Virtual Care Billing Analysis

Canadian Network for Digital Health Evaluation, Women's College Hospital Institute for Health System Solutions and Virtual Care

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Operational Definitions

Virtual care includes the use of technology, synchronous or asynchronous, to provide and receive health care services in lieu of in-person care. Modalities include phone calls, video conferencing, remote monitoring, asynchronous messaging (e.g., email, texting), and the use of a patient portal (1,2).

Acronyms

CIHI The Canadian Institute for Health Information

CNDHE Canadian Network for Digital Health Evaluation

ED Emergency Department

WIHV Women's College Hospital Institute for Health System Solutions and Virtual Care

Executive Summary

The pandemic led to the rapid virtualization of health care across Canada. In response, the Canadian Network for Digital Health Evaluation (CNDHE) was formed, and launched a number of quantitative projects to better understand the potential impact. This report summarizes our work in three related projects. Specifically, the work explores the extent and impact of the rapid virtualization of health care on utilization, quality, and remuneration of care during the first two years of the pandemic. More importantly, the report provides insights on how to collect and monitor health care data to facilitate shared learnings. We documented the spectrum of billing codes for care offered through video calls, phone calls, and asynchronous messaging and policies implemented to incentivize virtual care delivery in each province and territory. We developed a tracking mechanism that allowed visualization of changes in virtual care use over time. We also sought to investigate whether increased virtual care use added additional burden to emergency departments (ED) in Ontario and collaborated with the Canadian Institute for Health Information (CIHI) to promote cross-provincial learning.

Objectives

The objectives of these projects were to:

1. Identify and monitor the various approaches used by the provinces and territories of Canada to support the rapid virtualization of health care.
2. Evaluate any potential burden that virtual health care may have placed on the system and communities.

Methods

We completed three studies within this report. First, we conducted an environmental scan of the billing codes for virtual care across Canada through grey literature reviews and input from key informants. Second, in Ontario, we created a visualization of the utilization of virtual care, using ICES (formerly known as the *Institute for Clinical Evaluative Sciences*) linked and encoded population-based health databases containing population demographics, and physician services. Third, we again used ICES linked and encoded population-based health databases containing inpatient hospitalizations and ED visits to examine the impact and utilization of virtual care. All Ontario residents with valid OHIP health care coverage who are 18 years of age or older were included in both studies using ICES databases. These datasets were linked using unique encoded identifiers and analyzed at ICES.

Summary of Key Results

- Each province and territory adopted distinct approaches to fund virtual care, as reflected by the diverse billing codes implemented across Canada.
- Access to virtual services is difficult or non-existent for the average resident in the Territories, and as such Nunavut did not have any virtual care codes. The Northwest Territories and the Yukon had a larger focus on codes for communication that exclude patients, such as between a physician and an allied health professional.

- The differences in billing codes among provinces and territories present a unique opportunity to compare and contrast distinct approaches to virtual care physician reimbursement and should continue to be monitored.
- Many virtual care billing codes that were introduced as temporary measures at the start of the pandemic have been transitioning to permanent codes, while others have been modified to favour one modality over another.
- The total number of outpatient visits during the pandemic remained comparable to pre-pandemic numbers, due to the uptake of virtual care – irrespective of age, chronic disease, or socioeconomic status.
- Virtual visits continue to make up a large percentage of overall ambulatory visits.
- The increase in virtual care did not lead to a rise in ED admission volumes and pre-admission outpatient care compared to the pre-COVID period in Ontario. Consistent with pre-pandemic times, most patients were admitted directly to the ED, and a subset was seen in person or virtually prior to visiting the ED, with no obvious added burden to the health care system.

Discussion

The rapid virtualization of care was facilitated by the introduction of new billing codes, with sustained use despite significant variation across various waves of the pandemic. As health systems determine how to best support the appropriate use of virtual care, systematic comparisons of current billing codes across provinces and territories and pre-post studies in changes in billing codes within regions can help surface the most effective modes of remuneration. Dashboards that track variations in use of virtual care over time as well as

comparing ED use with virtual care are two effective ways to track its impact. We have demonstrated variations in uptake across Ontario and shown no difference in ED visit rates, but this work could be repeated across provinces over time to look for trends that are unrelated to the COVID pandemic to evaluate the real-world effectiveness of different modalities and policies.

