

A SURVEY OF PHYSICIANS AND PRACTICE ADMINISTRATORS IN THE UNITED STATES

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Objective: The purpose of this study was to evaluate the current impact of COVID-19 on physician outpatient practices in the US, the implementation of telemedicine, and the availability and usage of personal protective equipment in practice.

Results: A total of 1,434 individuals completed the surveys, specifically 1,244 physicians and 190 practice administrators. The majority of physicians (74%) reported that the number of patient visits in their practice has decreased by at least half due to the COVID-19 pandemic, with 41% of physicians reporting even steeper declines of three-quarters or more in patient volume. Similarly, 59% of physicians estimated that procedure volume has decreased by over 75%. A reported 15% of physicians have closed their practice. Practice administrators reported that 81% of practices have applied for government-funded small businesses assistance. Since the spread of COVID-19 in the US, 83% of respondent physicians denoted they now use telemedicine for patient care. Nearly all surveyed physicians reported that PPE is used by clinical staff during practice operating hours. However, PPE supplies are limited: half of physicians estimated that the quantity of PPE available in their practice is a 2-week supply or less. Over half of physicians conveyed they were very or extremely concerned with the negative long-term effects of the pandemic on their practice.

Conclusions: Most outpatient practices have experienced substantial negative impacts on their overall function as they adapt to spread of COVID-19 in the US. Data from the surveys described in this report also informed the educational needs of clinicians practicing in the outpatient setting during the COVID-19 pandemic. Further survey response data from this ongoing study is expected to continue to shed light on the evolving needs of outpatient physicians during this pandemic.



INTRODUCTION

The initial patients with COVID-19, the disease caused by the novel coronavirus SARS-CoV-2, were first reported to the World Health Organization (WHO) in December 2019.^{1,2} On March 11, 2020, WHO declared the spread of COVID-19 a pandemic, and the United States (US) declared a national emergency in response to the disease on March 13, 2020.³ Patients with COVID-19 have a nonspecific presentation that includes fever, dry cough, and sometimes shortness of breath.¹ The novel coronavirus has a wide range of symptom severity and its course presentation varies from asymptomatic to fatal.^{1,4} Moreover, the virus has high transmissibility,⁵ which elevates the threat to public health especially since many infected individuals may silently transmit the virus while asymptomatic or with mild symptoms.

Patients with mild or moderate coronavirus-like symptoms are likely to present to an outpatient office or facility for care, unaware of their risk for COVID-19. While there is guidance for identification and management of patients with COVID-19 who present to hospitals, very little is available to guide healthcare providers, including physicians, nurses, and pharmacists, in the outpatient setting. Clinicians must be prepared to protect other patients, practice staff, and themselves from viral transmission; collect test specimens appropriately; remain up to date on shifting developments in COVID-19 treatment protocols; and maintain effective disinfection of the practice environment. The successful adoption of telehealth for patient evaluation and management of patients would further decrease the burden of exposure to the virus.⁶

Based on other respiratory illness pandemics witnessed in the 20th century, the COVID-19 pandemic is likely to recur in waves.^{7,8} Thus, clinicians will need ongoing education and reinforcement in addressing COVID-19 in the outpatient setting. The purpose of this study was to evaluate the current impact of COVID-19 on the functioning of physician outpatient practices in the US, telemedicine implementation, and the availability and usage of personal protective equipment (PPE) in practice. To address this objective, online surveys were developed for physicians and practice administrators in the US to assess the status of their practices at this time; the survey will remain ongoing to continue to evaluate trends in the effect of the COVID-19 pandemic on outpatient practices.

METHODS

We developed two separate online surveys for physicians and practice administrators, in collaboration with state medical societies from Arizona, California, Connecticut, Kentucky, Louisiana, Maryland, Mississippi, Michigan, Minnesota, Missouri, New Jersey, Montana, Oklahoma, Pennsylvania, Tennessee, Virginia, and Wyoming, to assess current practice status and operational impact from COVID-19 in the US. The surveys were distributed to individual outpatient physicians and to practice administrators in 30 states. Physician surveys were not limited by specialty type, and were available to actively practicing outpatient physicians. Distribution of the online surveys began April 17, 2020, and survey response collection is ongoing. This preliminary study reflects interim data from responses captured through April 23, 2020 from the online survey.

