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US Physician Perceptions and Decision-Making Factors in Prescribing COVID-19 Antivirals: Qualitative Research Findings

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Introduction

- Despite the availability of effective antivirals, patients with COVID-19 at high risk of progression to severe COVID-19 remain undertreated, leading to avoidable patient- and system-level burden[1].
- Limited understanding exists around why healthcare providers (HCPs) underutilize antivirals and what factors influence their prescribing decisions, highlighting the need to explore the key drivers of antiviral treatment selection for high-risk patients with mild-to-moderate COVID-19.

Objective

This study sought to:

- Characterize HCPs' experience with COVID-19 antiviral treatment.
- Identify key drivers and barriers to prescribing antivirals in the United States (US), which will inform a future quantitative preference survey on factors impacting COVID-19 antiviral utilization.

Methods

Study Design

- One-on-one in-depth virtual interviews were conducted from **November 2024 to January 2025** with US HCPs.
- The **Theoretical Domains Framework (TDF)** was used to structure the content of the discussion guide.
- The TDF provides a comprehensive and systematic approach to understanding the cognitive, social, and environmental factors influencing behaviors[2]. Key TDF domains included knowledge, beliefs about consequences, social influences, and environmental context.
- Interviews, which were 45 minutes in duration, were transcribed and thematically analyzed using MAXQDA® software.

Eligibility Criteria

- ≥25 years old, with a current, active unrestricted license to practice medicine in the US and >2 years of experience treating patients in a healthcare setting (excluding any supervised experience during residency).
- Primary medical specialty of family medicine, general medicine, primary care, emergency medicine, or internal medicine, and confirmed spending ≥51% of their work time in direct patient care.
- Hold a degree of Doctor of Medicine or Doctor of Osteopathic Medicine.

References

1. Prevent Progression to Severe COVID-19 — Veterans Health Administration, March–September 2022." MMWR Morb Mortal Wkly Rep 73: 57-61. doi:http://dx.doi.org/10.15585/mmwr.mm7303a2.
2. Atkins, L., Francis, J., Islam, R., O'Connor, D., & et al. (2017). A guide to using the Theoretical Domains Framework of behaviour change to investigate implementation problems. Implementation science, 12, 1-8.

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Results

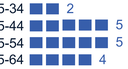
Study population

16 US physicians

Sample characteristics

- 6 Primary care (PC)
- 5 Urgent care (UC)
- 5 Emergency medicine (ER)

Age

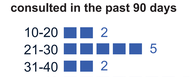


- 25-34: 2
- 35-44: 5
- 45-54: 5
- 55-64: 4

Primary Specialty

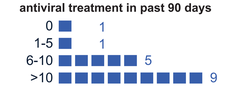
- Internal: 6
- Family: 7
- Emergency: 3

# of patients with COVID-19 treated consulted in the past 90 days



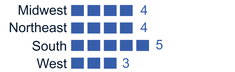
- 10-20: 2
- 21-30: 5
- 31-40: 2
- >40: 7

# of patients with COVID-19 prescribed antiviral treatment in past 90 days



- 0: 1
- 1-5: 1
- 6-10: 5
- >10: 9

Geographic Region



- Midwest: 4
- Northeast: 4
- South: 5
- West: 3

Primary drivers and barriers to antiviral use (Figure 1)

Key Drivers: Prevent hospitalization or death in high-risk patients

Key Barriers: Uncertainty about benefit in vaccinated or mildly symptomatic patients, and reticence in modifying existing medications to avoid drug-drug interactions.

Patient Preference: Physicians more likely to prescribe when patients request antivirals, less likely when patients are hesitant.

DRIVERS

n=16

G — **Prioritize preventing hospitalization and worsening of illness, including decreasing symptom severity/duration**

Keep them from dying. Keep them out of the hospital or ER. Keep them from coming back to my office. Help them feel better, faster in the most cost-effective, least side-effects way. (PC03)

SI — **Antiviral inquiries or requests from patients**

There are definitely patients who come in who are very motivated to start an antiviral. If they're looking for something, then I won't withhold it if they're strongly in favor. (ER03)

n=14

K — **Antivirals effectiveness for high-risk patients**

Any high-risk, yes, I recommend. (UC04)

BAC — **Antivirals are effective in preventing hospitalization and/or death in high-risk patients**

Elderly people definitely pop up [as] moderate or high-risk just based on their age…70 years [and] up. (ER01)

Antivirals can reduce symptom duration and/or severity

If you get it pretty early on, I think there's probably more like a 50% [reduction in duration]... (PC05)

n=11

K — **CDC/FDA guidance and antiviral use criteria**

I would say, yes, CDC is my favourite. Usually, all of my colleagues, when we have arguments about whatever it is, we go by CDC. That is number one. (UC04)

n=8

I — **Intention to prescribe for a high-risk patient within the treatment window**

For the most part, I like to offer it to patients that are symptomatic, have COVID-19, are within that five-day window and are stable enough to go home. (ER04)