Recommendations

1. Continue to monitor these dynamic changes. The shift to virtual care was very rapid, and clinical practice is still in flux. The impact of the virtualization of health care is still unknown, which presents an opportunity and need for a national strategy and national work.
2. Invest in national collaborations to share learnings. This involves systematic comparisons of remuneration models and uptake at multiple time points across provinces and territories to inform future billing practices.

Conclusion

The health care landscape is constantly shifting as Canada adapts to a new age of virtual care delivery. As policies and the utility of virtual care continues to change, we should continue to track and monitor these trends to inform future decisions. The CNDHE is well-positioned through foundational work to conduct important future studies. Additional research is warranted in order to gain a better understanding of how these policy changes affect unattached patients and various sociodemographic groups.

Virtual Care Code Environmental Scan

Background

Due to the COVID-19 pandemic, the Canadian health care system rapidly shifted to providing virtual care. Provinces and territories took different approaches to billing for virtual care, from Alberta, Manitoba, New Brunswick, Nova Scotia, and Quebec billing in-person services at the same rate as virtual services, to British Columbia, Prince Edward Island, and Newfoundland and Labrador setting specific rates depending on the clinical specialty, length of session, or age of patients. Documenting these approaches can help provide options for policymakers as they decide whether to make temporary billing codes permanent and/or modify existing codes to encourage the appropriate use of virtual care.

Methods

An environmental scan identifies and monitors any relevant data that can impact the topic of interest. This method was used to document the virtual health care billing codes used across Canada's provinces and territories. The environmental scan was conducted twice to reflect the changing environment of virtual care; once from June 2021 to October 2021, and then again in December 2022. Information was gathered through review of grey literature, as well as consulting key informants in each province and territory. Provincial and territorial health care websites were searched, as well as publicly available bulletins, regarding the process for physicians to bill virtual care services. We collected information on the specific codes used, the modality through which the service could be provided (phone, video, or asynchronous messaging), any specifications for the type of physician, what type of service

the code covered, the date the code was implemented, the rate at which the code could be remunerated, and any relevant policy notes.

Results

We grouped our findings by individual provinces and territories. Codes for virtual care were used in almost all jurisdictions, with the exception of Nunavut, and varied greatly.

Billing code summary tables can be found here:

https://cdhe.wchwihv.ca/work.html

During the initial onset of the pandemic, many provinces/territories took different approaches to what was later established. For example, the Ontario Ministry of Health initially billed in-person, video, and phone visits at the same rate. Modifiers to these rates were based on the duration of the interaction, irrespective of whether the patient was attached or unattached. However, a new model was introduced on December 1, 2022, whereby all codes were designated as permanent, and different rates are now applied depending on the modality, and whether providers and patients had an in-person visit in the last 24 months. In contrast to this, Nova Scotia compensates the entirety of virtual services at the same rate of in-person services, and Alberta, Manitoba, New Brunswick, and Quebec have kept codes in place that designate nearly all virtual codes as being equal in value to in-person billing codes.

Discussion

Billing codes can highlight certain aspects about each province's and territory's vision for where virtual care fits into the health care system. The recent change for Ontario's codes

communicates that the priority for physicians should be to maintain an in-person relationship with their patients when they can, but allow for virtual services to be used if necessary. They also prevent abuse of the codes and mitigate unnecessary use of virtual services. Additionally, the switch from temporary billing codes that were introduced at the beginning of the COVID-19 pandemic, to the roll-out of these permanent codes, shows the acknowledgement of the new landscape that health care has found itself in that firmly includes virtual care options.

Nova Scotia, Alberta, Manitoba, New Brunswick, and Quebec's decision to designate all or most virtual codes as being equal in value to in-person billing codes provides the benefit of encouraging physicians to equally prioritize patients who would not have equitable access to attending an in-person appointment. New Brunswick makes specific note of including virtual walk-in clinic visits in a code that is also equal in value to the in-person fee. This allows unattached patients, or patients in immediate need of attention the same access to care as those with an established family doctor and could help keep unnecessary emergency department (ED) visits low.

Recommendations

1. Continue to monitor the changes within provinces and territories. Interesting differences may emerge in the utilization of virtual care based on the approach that is taken to billing for different modalities and services.