Both the physician and practice administrator surveys were conducted solely via an online format, with the physician version of the survey consisting of 17 multiple-choice questions and the practice administrator version consisting of 12 multiple choice questions. The surveys were constructed to examine three principal areas of focus, specifically COVID-19 impact on physician outpatient practice functioning, telemedicine implementation, and the availability and usage of PPE in practice. Questions related to the focus area regarding practice functional impact included subject themes of patient volume, procedure volume, practice closures, staffing changes, and government-funded financial assistance. Telemedicine-related questions concentrated on adoption or usage, platform type, and reimbursement, whereas the survey questions regarding PPE centered on degree of usage and supply estimates. Perceptions, concerns, and educational needs related to COVID-19 in outpatient practice were also investigated in the surveys.

Data management, extraction, and statistical analyses were performed using Educational Trak (Educational Measures, 2003, Centennial, CO). Descriptive univariate statistics were conducted to evaluate overall data and response patterns.

RESULTS

Survey Respondent Characteristics

A total of 1,434 individuals have completed the surveys to date, with 1,244 physicians and 190 practice administrators responding. Physicians from 30 states and practice administrators from 12 states participated in the online surveys. Respondent practices were primarily located in Pennsylvania, with 76% of surveyed physicians and 78% of surveyed practice administrators being based in that state. Other states represented by survey respondents include New Jersey (physicians, 8%; practice administrators, 11%), Florida (physicians, 5%; practice administrators, 4%) and Virginia (physicians, 4%; practice administrators, 0%), with the remaining states each reflecting 1% or less of the total surveyed individuals.

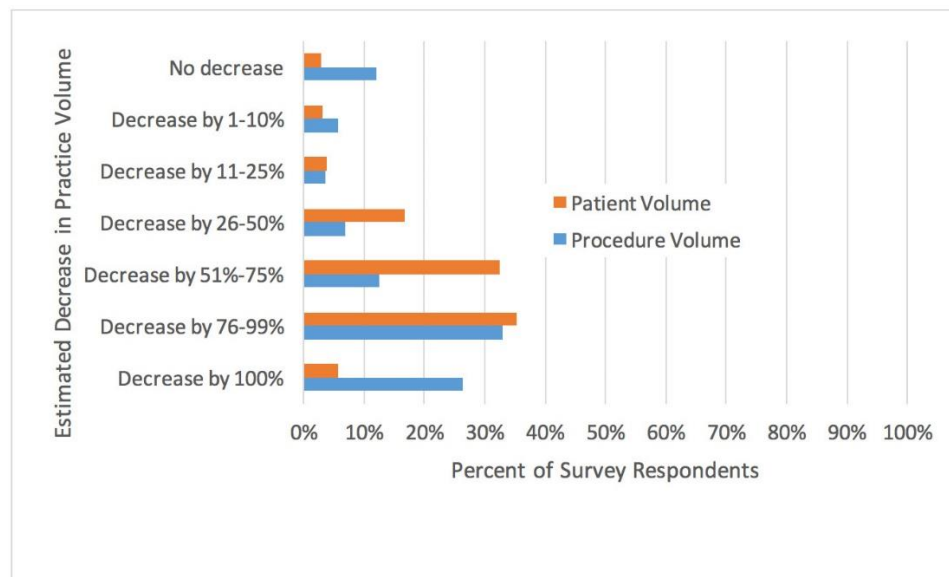
Among responding physicians, over half had practices that were self-owned or independent groups (57%), and over a quarter of practices were hospital-owned groups (28%). A minority of practices were characterized as corporation-owned (8%) or government-based (2%).

Almost a third of physicians (29%) who completed the survey were those who practiced adult primary care medicine, self-identifying as practicing family medicine, internal medicine, or general primary care. Pediatrics and obstetrics/gynecology represented 8% and 6% of all survey participants, respectively. The remaining respondent physicians were non-primary care specialty physicians.

