

**Burnout Survey**

**e The Effect of COVID-19 on Interventional Pain Management Practices: A Physician Burnout Survey**

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**Background:** Burnout has been a commonly discussed issue for the past ten years among physicians and other health care workers. A survey of interventional pain physicians published in 2016 reported high levels of emotional exhaustion, often considered the most taxing aspect of burnout. Job dissatisfaction appeared to be the leading agent in the development of burnout in pain medicine physicians in the United States. The COVID-19 pandemic has drastically affected the entire health care workforce and interventional pain management, with other surgical specialties, has been affected significantly. The COVID-19 pandemic has placed several physical and emotional stressors on interventional pain management physicians and this may lead to increased physician burnout.

**Objective:** To assess the presence of burnout specific to COVID-19 pandemic among practicing interventional pain physicians.

**Methods:** American Society of Interventional Pain Physicians (ASIPP) administered a 32 question survey to their members by contacting them via commercially available online marketing company platform. The survey was completed on [www.constantcontact.com](http://www.constantcontact.com).

**Results:** Of 179 surveys sent, 100 responses were obtained. The data from the survey demonstrated that 98% of physician practices were affected by COVID and 91% of physicians felt it had a significant financial impact. Sixty seven percent of the physicians responded that in-house billing was responsible for their increased level of burnout, whereas 73% responded that electronic medical records (EMRs) were one of the causes. Overall, 78% were very concerned. Almost all respondents have been affected with a reduction in interventional procedures. 60% had a negative opinion about the future of their practice, whereas 66% were negative about the entire health care industry.

**Limitations:** The survey included only a small number of member physicians. Consequently, it may not be generalized for other specialties or even pain medicine. However, it does represent the sentiment and present status of interventional pain management.

**Conclusion:** The COVID-19 pandemic has put interventional pain practices throughout the United States under considerable financial and psychological stress. It is essential to quantify the extent of economic loss, offer strategies to actively manage provider practice/wellbeing, and minimize risk to personnel to keep patients safe.

**Key Words:** Interventional pain management, burnout, interventional pain physician, corona COVID-19, financial stress, anxiety, depression

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**B**urnout has traditionally been defined as “a work-related syndrome involving emotional exhaustion, depersonalization, and a sense of reduced personal accomplishment” (1). This has been a growing crisis in the medical community with surveys suggesting the incidence as high as 50% among practicing physicians (2). Burnout among physicians can manifest as job dissatisfaction, increased risk of medical errors, malpractice lawsuits, and a potential for substance misuse and suicidal ideation (3). Circumstances that are seemingly beyond a physician’s control can also contribute to burnout (4). A study published in 2016 examined burnout among interventional pain physicians and noted that 60.4% reported high emotional exhaustion, 35.7% reported high depersonalization, and 19.3% reported low personal accomplishment (5).

In late 2019, COVID-19, a novel coronavirus, began to spread worldwide leading to a global pandemic becoming declared by the World Health Organization on March 11, 2020 (6). COVID-19 spread throughout the United States leading to stay-at-home restrictions being ordered throughout the country limiting individuals to only work in essential roles or leave their residence to perform a limited set of activities. The healthcare system was also impacted by elective procedures and office visits being restricted (7).

These activities have impacted the entire health care community with economic recession, multiple health consequences, and, finally, physician burnout (8-16). The studies have demonstrated issues related to economic recovery after COVID-19 pandemic for orthopedic surgeries (9,10) and some guidelines have focused on emergent or urgent and elective cases with advice for clinical practices (10-13), with one specific guideline providing risk mitigation and stratification strategies for safe return to opening of interventional pain management practices, along with telehealth services (15). In similar fashion, the COVID-19 pandemic has affected many interventional pain physicians and their practices in an unprecedented fashion to stop interventional pain procedures almost entirely and continue with only telehealth visits, causing significant financial, physical, and psychological stress.