Conclusion

Each province took different approaches to the challenges that the ever-changing landscape of virtual care presents. Some have created codes that are very specific to certain situations and specialties, while others took a much broader approach. The value placed on virtual care, and the perception of the quality of care that can be provided over the different virtual modalities, was reflected in the decisions made in how to appropriately bill for that time. Some provinces/territories bill for services provided over virtual care at the exact same rate as in-person services, while others created a tiered system of billing based on in-person, video, or phone visits. These decisions reflect the diversity of populations within each province and territory and will each have varying impacts on their different communities. Individuals without access to technology, bandwidth, in-person services, or a general practitioner will bear the brunt of these decisions. Tracking the changes in these codes allows for a comparison of which approaches have been successful, and which have capacity for change. This work could allow for shared learnings across the country that, in combination with case studies and contextualized research, could provide a more tailored approach to implementing these codes based on lessons learned from other regions. These codes will influence the behaviour of physicians and how they deliver health care services. A better understanding of the impact of various virtual care approaches on the quality of care that patients receive will be crucial in the upcoming year. Tracking these codes will help to tell an important piece of the story of how Canadians across the country are experiencing the health care system.

Virtual Care Dashboard

Background

Virtual care is now an established component of ambulatory care, but its usage will continue to shift in response to changes in billing codes (as noted above) or future pandemics. We have developed a monitoring tool to visualize the utilization of virtual care across Ontario. Through this tool we are able to see the uptake of virtual care among various subgroups prior to and during the COVID-19 pandemic.

Methods

Using the software Tableau Public (version 2021.4) (3), we were able to create a visual monitoring tool to show the utilization of virtual care in Ontario. We used ICES linked and coded population-based health databases containing population demographics and physician services to examine the utilization and impact of virtual care. All Ontario residents with valid OHIP health care coverage who are 18 years of age or older were included. The search comprised of data from January 2018 to June 2022. In addition to the overall utilization of virtual care across Ontario, we stratified the data based on various subgroups and demographics – Age, Sex, Rurality, Income, Region, Patient Use and Provider Use, Disease Group, and Physician Specialty. To help contextualize the data, any surges in COVID-19 cases were noted with a visual mark labeled "Xth Wave" on each graph, where X refers to the chronological order of surges. Since first creating the visualizations on Tableau, the dashboard has been updated three times at six-month intervals. Each update has shown new trends emerging in response to the dynamic nature of the current environment. We aim to

continue to update the data every six months. The most recent update was uploaded on December 29, 2022, and shows data up until June 20, 2022.

