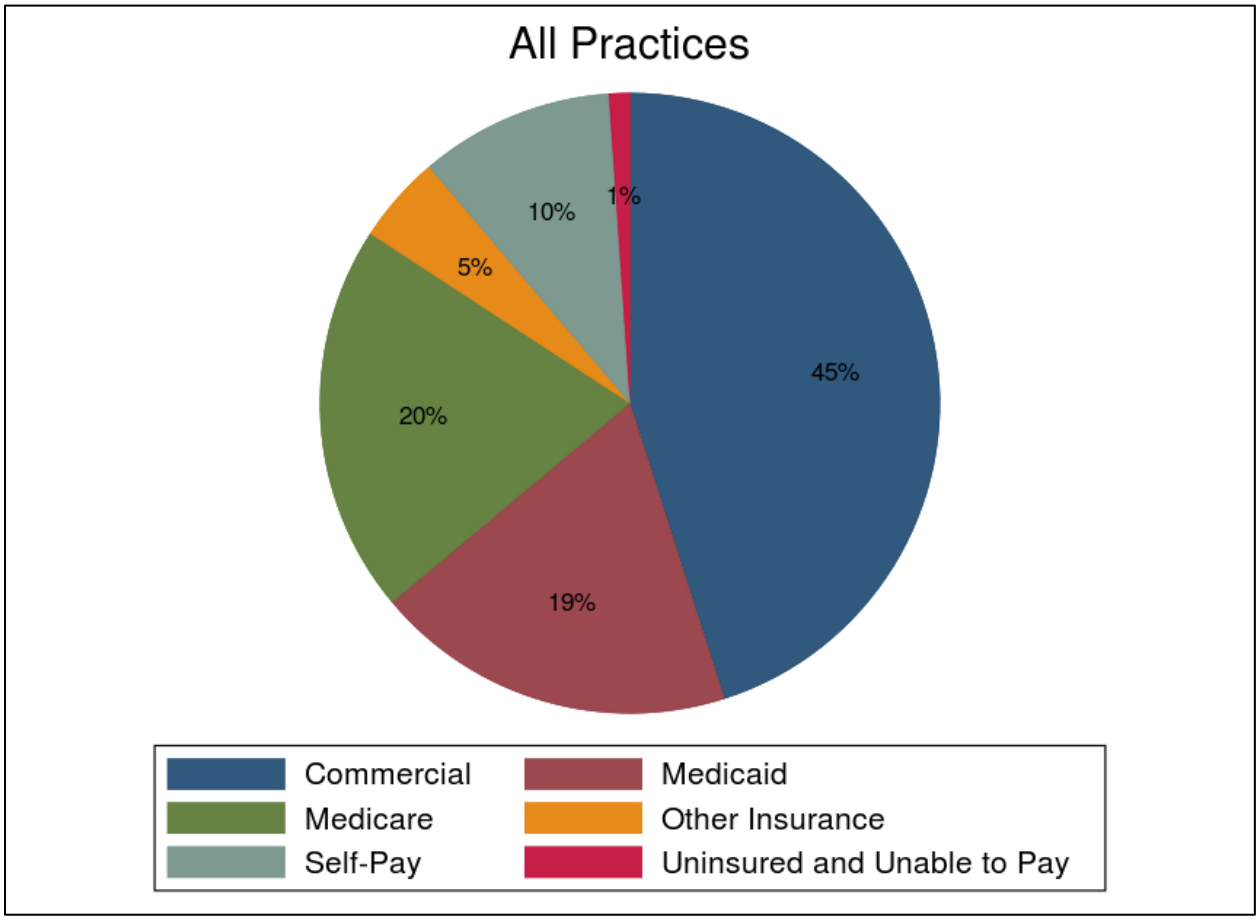
Practice Payer Mix (Figure 1; Appendix 3): Missing values for a payer type were replaced with zeros if the values of the filled in payer types sum to 100%. If a respondent solely entered zeros, their response is excluded. When needed, values are scaled to sum to 100% so long as there are no missing values.