Interventional pain management is a subspecialty of medicine defined by the National Uniform Claims Committee (NUCC) as “the discipline of medicine devoted to the diagnosis and treatment of pain related disorders principally with the application of interventional techniques in managing subacute, chronic,

persistent, and intractable pain, independently or in conjunction with other modalities of treatment” (16). Similarly, interventional techniques were defined by MedPAC as, “minimally invasive procedures including, percutaneous precision needle placement, with placement of drugs in targeted areas or ablation of targeted nerves; and some surgical techniques such as laser or endoscopic discectomy, intrathecal infusion pumps and spinal cord stimulators, for the diagnosis and management of chronic, persistent or intractable pain” (17).

Interventional pain management physicians provide extensive services to chronic pain patients in multiple settings with non-invasive interventional modalities, structured exercise program, physical medicine modalities, adjuvant drug therapy, and opioids (18-39). Lack of access to interventional techniques may result in increased levels of opioid usage, and drug abuse patterns. The literature is replete with adverse consequence of opioids, including deaths, which have been controlled in recent years (19,38-44). Further, this control may decelerate, once again succumbing to increases in opioid therapy, in addition to increased availability of the opioids on the street with illicit use of prescription drugs.

Severe unprecedented economic health and psychological stress has been noted to cause significant burnout among interventional pain physicians. Thus, with a baseline burnout level already high among interventional pain physicians, the American Society of Interventional Pain Physicians (ASIPP) sought to survey the membership to characterize the degree of burnout exacerbation and specific features related to the COVID-19 pandemic.

## **METHODS**

This study was an observational, prospective, and non-comparative study design. Considering the nature of the survey and lack of disclosure of information, within the limits of the Health Insurance Portability and Accountability Act (HIPAA) and other regulations, Institutional Review Board (IRB) approval was not sought. Interventional pain physicians who were active members in good standing with ASIPP during COVID-19 crisis, were recruited through registered email addresses. Emails introduced the study and provided a link to the survey via [www.constantcontact.com](http://www.constantcontact.com).

## **Measurements**

In total, a 32-question survey (Appendix Table 1) was distributed via commercially available online

marketing company platform – Constant Contact® — to 179 members of ASIPP. Survey responses were made anonymous, tallied, reported in ratios (%), and stratified by state based on Census Bureau-designated regions. Some questions (Q7 – Q8, Q16 – Q18, and Q20) allowed multiple answer selections, and partial answers (2 – 5 individuals) were included in the overall analysis. Free responses (Q25, Q28) were manually reviewed to identify keywords and reported as counts/ratios in the corresponding tables.

## RESULTS

One hundred surveys (55.9% response rate) were electronically submitted during the month of April (4/16/2020 – 4/28/2020) using the available link on the ASIPP website. A summary of the responder demographics is provided in Table 1. Overall, 95% of responders reported a median [25th percentile, 75th percentile] of 2 [1, 4] physicians — including oneself — providing care in their primary practice. Additionally, 93% of respondents reported a median of 2 [1, 3] mid-level providers,

Table 1. *A demographic summary of pain providers that completed the survey.*

Question	Response	Total	(%)
Gender:	Male	81	81%
	Female	19	19%
Age:	<35	3	3%
	35-44	20	20%
	45-54	27	27%
	55-64	42	42%
	>=65	8	8%
Are you an:	Employer/Owner	68	68%
	Employee	31	31%
	No Response	1	1%
Place of Service:	Office	89	89%
	Ambulatory Surgery Center	47	47%
	Hospital	20	20%
	Other	2	2%
Primary Practice:	Interventional Pain Management	94	94%
	Pain Management	17	17%
	Anesthesiology	8	8%
	Physical Medicine and Rehabilitation	10	10%
Percentage of Practice of IPM	<=25%	5	5%
	26-50	8	8%
	51-75	19	19%
	>=76	68	68%
	No Response	0	0%
Number of Years Practicing	< 5	8	8%
	5-10	13	13%
	10-15	18	18%
	15-20	16	16%
	20-30	36	36%
	>=31	9	9%
	No Response	0	0%

e.g., physician assistants (PAs) or advanced registered nurse practitioners (ARNPs) available to assist with the daily workload. A majority of the respondents were male (81%) between the ages of 55 – 64 (42%) that are owners of interventional pain management offices that have been practicing medicine for the last 25 to 30 years.