Results

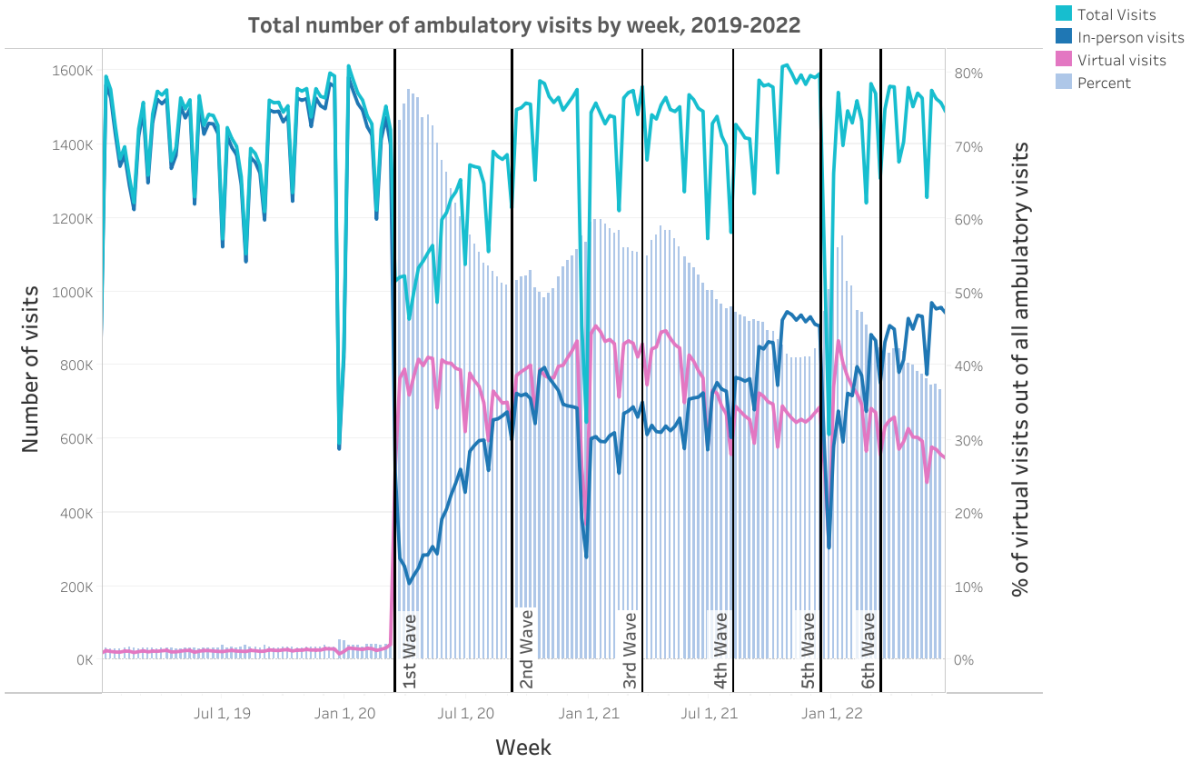

Figure 1. Total number of ambulatory visits, 2019-2022, by modality.

During the first wave of the pandemic, total ambulatory care volumes (in-person + virtual) reduced by 22%, in-person visits reduced by 75%, and 69% of ambulatory care occurred virtually.

As COVID-19 cases decreased during the summer recovery period, some in-person care returned, but 53.8% of all care still occurred virtually.

Total ambulatory care quickly recovered and is back at levels previously seen pre-pandemic. By the fourth wave, in-person visits surpassed virtual visits, but virtual visits continue to make up a significant percent of all visits.

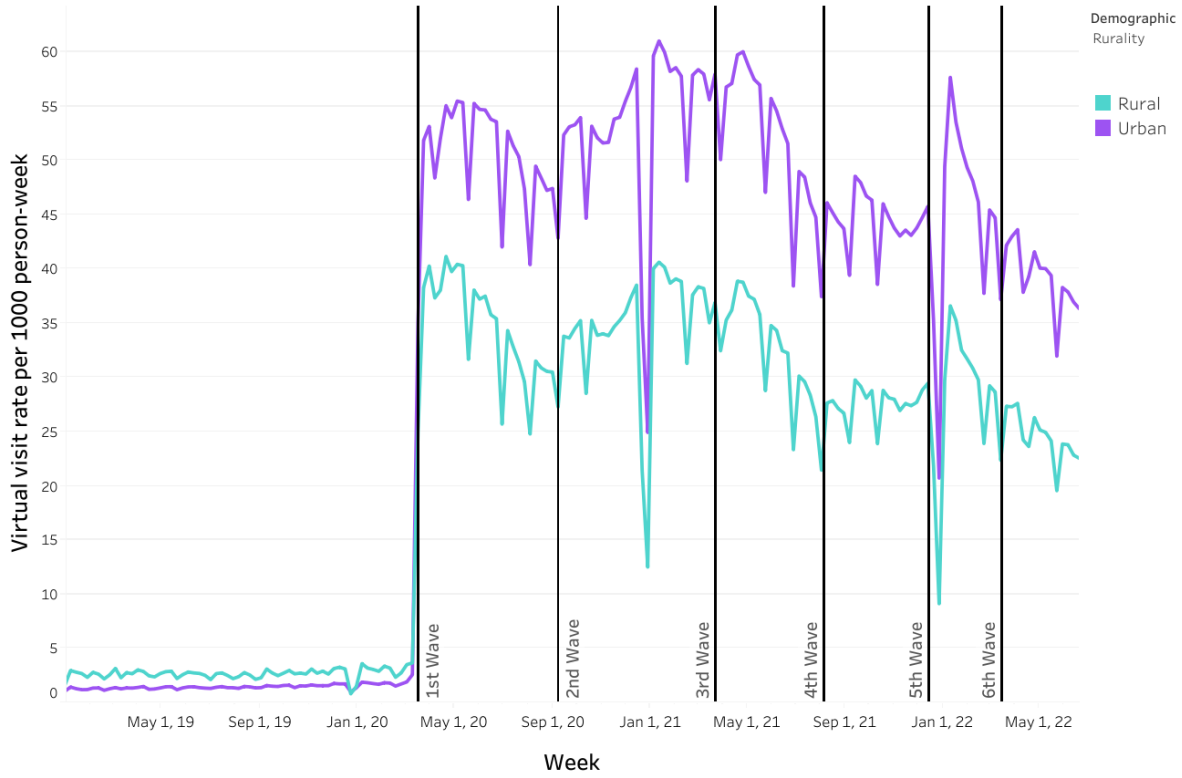

Figure 2. Weekly virtual visit rate by rurality.