Changes in Workforce (Figures 3 and 4; Appendix 4): If a respondent reported FTEs for some categories but not others, the categories left blank were assumed to be zero. For example, if the respondent reported 3 MDs prior to COVID-19, but left the number of RNs blank, we assumed there were 0 RNs. For physician practices, physician quantities of zero were replaced with a value of 1 under the assumption that the respondent failed to include themselves. For other practices, physician quantities of zero were replaced with a value of 1 only if staff levels of zero were entered for every staff category. Pre-COVID-19 FTE levels were replaced with missing values if the number of furloughed or laid off FTEs exceeded the number of FTEs pre-COVID-19. If the number of furloughed or laid off FTEs in a category was left blank, the missing value was replaced with a zero so long as the pre-COVID-19 staff levels were not left blank in every category.

Financial Assistance (Figure 10; Appendix 7): An outlier value of $11,000,000 for "Assistance from other entities" was omitted from the analysis. It was provided by a practice with only 15 physicians and appears to be an error, as it was two orders of magnitude larger than the next largest value for "Assistance from other entities," which was $350,000. Relatedly, financial assistance was assumed to be included in responses regarding revenues, given the survey asked about total revenues from all payers; however, some respondents may have separated clinical revenue from financial assistance.

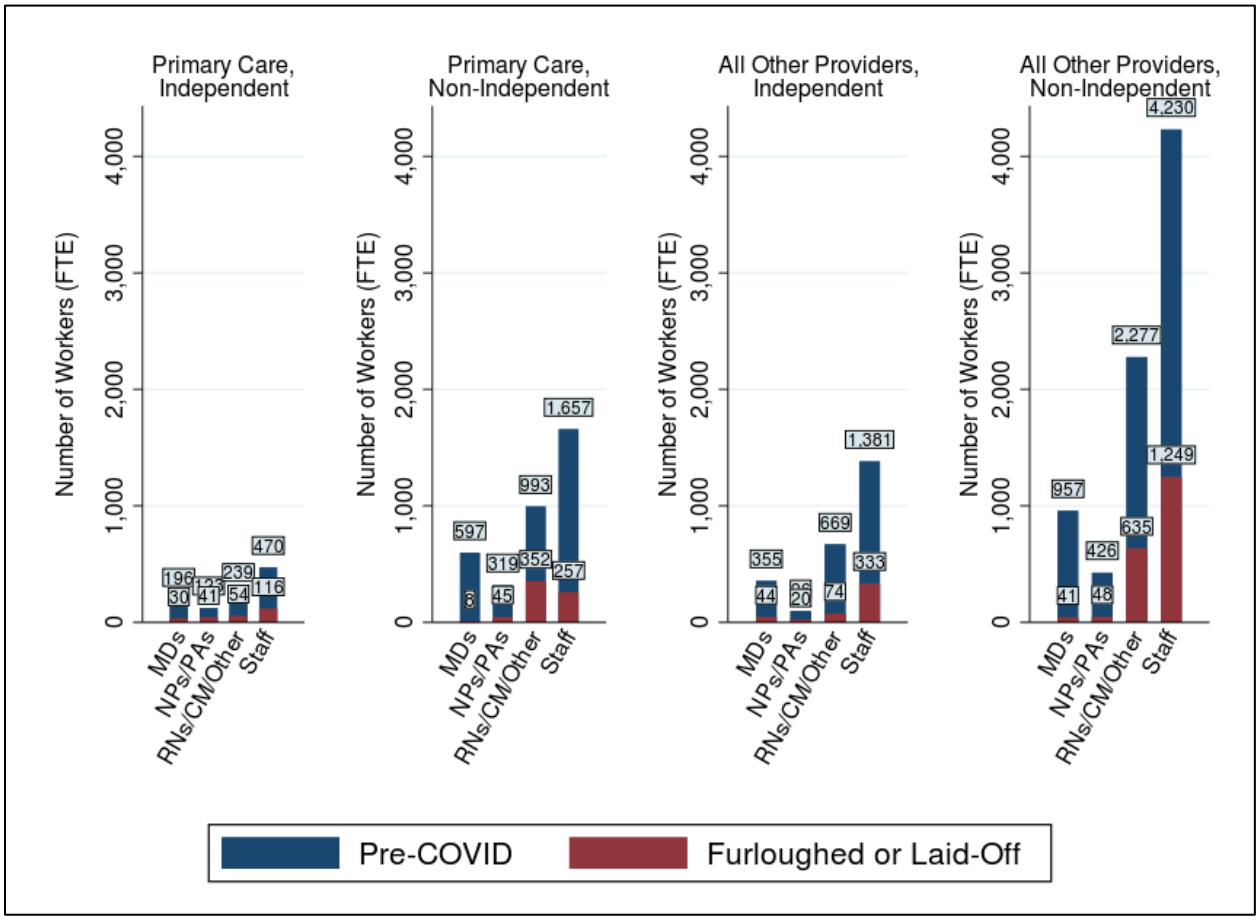
Forecasted Responses to COVID-19 (Tables 3 & 4): If a respondent selected some options, signaling engagement with the question, but left other options blank, the blank selections and likelihoods are filled in with zeros.