COVID-19 Impact on Outpatient Practice Function

The majority of physicians (74%) reported that the number of patient visits in their practice has decreased by at least half, specifically due to the COVID-19 pandemic, with 41% of physicians reporting even steeper decreases of three-quarters reduction or more in their patient volume. Similarly, most physicians have experienced large decreases in the number of procedures that they perform, with 59% of physicians estimating that procedure volume has decreased by at least 76%. Over a quarter of physicians (26%) have had complete discontinuation of all their procedures that they usually perform because of COVID-19 (Figure 1).

Figure 1. Percentage Decrease in Practice Volume Due to COVID-19, Per Outpatient Physicians.



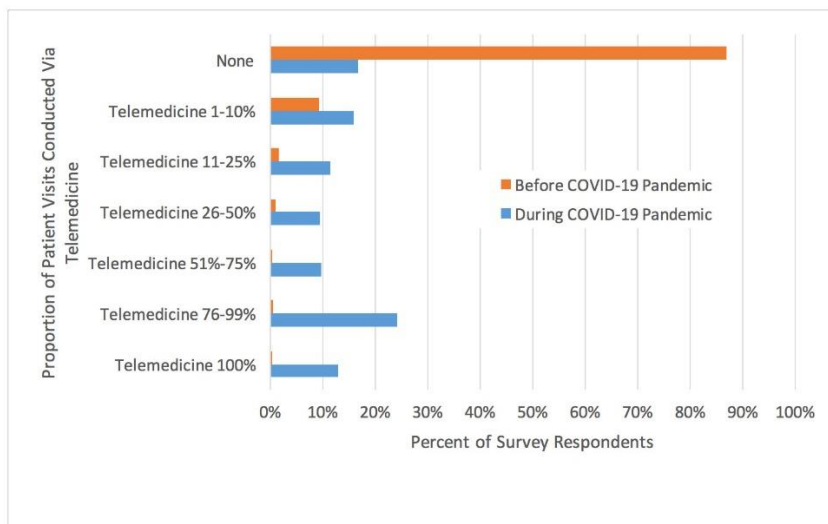
Although 65% of respondent physicians continue to have their practices open to patient care, 15% of physicians have closed their practice, either temporarily or permanently, as a result of COVID-19. Another 20% of physicians remained unsure whether to remain open at this time. The overall staffing of practices has been affected as well, with workforce reductions in clerical staff, nursing staff, advanced practice providers such as nurse practitioners or physician assistants, and physicians. Surveyed physicians reported 28% of their clerical staff have been reduced by at least half or more. Nurses in outpatient practices have experienced similar workforce cuts, with 35% of nursing staff reduced by at least half or greater according to physician survey respondents. Staff reductions of at least half or more among advanced practice providers and physicians were 20% and 14%, respectively. When queried about their levels of concern related to COVID-19's practice impact, 53% of physicians conveyed they were very or extremely concerned with the negative long-term effects of the pandemic on their practice.

The survey of practice administrators found that 81% of practices have applied for government-funded assistance for small businesses related to COVID-19. Practice administrators also indicated that 62% of their practices have received an emergency payment or deposit from CMS.

Telemedicine Implementation

Prior to the spread of COVID-19 in the US, the majority (87%) of surveyed physicians were not conducting patient visits via telemedicine. However, due to the introduction of COVID-19, 83% of respondent physicians denoted they currently use telemedicine for patient care, with 47% of physicians conducting at least half of their visits through telemedicine (Figure 2). The use of telephone for telemedicine encounters compared with internet-based platforms was generally similar; 39% of physicians indicated that at least half of their telemedicine visits were conducted via telephone and 40% of physicians indicated that at least half of their telemedicine visits were via the internet. The survey of practice administrators found that the most commonly adopted telehealth platforms for their practices were Zoom (30%), Facetime (26%), and eClinicalWorks (9%).