Overall, during the COVID-19 pandemic the weekly rate of virtual visits increased in both urban and rural regions. In the pre-pandemic period, the weekly rate of virtual visits was slightly higher among rural patients when compared to urban patients. During the pandemic, the weekly rate of use increased in both groups, in particular among patients living in urban settings.

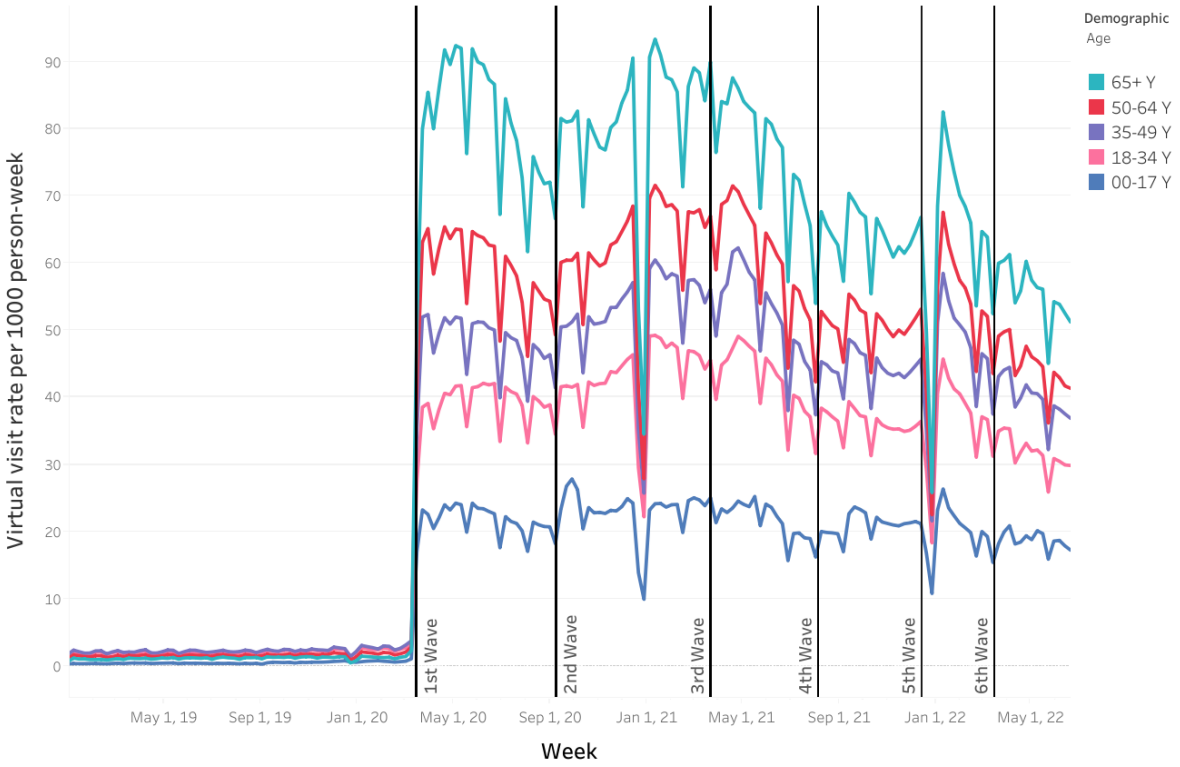

Figure 3. Weekly virtual visit rate by age.

The rate of virtual visits increased during the COVID-19 pandemic across all age groups. In the pre-pandemic period, the three age groups that had the highest rate of virtual care visits were 18-34, 35-49, and 50-64.

During all waves, the age groups with the highest rate were those over 65 years old, 50-64, and 35-49. There was a general increase in virtual care use with increasing age.