Appendix 3. Practice Payer Mix, All Practices



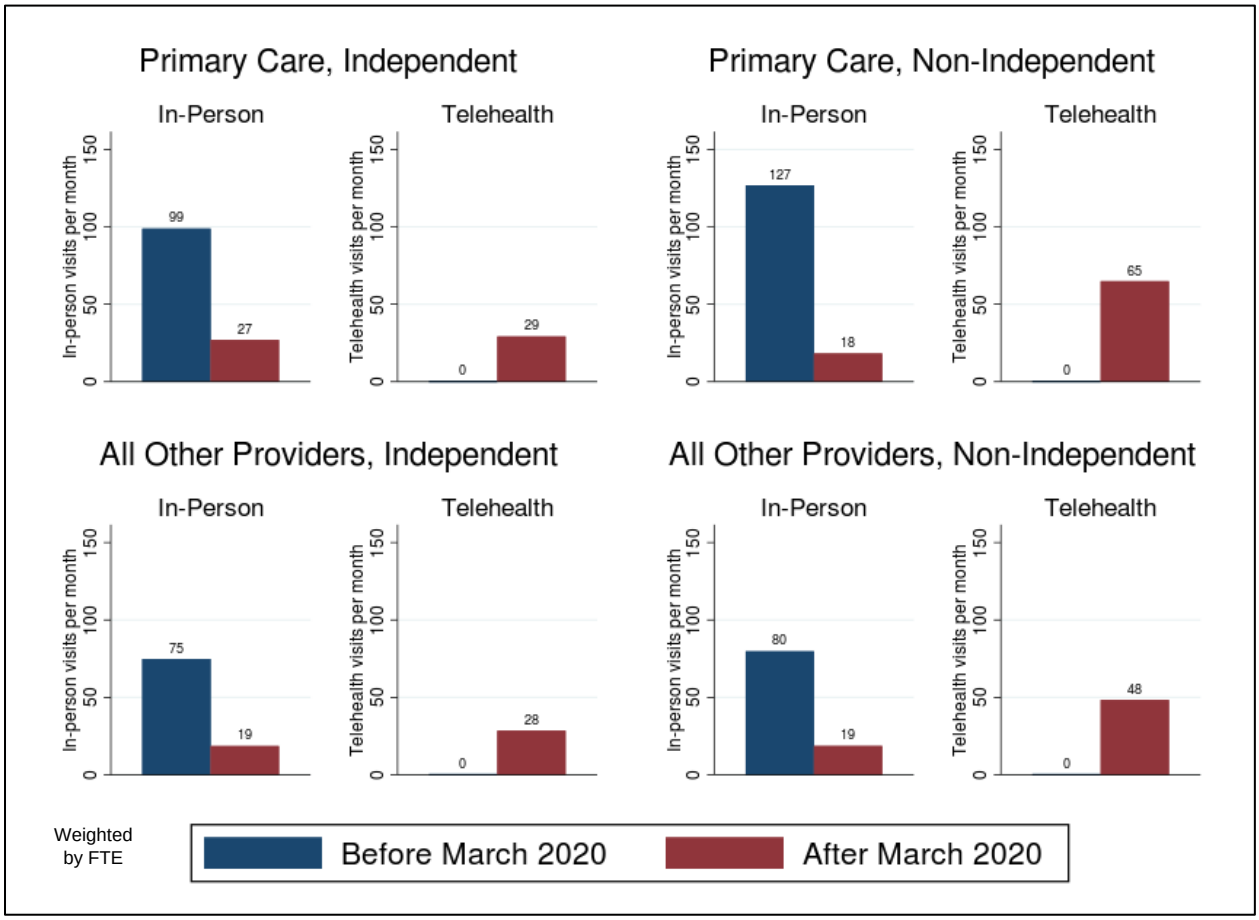
Note: The sample comprises 396 completed and eligible responses (May 20 – June 17, 2020).