Among the responders, 35% of the surveys were from the Northeast region of the United States, while 23%, 19% and 22% were completed by clinicians in the Midwest, South and West regions respectively. At the time of the survey, the northeast and west were most largely impacted by COVID.

As shown in Table 2, regarding the operational and economic impact, an overwhelming majority of provid-

ers (98%) report that COVID-19 has impacted their operations. The top 3 modifications in practice were a transition to high-fidelity (video and audio) telemedicine (77%), completely stopping all procedures except for emergencies (60%), and low-fidelity telemedicine (audio only) consultations (36%). Of note, none of the respondents report their practice performing normally. Most providers (91%) have seen a reduction in collections and are monitoring/reducing spending due to uncertainty (77%).

In addition, 67% of the respondents felt that billing and coding in-house was responsible for stress and burnout, whereas only 32% felt that outsourcing was responsible for their stress. In addition, 73% responded

Table 2. Provider responses related to impact on business, caseload, and reported burnout.

Question	Response	Total	(%)
Have your operations been impacted by COVID-19?	Yes	98	98%
	No	0	0%
	No response	2	2%
Changes in Operations:	We have had to close office	19	19%
	Telemedicine (Using video/audio)	77	77%
	Telemedicine (Using audio only)	36	36%
	We have stopped all procedures except emergencies	60	60%
	We have been performing at reduced < 20% volume of procedures	28	28%
	We have been performing less than 50% of procedures	19	19%
	We have been performing normally	0	0%
	Other	4	4%
Changes in Workforce:	We have (or anticipate) reduced staffing through furloughs and/or layoffs	55	56%
	We have reduced hours per staff	67	68%
	We have changed our current/future hiring plans	41	42%
	Staff are allowed to work remotely	45	46%
Changes in Finances:	We have seen a reduction in collections	89	91%
	We are planning to suspend or significantly curtail operations	28	29%
	We are monitoring/reducing spending due to uncertainty	75	77%
	Other financial changes:	6	6%
	Other	13	13%
Billing and Coding:	In-house	67	67%
	Outsourced	32	32%
	No Response	1	1%
Documentation:	EMR	73	73%
	Transcription	2	2%
	Both	22	22%
	No Response	3	3%

## ASIPP Burnout Survey Report

that electronic medical records (EMR) was responsible for burnout, whereas 22% felt that EMR and transcription were responsible for burnout with only 2% claiming transcription being the cause of burnout.

Table 3, shows the personal, operational, and financial outlook. As expected, 78% of clinicians express that other providers should be very concerned. Providers anticipate that the most challenging task will be

*Table 3. Personal, operational, and financial outlook.*

How concerned should providers be?	Very concerned	78	78%
	Moderately concerned	20	20%
	Not concerned	1	1%
	No response	1	1%
Which of the following will be most challenging?	Having enough clinicians or caregivers	21	22%
	Maintaining an adequate stockpile of supplies	49	52%
	Maintaining an adequate stockpile of PPE's for patients and staff	55	58%
	Caring for patients exposed to COVID-19	46	48%
	Other	24	25%
What is your outlook on the long-term impact of coronavirus (COVID-19) on your practice?	Positive	16	16%
	Negative	60	60%
	Neutral	23	23%
	No Response	1	1%
What is your outlook on the long-term impact of coronavirus (COVID-19) on healthcare industry?	Positive	17	17%
	Negative	66	66%
	Neutral	15	15%
	No Response	2	2%
Have you felt burned out from practicing medicine at any point during your career?	Yes	76	76%
	No	23	23%
	No Response	1	1%
Do you feel burned out right now?	Yes	52	52%
	No	46	46%
	No Response	2	2%
Have you avoided expressing feelings of burnout because you're afraid of being judged negatively by peers?	Yes	34	34%
	No	63	63%
	No Response	3	3%
Have your feelings of burnout ever made you want to quit practicing medicine?	Yes	55	55%
	No	44	44%
	No Response	1	1%
Provider pay/salaries for physicians:	Guarantee	11	11%
	Guarantee + Bonus	15	15%
	Production	54	54%
	Guarantee + Production	19	19%
	No Response	1	1%
Provider pay/salaries for PAs and ARNPs:	Guarantee	37	37%
	Guarantee + Bonus	26	26%
	Production	5	5%
	Guarantee + Production	16	16%
	No Response	16	16%