Figure 2. Percentage of Patient Visits Conducted Via Telemedicine Before and During COVID-19 Pandemic, Per Outpatient Physicians.



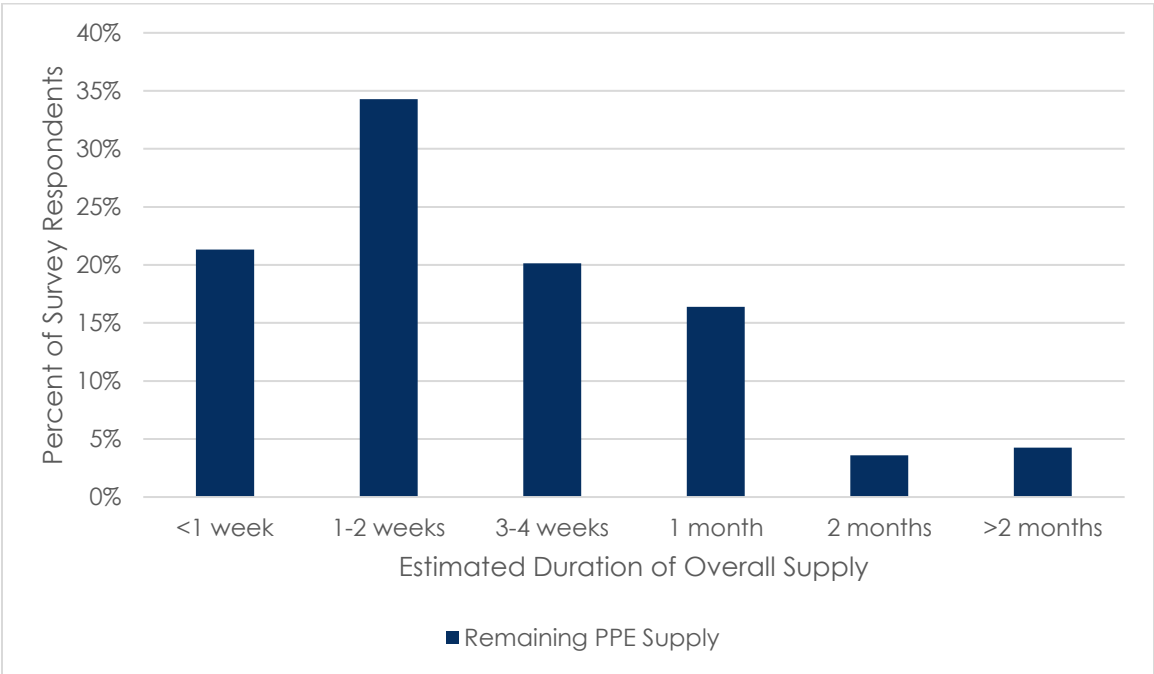
Physicians reported that the overall reaction from their patients regarding telemedicine visits has mostly been favorable, with 56% of physicians indicating generally favorable patient feedback on telemedicine. Although 37% of physicians considered the overall patient reaction to telemedicine to be neutral, only 7% obtained overall unfavorable patient response to telemedicine visits.

Among respondent physicians, 27% rated reimbursement for telemedicine encounters as “difficult” or “very difficult.” In a similar manner, 29% of surveyed practice administrators reported having difficulty with reimbursement for telemedicine. However, 45% of practice administrators described having no difficulty with telemedicine reimbursement while 26% conveyed that telemedicine reimbursement was not applicable to their practices.