E — **Feel empowered that there are effective COVID-19 treatments**

Going back to the pandemic, when we did not know anything, we didn't have anything. We were bare-handed, just knuckle fighting an enemy that we knew nothing of, but ever since antivirals came out, we kind of got that defence, that weapon to fight the virus. (PC02)

n=6

ECR — **Availability of oral treatments**

Having the oral drug is much easier to set up. (ER02)

n=5

ECR — **Availability of support tools (DDI checkers, electronic medical records access)**

The majority of patients who really need the medication are going to be elderly who are on multiple medications that have a drug-drug interaction; there are tools that help you determine that. (UC03)

n=4

S — **Experience with DDI tools (e.g., Liverpool checker)**

I'm always willing to prescribe if I can help them mitigate the interactions. I use the interaction checker from University of Liverpool. (UC02)

n=3

ECR — **Antiviral accessibility at local pharmacies**

One factor that influences my decision is that Paxlovid seems to be more readily available at certain pharmacies. (UC01)

n=1

BAC — **Antivirals may get patients back to work sooner**

Secondary to [respiratory symptoms] is keeping them employed and being able to get back to work as soon as possible from when their symptoms started. (PC05)

BARRIERS

n=16

SI — **Patient hesitancy or refusal to take antivirals**

I'll have a discussion with them about their medications before and whether or not they really want to take it depending on that discussion (ER04)

n=9

BAC — **Concern over potential side effects**

If it prevents progression, then there's probably value to it. That is cornered around the potential for side effects. So that is kind of discussed in the conversation, the potential for side effects versus the potential of benefit. (UC03)

I — **Reluctance in managing medication interruption or dosing adjustments and monitoring as applicable**

If there's a potential for complications including the drug-drug interaction, that definitely skews me away from prescribing it (ER01)

n=6

ECR — **High out-of-pocket cost for patients, depending on insurance coverage**

How much it's going to cost our patients to obtain it, and is that cost justifiable? (ER01)

n=5

BAC — **Have less clarity around the benefit of antivirals in vaccinated or high-risk patients with mild symptoms**

If a patient comes in and they're 72 and they have COPD and they have risk factors but their symptoms are very mild. I have a hard time telling a patient that there's likely to be value to them taking this medication. (UC03)

n=3

SI — **Geographic area of high patient hesitancy around COVID-19 treatment (e.g., the Midwest or South)**

There's a lot of hesitancy here. (PC02)

n=2

SPRI — **Physicians may be reluctant to modify regimens of other medication not initiated under their care**

Usually I will make sure that they're not on Plavix, clopidogrel, or Eliquis, apixaban because those two for me are – I just won't prescribe an antiviral with those… because you're either supposed to switch them to a different anti-platelet or lower the dose of Eliquis. Those are things that we're not supposed to do in the urgent care world. That's one of our policies, is we don't adjust chronic medications (UC02)

n=1

ECR — **Time pressure and workflow constraints, particularly in ER/UC setting**

It is a time-consuming procedure to go through each of the patient's medications because a lot of times the patients that are high risk are older and are on a lot of the medications that interact with the current antiviral. (UC02)

TDF Domains: G Goals · SI Social Influences · K Knowledge · BAC Belief about Consequences · I Intentions · E Emotions · ECR Environmental Context & Resources · S Skills · SPRI Social/Professional Role and Identity

Conclusions

- Despite the availability of effective antivirals, **many physicians are empowered by having the option to prescribe COVID-19 antivirals**, viewing them as effective in reducing hospitalization risk for high-risk patients. At the same time, physicians may question the risk of hospitalization of COVID-19 patients with only mild symptoms.
- **Prescribing decisions are influenced by patient characteristics,** such as age, comorbidities, symptom severity, and potential for drug-drug interactions, among others. **Patient preferences can serve as both a driver and a barrier to prescribing.**
- **Additional education on risk factors for developing severe COVID-19** may help address prescribing hesitation in cases where patients at high risk for severe disease present with mild symptoms or due to concerns about potential side effects for these patients.
- **Further research is needed** to quantify how patient and treatment characteristics, as well as patient and HCP preferences, shape antiviral prescribing decisions.

Notable distinctions among specialties

- At the time of the interviews, 83%, 60%, and 20% of PC, UC and ER physicians (respectively) reported prescribing an antiviral for 40% or more of their patients with COVID-19 in the past month.
- ER physicians often expressed lower perceived effectiveness of antivirals for COVID-19 compared with PC and UC physicians.
- UC physicians, in particular, described being cautious about changing patients' existing prescriptions.
- This may be related to the limited amount of time they have with their patients and discomfort modifying prescriptions written by another HCP.

Strengths and limitations

- This study contributes to the limited existing knowledge of physicians' perspectives on prescribing antivirals for patients with COVID-19 at high risk for progression to severe disease.
- Reliance on self-reported data may introduce potential biases, such as social desirability or recall bias.
- Although the small sample size limits generalizability, the study provides an in-depth understanding of the breadth of factors that may influence prescribing decisions for patients with COVID-19 at high risk for progression to severe disease.

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