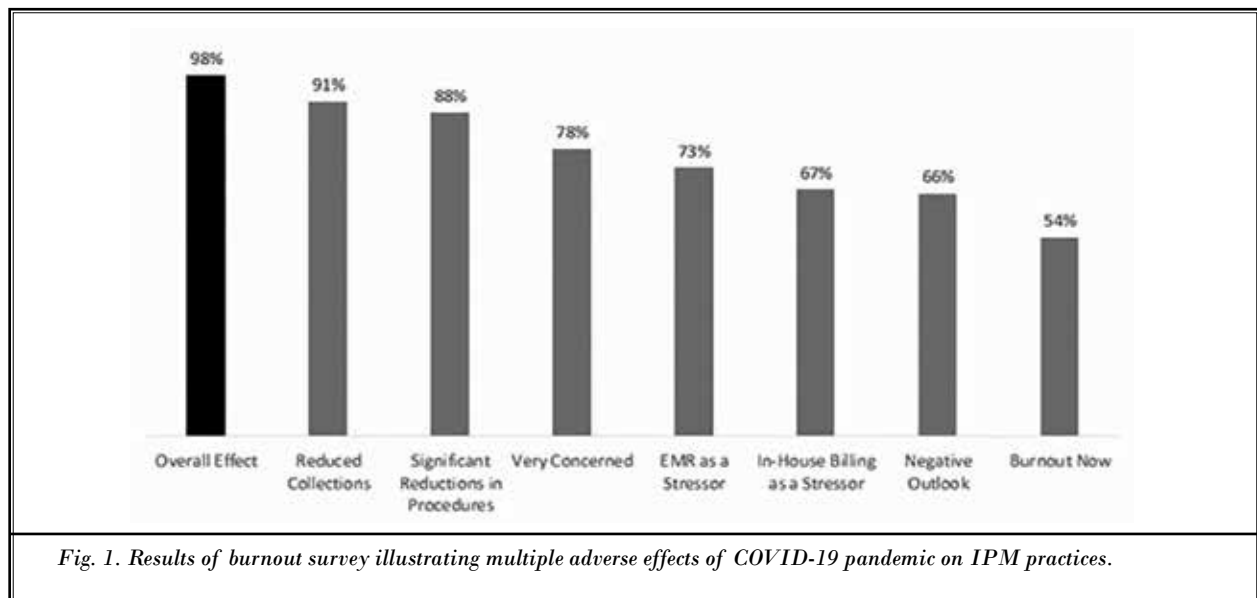
maintaining adequate personal protective equipment (PPE) for patients and staff (58%), adequate stockpile of supplies (52%), and caring for COVID-19 exposed patients (48%) respectively. Unfortunately, a majority of responders (60%) believe COVID-19 will have a negative long-term impact on their practice and the overall healthcare industry (66%).

Questions related to surveying mental, emotional, or physical exhaustion suggest that more than half (52%) of physicians feel burned out, however a high majority (76%) report previously feeling this way earlier in their career. When reviewing the written feedback of what has contributed most to being in this state of exhaustion, the top three reasons were attributed to financial stress (23%), administrative burden (11%), and uncertainty (12%) respectively. Additionally, when asked what the solution to physician burnout is, the top 3 responses were healthcare reform (35%), work-life balance (14%) and decreased administrative burden (13%). Summary of salient results are shown in Fig.1.