Appendix 4. Changes in Workforce by Affiliation



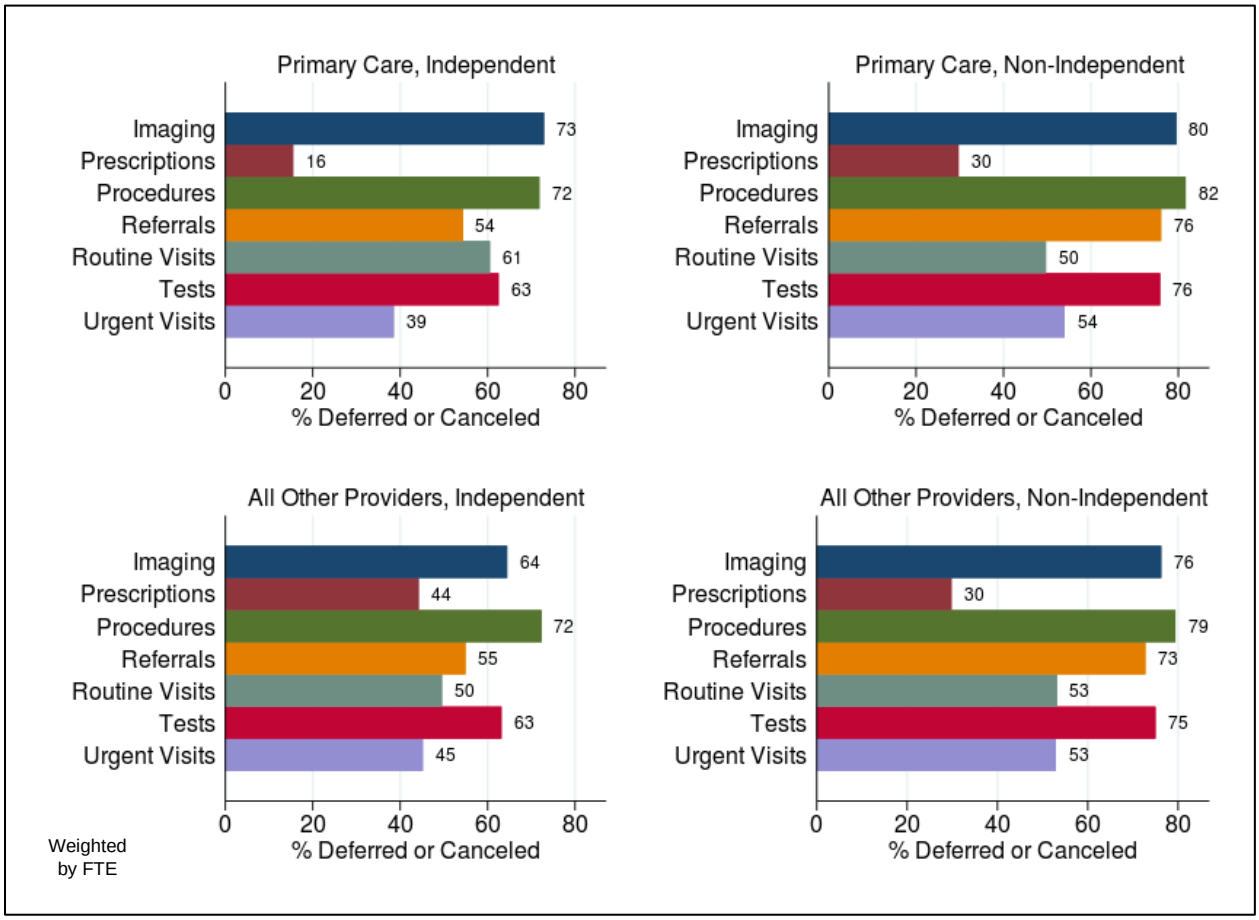
Note: This graph shows the cumulative number of FTEs across primary care and all other practices by affiliation before March 2020 (Pre-COVID) and reportedly furloughed or laid off due to COVID-19. The sample size for each category is shown in Table 1. The total sample comprises 396 completed and eligible responses (May 20 – June 17, 2020).