The average weekly rate of virtual visits per 1000 was lowest in the 0-17 years age group. Older adults (65+ years old) had the highest rates of virtual care visits with about 72-82 weekly visits per 1000 residents across various stages of the pandemic.

The dashboard can be found here:

https://cdhe.wchwihv.ca/work.html

Discussion

Virtual care has become widespread across the province of Ontario for many demographic and clinical subpopulations, and it is now a mainstay in Ontario's health care system. There was a rapid uptake in virtual care at the beginning of the pandemic, as well as a rapid decrease in in-person visits. Over time, there was a gradual return to in-person services, but a high proportion of visits continued to be delivered virtually. The exploration of various subgroups offers a unique look into how this shift has impacted different populations in different ways across Ontario. The proportions of in-person to virtual care will continue to shift in response to rates of infectious disease, changes in billing, and changes in public or provider preference. A dashboard can be used to track the impact of virtual care use on equitable access to health care, as well as the gaps that it appears to be filling for those who use virtual care frequently.

Recommendations

1. Continue to monitor the data. The trends in virtual care use have not yet settled, as policies continue to change and patients and providers alike experiment with integrating virtual care into their routine. Further monitoring of these trends is needed, so that we gain a better understanding of how various groups are being impacted by these changes.
2. Replicate this work in other provinces and territories to provide insights into the health care landscape in each jurisdiction, which could inform policy decisions, as well as provide the opportunity to compare across different health care systems in Canada. This

will require databases to be set up in each region, if not available already, to collect information on virtual care use.

Conclusion

With 786 views to date, this work has provided powerful insights into the utilization of virtual care compared to in-person care through various cross-sections. Replicating this work in other provinces and territories would allow for the presentation of complex and varied experiences with virtual care to be presented to and understood by a larger audience. The ease and speed with which these visualizations can be shared and understood allows for policymakers to have valuable evidence to inform their decisions.

Ontario Emergency Department Analysis

Despite concerns that access to virtual care may lead to a rise in ED admissions or a greater use of outpatient services prior to ED admissions (in the form of patients having both virtual and in-person visits), the net amount of ED admissions, and outpatient care prior to admission, remained the same over a relatively stable period of the COVID-19 pandemic compared to a similar pre-pandemic period. Virtual care seems to be able to appropriately triage patients to the ED and may even prove beneficial for diverting patients away from the ED when an ED visit is not appropriate. There is also no evidence to support a sharp increase in use of virtual visits prior to ED visits. Access to virtual care, however, is poor in the more rural and Northern regions, therefore improving virtual care access for these populations will be an important next step.

A full report can be found here:

https://cdhe.wchwihv.ca/work.html

CIHI Reports

The Canadian Institute for Health Information (CIHI) and the Canadian Network for Digital Health Evaluation (CNDHE) have been in partnership throughout the research and execution of this project. While we explored virtual care utilization data in Ontario, the CNDHE provided support for CIHI to replicate this work in five provinces, i.e., Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. Their study produced results that were consistent with the findings from our Ontario study. However, some key differences were reported, likely due to the different approaches that each province has taken to virtual care billing and access. The funding provided by Health Canada allowed for our teams to meet monthly to brainstorm ideas and share findings. This partnership enriched the work of both teams and allowed for more efficient analysis and better results. Sharing and discussing our findings have highlighted the potential opportunities for conducting formal cross-provincial comparisons in future work.

In adjunct to this work, CIHI has released a report exploring the use of physician services among patients with a diagnosis of anxiety or depression between April 2019 and March 2021, and the impact of the rapid implementation of virtual care in this population. This report describes the patient population (i.e., demographic characteristics), the number of services used, and corresponding physician payments for mental health services with a family physician, pediatrician, or psychiatrist. Data from five provinces (Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia) is included.

In this report, the technique is described for developing and refining a plan, and extracting initial learnings in Ontario, followed by the replication and expansion of this work to

additional provinces and territories. This has yielded valuable information thus far, and hence future projects may consider leveraging a similar formula for collaboration in order to achieve shared learnings.

The reports from CIHI can be found below:

- Virtual care: Impact of COVID-19 on patients receiving physician services
- Virtual care: Impact of COVID-19 on physician practice patterns
- Virtual care: Impact of COVID-19 on physician mental health services

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