## DISCUSSION

Approximately 7 weeks after the WHO declared novel coronavirus (COVID-19) a pandemic, ASIPP surveyed the general impact on interventional pain practices during the month of April 2020. At the time this manuscript was written, the pandemic had significantly impacted essentially every interventional pain practice throughout the United States. This disruption has led to a stark transition to telemedicine, significant financial

stress, with concerns over PPE supplies. It is worth mentioning that the free responses provide a glimpse into what may broadly impact physician burnout. While a portion of the respondents (9%) do not consider themselves exhausted, the general inquiry warrants further investigation to disentangle whether something such as financial stress (payer reimbursement, reduced revenue, overhead costs etc.) is elevated specifically due to COVID-19 from baseline. Simultaneously, it is unclear whether the suggested solutions to physician burnout are specific to the facility, overall healthcare industry e.g. Healthcare Reform on a local/systemic level or aimed in response to COVID-19. There are many causes of additional stress to interventional pain management physicians during this time. Economic stresses on the practice of pain management and financial losses in the economy may place a burden on physicians and their practices. The survey revealed that 91% of physicians will see a reduction in collections. It seems most physicians have awareness and concerns about collections and as a result 77% of those surveyed mentioned they would be monitoring or reducing spending due to uncertainty. Some of this reduction in spending is coming at the expense of the staff in a physician clinic as 56% of those surveyed anticipate a reduction in staffing through furloughs and/or layoffs and another 68% have reduced staff hours. In addition, the survey also shows that billing and coding in house and EMR systems are responsible for significant stressors with 67% and 73%, respectively.



Further, stressors at home with things like daycare or the handling of homeschooling children may be stressors outside of the practice of medicine. The uncertainty of how long COVID-19 will last and its long-term impact also places stress on practicing physicians.

Other surveys have shown similar effect on health care workers. Researchers in China conducted a cross-sectional study published in March 2020, with assessment of 1,257 health care workers in China during the coronavirus pandemic and reported troubling results with 50.4% having symptoms of depression, 34% with insomnia, 44.6% with anxiety, and overall 71.5% reporting distress (45,46). They also postulated that working in the frontline was an independent risk factor for worse mental health outcomes in all dimensions of interest. Even during regular professional practice, health care professionals have been showing soaring levels of burnout (47). However, burnout in health care professionals is soaring now due to the coronavirus pandemic, which is similar to having the effect of stabbing a fresh wound (45). Due to the pandemic, physicians are required to take on extra workload with an ever-increasing threat of infection, quarantine, and even death. In addition, physicians may be increasing the risk of their family of contracting the virus which is further exacerbated by shortages of PPE. Further, physicians also have to make extremely difficult decisions such as the allocation of critical materials and supplies. Interventional pain physicians have to worry not only about the financial consequences to their staff and family, but also their patients who will suffer without interventional techniques and restricted assessments among new and pre-existing patients. This may cause the opioid epidemic to explode because many patients may suffer with untreated pain.

It has been stated to think of the pandemic as a marathon, not a sprint. It is difficult to be optimistic about the future considering that the constant threat of lockdowns, political meddling without appropriate assistance or uniformity in assessing the future. Consequently, as shown in this survey, many physicians are willing to retire if they could and a large proportion (55%) want to quit. In addition, 66% had a negative outlook of the long-term impact of COVID on the healthcare industry and 60% also felt negative about their individual practices.

To survive into the future, there is no magic bullet. It is crucial to stay positive, utilize all available avenues with loan programs and grants, work with your staff

and patients, and to practice mitigation and risk stratification strategies for safe practices.