Appendix 5. Changes in Monthly Visits by Affiliation



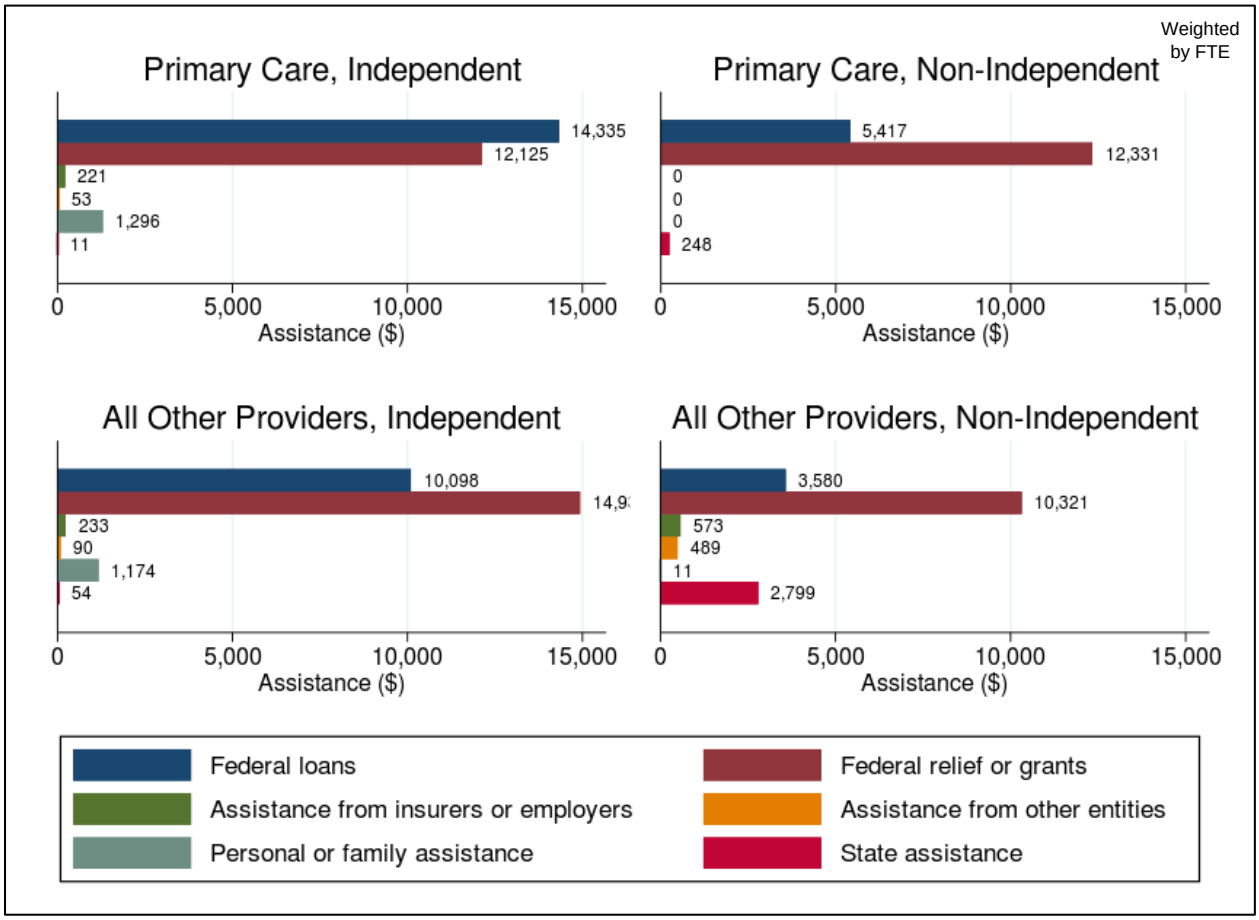
Note: This graph shows monthly in-person and telehealth visits across primary care and all other practices by affiliation before and after March 2020. The sample size for each category is shown in Table 1. The total sample comprises 396 completed and eligible responses (May 20 – June 17, 2020).

Appendix 6. Changes in Clinical Activity by Affiliation



Note: This graph shows the reported proportions of clinical activities deferred or canceled due to COVID-19 across primary care and all other practices by affiliation. The sample size for each category is shown in Table 1. The total sample comprises 396 completed and eligible responses (May 20 – June 17, 2020).