Use and Availability of PPE

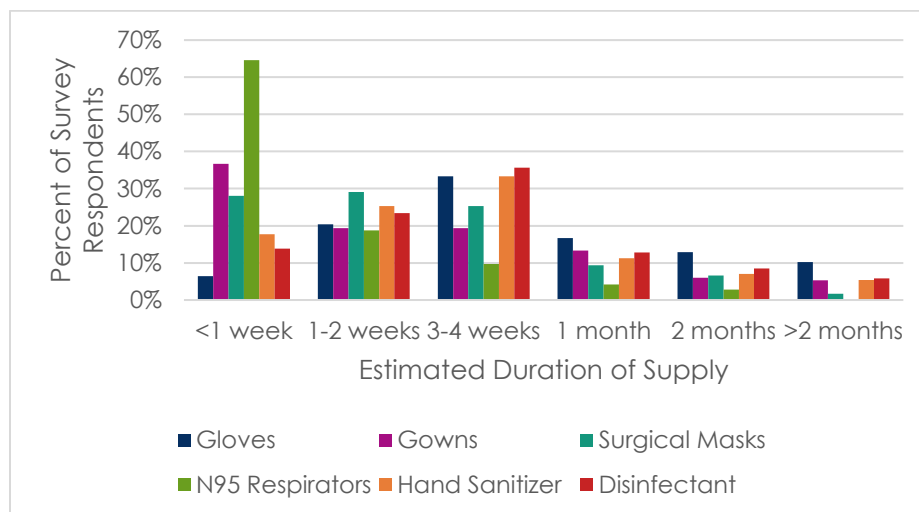
Nearly all surveyed physicians (98%) reported that PPE is used by clinical staff during practice operating hours, and most practices (61%) implement PPE for patients, clerical and clinical staff. However, over a fifth of respondents (22%) denoted that PPE usage was limited to clinical only. Over half of physicians (56%) estimated that the quantity of PPE available in their practice is a 2-week supply or less. Few respondents (8%) specified that their practice supply of PPE that would last 2 months or greater (Figure 3).

Figure 3. Estimated Duration of Overall PPE Supply for Use in Practice, Per Outpatient Physicians.



When queried on the degree of availability of specific PPE items, practice administrators reported shortages for all items types, with N95 respirators in lowest supply. The majority of surveyed practice administrators (84%) estimated a 2-week supply or less for N95 respirators currently available in their practices, and 57% of respondents estimated the same limited supply for gowns and surgical masks. Gloves were reported as having the least limitations on availability relative to other PPE items, with 27% of practice administrators estimating the practice supply of gloves lasting 2 weeks or less. Over 40% of survey respondents estimated that the current availability of hand sanitizer and other disinfectants in their practices would last 2 weeks or less (Figure 4).

Figure 4. Estimated Duration of Specific PPE Item Supply in Practice, Per Practice Administrators



DISCUSSION

The findings from this study provide a snapshot of the challenges outpatient physicians currently encounter in the evolving COVID-19 public health crisis. The survey results demonstrated that the pandemic has substantially affected the function of physician practices in the US. Most physicians in the survey have experienced abrupt decreases in patient load and procedure volume, rendering financial hardships to outpatient practices. This period of economic uncertainty and outbreak unpredictability has led some physicians to hesitate regarding the future of their practices, with a small number of physicians in this sample closing their practices due to COVID-19. Correspondingly, a strong majority of practices have applied for government-funded financial assistance programs related to the pandemic, as reported by surveyed practice administrators. Many practices have also reduced their workforces in response to the decreased practice volume related to COVID-19. It is likely that novel coronavirus will continue to have significant negative impacts on outpatient practices far beyond the conclusion of the pandemic.

The use of telemedicine for healthcare systems mitigates many of the challenges of healthcare delivery amidst infectious disease outbreaks, namely reducing disease exposure risk and decreasing overcrowding at provider sites.⁶ Telemedicine is being rapidly implemented among surveyed physicians in this new era of social distancing to avoid any extraneous exposure to COVID-19. The survey results indicate that telemedicine has generally been well accepted by clinicians and patients alike and has been commonly accessed via publicly available telecommunication platforms. Despite increased adoption of telemedicine, physician reimbursement for telemedicine-based patient visits has remained difficult for many practices among surveyed respondents. However, as regulatory and legislative requirements regarding telemedicine evolve in response to the current coronavirus public health crisis, payer reimbursement is expected to continue to expand further and create more favorable reimbursement settings for physicians utilizing telehealth.⁶

Most physicians and practice administrators reported in the survey as having a 2-week supply or less of typical PPE. The limited supply of PPE across surveyed respondent practices is consistent with federal agency statements affirming global shortages of PPE and strained supply chains.^{9,10} Few physicians estimated that their current supply would last 2 months or greater. Unless outpatient practices gain substantially wider access to consistent PPE supply replenishment, it is conceivable that current levels of PPE stock in outpatient practices may not reliably last the duration of the COVID-19 outbreaks in the US. Unsurprisingly, given the current limits on global availability, N95 respirators were reported to be in the lowest supply among survey respondents in this study, followed by gowns and surgical masks.