Maurya W. Glaude (48), Associate Director of Field Education and Professor of Practice at Tulane University, speaking to ASIPP membership about managing stress and burnout for healthcare professionals in private practice started with a quote, "At the end of the day, we are all human. We are resilient beings, and we each respond to stress differently. We have our own thermometers for the activation of fight-flight-freeze response." She also described that compassion fatigue, which is state experienced by those helping people in distress with extreme state of tension and preoccupation with the suffering of those being helped to the degree that it is traumatizing for the helper (49). Doctors and other health care providers and a multitude of workers involved in helping others are at risk professionals. She described 9 signs of burnout or secondary traumatic stress as follows:

1. Sadness, depression or apathy
2. Feeling easily frustrated
3. Feeling isolated or disconnected from others
4. Feeling tired, exhausted, or overwhelmed
5. Feeling like a failure or that nothing you can do will help
6. Excessive worry or fear about something bad happening
7. Being easily startled, or "on guard" all of the time
8. Having physical signs of stress (e.g., racing heart)
9. Nightmares or recurrent thoughts about the traumatic situation

She also provided 7 tips for reducing stress as follows:

1. Stay connected (social network, family, friends using technology)
2. Limit exposure while staying informed
3. Take breaks or breathers
4. Walk or run off the extra stress
5. Accept support and sharing support with others
6. Care for yourself (as well as you care for others)
7. Get professional help (Telehealth)

Finally, she closed the presentation stating that, "We are all responsible for self-care."

Dr. Haidar Al-Hakim, an ophthalmologist and physician burnout coach based in the UK, recommended the following (45):

- Remember your mission  
We must learn to accept our present for what it is and have faith that everything happens for a reason.
- Build your resilience

Resilience will assist in bouncing back from stressful situations and viewing difficulties as challenges, with a proactive attitude. Resilience can be learned through practice using your preferred method, whether physical, psychological, or spiritual to help to face adversity. Examples of resilience include yoga, support groups, meditation, breathing exercises, and journaling.

- Focus on the present  
Whatever is the present situation one is going through shall end. Consequently, focusing on the present will give an individual the chance to be the best self.
- Be realistic but stay positive.  
It is easy to drown in negative, self-talk. "Reclaim your internal narrative and change it from a narrative of fear, division, and destruction to a narrative of construction, healing, and faith"
- Even though difficulties are anticipated, stop them from letting those difficulties turn one's life down.
- Practice self-care. Health care workers must take care of themselves, eat healthy food, stay active, and rest sufficiently between shifts.
- Practice appropriate protective measures for yourself and for your family.
- Practice gratitude. Since even in the darkest times, we have things to be grateful about, thus, we must count our blessings (45).  
Whether it is health, family, meaningful work, being grateful will help and pull one through difficult times.

### **LIMITATIONS**

This pilot survey had a small sample size (n = 179) with a moderate response rate so the conclusions may not be widely generalized to other specialties and may not accurately represent the overall physician (underserved/rural) community. Additionally, this survey was completed during the month of April, approximately one month after the World Health Organization declared COVID-19 a pandemic (March 11th, 2020), so these data lack a comparison group to detect if the responses are substantially different before said time point. Additionally, the survey was performed before

any of the congressional aid packages had been initiated. Finally, this survey is not a validated tool for assessing physician burnout which – as previously mentioned – warrants further investigation using the appropriate methods e.g. Maslach Burnout Inventory-Human Services Survey.

### **CONCLUSION**

Burnout is common among medical professionals, specifically among interventional pain physicians (5,50). This survey demonstrates that the pandemic has drastically affected the physical and mental health of interventional pain professionals with substantial negative attitudes among an overwhelming number of practices (78%). Most physicians are negative about the future (60%) and more than half want to quit practicing medicine (55%). Exacerbating factors for burnout include billing and coding, which was the cause of stress in 67% of physicians with in-house billing. Documentation through EMRs was a significant cause of stress in 73% of physicians. Improvements in EMR design can help assuage physician burnout. The COVID-19 pandemic continues to have negative effects on wide swaths of our nation including our pain physician community.

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The study was designed by LM, AS, and \*VP.

Manuscript preparation and analysis of data SJ, SS and AS.

All authors contributed to preparation to the manuscript, reviewed, and approved the content with final version.

Compliance with Ethical Standards: All authors declare that he/she has no conflict of interest.