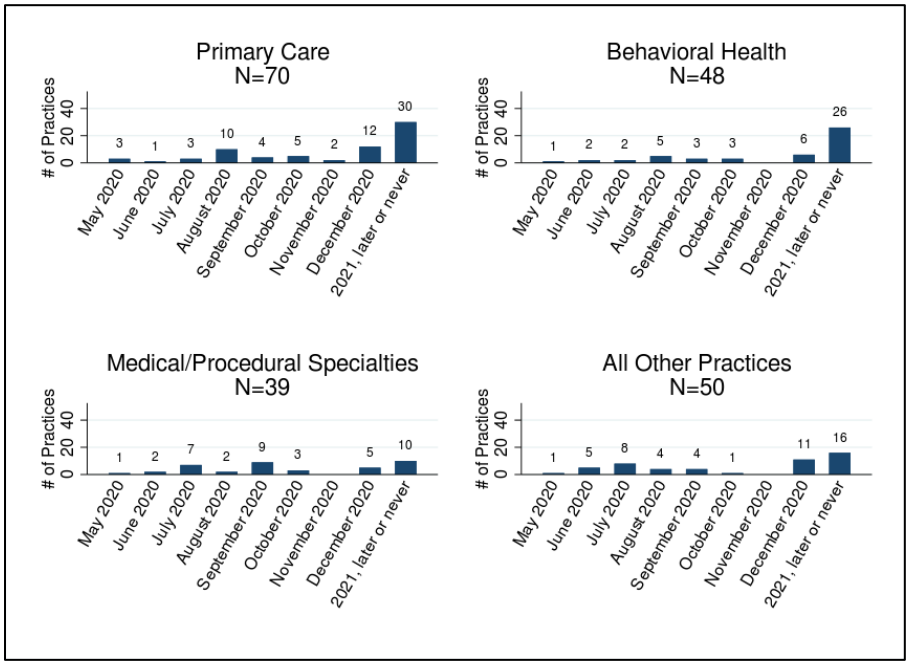
Appendix 7. Financial Assistance Received by Affiliation



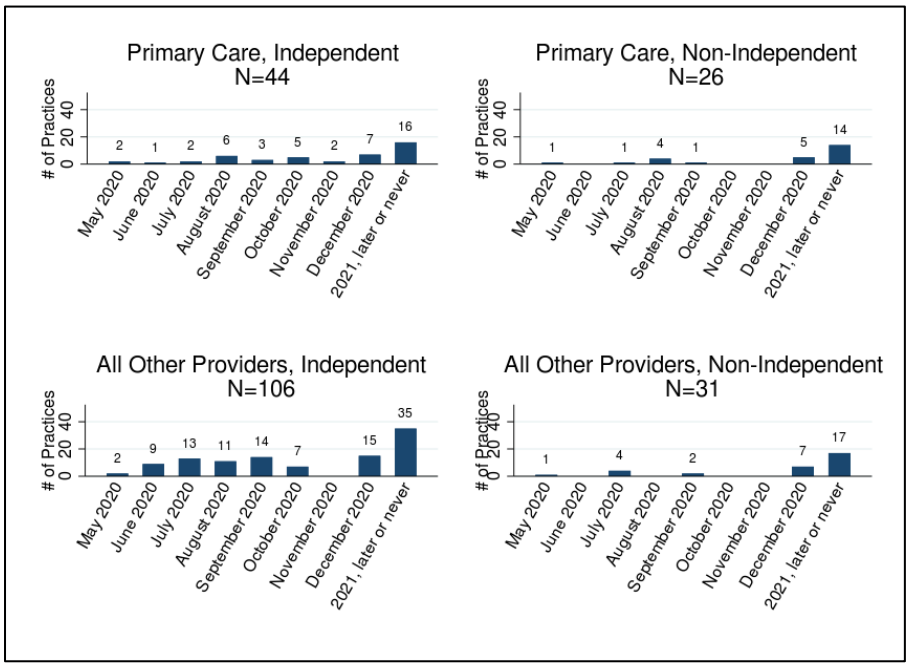
Note: This graph shows the reported amounts of financial assistance received per clinical FTE. The sample size for each category is shown in Table 1. The total sample comprises 396 completed and eligible responses (May 20 – June 17, 2020).

Appendix 8. Timing of Projected Closure, by Specialty and Affiliation

A. By Specialty



B. By Affiliation



Note: These histograms show the number of practices that provided a presumptive closure date without additional financial assistance in response to the follow-up question to question 9 (see Appendix 1).

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