Our study assessed current challenges to outpatient practices due to COVID-19 via an online multiple-choice survey, with interim findings presented in this report. This preliminary data remains limited, as illustrated by survey respondent characteristics which are over-represented by a single state at this time. Given the varied timing of localized outbreaks and state stay-at-home orders, the data results of this study may be sensitive to the geographical distribution of the survey respondents. However, survey response collection remains ongoing and continues to receive participation from physicians and practice administrators in all states. Subsequent study reports will provide greater geographic representation of the impact of COVID-19 on outpatient practice and additional sub-analyses of findings, including practice geography and specialty type. Other limitations of this study include the reliance of self-report from respondents regarding their estimates on practice volume and stock supply, however, self-reported data regarding healthcare utilization may be a reliable proxy in lieu of administrative data.¹¹

CONCLUSIONS

Most outpatient practices have experienced substantial shifts in their overall function and operational management as they adapt to spread of COVID-19 in the US. The adoption of telemedicine across outpatient practices has markedly increased due to COVID-19 and has been generally well accepted. However, most outpatient physicians have had sharp decreases in patient load and procedure volume, with some closing their practices in response. Non-physician workforce in outpatient practices have been affected as well, with numerous employee reductions to clerical, nursing, and advanced practice staffing. Moreover, most practices continue to have limited PPE currently in their supply stock. These findings signal that COVID-19 is likely to have considerable negative impacts on outpatient practice even beyond the end of the current outbreak.

These findings also help to define the educational needs of these clinicians as they continue to struggle with multiple obstacles in providing outpatient care. Insights into their educational needs were provided in comments that many survey respondents offered regarding their primary concerns related to the pandemic, e.g.:

- “Assisting individuals who are coping with ongoing anxiety disorders and pain conditions who now have added stress”
- “Concerned about immunosuppressed patients. They should all be using telemedicine. Few have the capacity to use the internet or FaceTime”
- “Concerns about how to return patients to in-person visits once the pandemic subsides since they are now used to relaxed structure and regulations”
- “Developing a strategy to safely provide care in my practice directly to my patients without telemedicine and without risk of infection to staff or patients”
- “I am doing 100% telehealth currently. I need guidance on how to transition back to seeing live patients safely.”
- “How to open practice, when to open practice. Is it safe for physicians 65+ to practice yet?”
- “Knowing that no matter what I implement, I still have to work in a room that is 9' x 9'”
- “How to guide my patients and staff in the next year”
- “Balancing patient centered care with public health concerns”
- “Continuously changing regulations and guidelines”

But among the despair, hope remains:

- “We will stick it out”
- “We’ll get through this”

From the analysis of the data and comments, educational needs were identified, including:

- Epidemiology and pathophysiology of SARS-CoV-2
- General guidelines for mitigating risk of COVID-19 infection in the practice setting
- Guidance specific for the individual specialties who manage patients in the outpatient setting
- Implementing telemedicine into patient care, including available platforms, documentation, reimbursement, patient engagement
- Strategies for effective patient communication regarding pandemic-related issues, i.e. maintaining mental health, care in the peri- and post-pandemic setting
- Approaches for management of COVID-19 patients in special populations

Future survey response data from this ongoing study is expected to continue to shed light on the evolving needs of outpatient physicians during this pandemic, while bolstering the development of practice-optimization strategies and educational frameworks. Hopefully, there will also be potential positive outcomes to consider, e.g. reimbursement for telehealth visits via telephone may provide greater access to care for low income and elderly populations.

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