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**Appendix Table 1: COVID-19 Physician Burnout Questionnaire.**

1. Gender:
  - a. Male
  - b. Female
2. Age:
  - a. <35
  - b. 35-44
  - c. 45-54
  - d. 55-64
  - e. >=65
3. Specialty:
4. City:
5. State:
6. Are you an:
  - a. Employer/Owner
  - b. Employee
  - c. No Response
7. Place of service:
  - a. Office Ambulatory
  - b. Surgery Center
  - c. Hospital
  - d. Other
8. Primary practice:
  - a. Interventional Pain Management
  - b. Pain Management
  - c. Anesthesiology
  - d. Physical Medicine and Rehabilitation
  - e. Comment
9. Percentage of practice of IPM
  - a. <=25%
  - b. 26-50
  - c. 51-75
  - d. >=76
  - e. No Response
10. Number of years practicing
  - a. < 5
  - b. 5-10
  - c. 10-15
  - d. 15-20
  - e. 20-30
  - f. >=31
  - g. No Response
11. Number of hours work per week:
  - a. <20
  - b. 21-40
  - c. 41-50
  - d. 51-60
  - e. >=61
  - f. No Response
12. Number of physicians including you:
13. Number of PAs/ARNPs
14. Total Staff:
  - a. < 10
  - b. 10-20
  - c. 20-50
  - d. 50-100
  - e. 100+
15. Have your operations been impacted by COVID-19?
  - a. Yes
  - b. No
  - c. No response
16. "Changes in operations:"
  - a. We have had to close office Telemedicine (Using video/ audio)
  - b. Telemedicine (Using audio only)
  - c. We have stopped all procedures except emergencies
  - d. We have been performing at reduced < 20% volume of procedures
  - e. We have been performing less than 50% of procedures
  - f. We have been performing normally
  - g. Other
17. "Changes in workforce:"
  - a. We have (or anticipate) reduced staffing through furloughs and/or layoffs
  - b. We have reduced hours per staff
  - c. We have changed our current/future hiring plans
  - d. Staff are allowed to work remotely
18. "Changes in finances:"
  - a. We have seen a reduction in collection
  - b. We are planning to suspend or significantly curtail operations
  - c. We are monitoring/reducing spending due to uncertainty
  - d. Other financial changes:
  - e. Other
19. How concerned should providers be?
  - a. Very concerned
  - b. Moderately concerned
  - c. Not concerned
  - d. No response
20. "Which of the following will be most challenging?"
  - a. Having enough clinicians or caregivers
  - b. Maintaining an adequate stockpile of supplies
  - c. Maintaining an adequate stockpile of PPE's for patients and staff
  - d. Caring for patients exposed to COVID-19
  - e. Other
21. "What is your outlook on the long-term impact of coronavirus (COVID-19) on your practice?"
  - a. Positive
  - b. Negative
  - c. Neutral
  - d. No Response
22. "What is your outlook on the long-term impact of coronavirus (COVID-19) on healthcare industry?"
  - a. Positive
  - b. Negative
  - c. Neutral
  - d. No Response
23. "Have you felt burned out from practicing medicine at any point during your career?"
  - a. Yes
  - b. No
  - c. No Response
24. "Do you feel burned out right now?"
  - a. Yes
  - b. No
  - c. No Response
25. "What has contributed the most to your feelings of burnout?"

26. "Have you avoided expressing feelings of burnout because you're afraid of being judged negatively by peers?"
- a. Yes
  - b. No
  - c. No Response
27. "Have your feelings of burnout ever made you want to quit practicing medicine?"
- a. Yes
  - b. No
  - c. No Response
28. "What do you believe is the solution to physician burnout?"
29. Billing and Coding:
- a. In-house
  - b. Outsourced
  - c. No Response
30. Documentation:
- a. EMR Transcription
  - b. Both
  - c. No Response
31. "Provider pay/salaries for physicians:"
- a. Guarantee
  - b. Guarantee + Bonus Production
  - c. Guarantee + Production
  - d. No Response
32. "Provider pay/salaries for PAs and ARNPs:"
- a. Guarantee
  - b. Guarantee + Bonus
  - c. Production
  - d. Guarantee + Production
  - e. No Response