Behavioural Factors Influencing Healthcare Practitioners' and Patients' Use of Antivirals to Prevent and Treat Respiratory Viruses Associated with Severe Disease: A Scoping Review

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Questions

- *Primary question*: What behavioural factors influence the prescribing by healthcare practitioners and use by patients of antivirals for the prevention and treatment of respiratory viruses associated with severe disease?
- *Secondary question*: How do behavioural factors influencing antiviral prescription and patient use vary across different types of healthcare practitioner (e.g., physicians vs pharmacists)?

Flow of Included Studies

A total of 1,819 articles were initially retrieved and after removing duplicates, 1,471 articles were title and abstract screened by a minimum of two reviewers independently, with 158 articles (one additional article was obtained from a related review on antiviral stockpiling and distribution) being full-text appraised (appendix: Figure 1).

Forty-seven (47) articles met all inclusion criteria (Appendix, Table S1). Twenty-three of the articles were cross sectional surveys, 13 studies were cohort studies, nine studies used qualitative or mixed methods, and two articles were randomised controlled trials (appendix: Table S4). Thirty-three of the articles reported from the point of view of prescribers, and 14 of the articles reported from the point of view of users.

The search strategy used for each of the five databases is available (appendix: Table S2). In addition, the list of studies excluded during full text screening is available in the appendix (appendix: Table S3).

Box 1: Our approach

We conducted a scoping review. The protocol for this review is available on OSF: https://osf.io/a83x7/overview?view_only=b517e4510281421da7309849e173ebe8

Outcome measures: Behavioural factors influencing healthcare practitioners' prescribing of and patients' use of antivirals.

Databases Searched: Web of Science, CINAHL, PsychINFO, Medline, and Embase.

Timeframe: 1988-March 5th, 2026.

Eligibility Criteria (Appendix, *Table S1)*: *Population*: All countries; *Setting:* Pandemic and non-pandemic community settings; and *Study Designs:* Cohort studies; Case-control studies; Observational studies; Quasi-experimental studies; Experimental studies; Randomized control trials; Case report; Case series; Qualitative studies; Mixed methods; Modelling studies.

Data extraction: We extracted barriers and facilitators from each study using the *Theoretical Domains Framework (TDF)*. One reviewer extracted data, which was validated by an independent reviewer.

Critical appraisal: We assessed risk of bias using the MMAT (Hong et al., 2018; Appendix, *Table S5*).

Summaries: We summarise the evidence by presenting 10 domains of behavioural barriers and

Executive Summary

Background

Influenza continues to pose a substantial threat to Canada. In addition to vaccination, antiviral medications are a key component of influenza prevention and control strategies. Canadian and international guidelines recommend the use of antiviral medication to prevent and treat influenza, particularly in high-risk patients and those with vaccine contraindications. Despite clinical recommendations, behavioural and system-level factors may delay prescribing, reduce patient uptake and adherence, and contribute to inequitable access among populations most likely to benefit. Behavioural barriers related to the prescribing and patient use of antivirals can undermine the potential public health impact of antivirals if they lead to suboptimal antiviral use, or inequitable access among populations most likely to benefit from them. This scoping review synthesises behavioural factors, i.e., barriers and facilitators, affecting antiviral prescribing by healthcare practitioners and antiviral use among patients.

Implications for Decision-Makers

The following actions are supported by the qualitative synthesis of the identified behavioural factors (see Tables 1.1 and 1.2 and Appendix Table S6).

- Provide clear and consistent provincial and federal guidance on antiviral prescription, particularly for populations where uncertainty remains (e.g., pregnant women). Guidance should also focus on indicating which patients are most likely to benefit from antivirals and discouraging the prescription of antivirals to low-risk patient populations.
- Use accessible evidence summaries and knowledge translation resources to help address the uncertainty regarding the risk-benefit profile of antivirals identified among healthcare professionals in this review.
- Expand timely access to appropriate diagnostic testing, particularly rapid influenza diagnostic tests, where test results can support prompt prescribing decisions.
- Provide additional support to prescribers with limited experience of antiviral prescribing, including peer support from more experienced clinicians.
- Enable authorised prescribers, including pharmacists, to access the patient's electronic health information required to assess eligibility, contraindications, and drug interactions promptly.
- Support pharmacist-led prescribing programs. These programs should include streamlined administrative processes, adequate remuneration for all tasks related to prescribing antivirals, and improved collaborative systems with multidisciplinary teams, including physicians. These improvements could potentially build on successfully implemented pre-existing pharmaceutical medication prescription processes (e.g., antibiotic prescribing).
- Provide consistently updated education for the public on antiviral effectiveness, eligibility, potential adverse effects, and common misconceptions. Education could also address the potential severity of influenza and other viral infections, particularly among populations most at risk of severe illness.
- Improve access to publicly funded antivirals could also help reduce barriers to antiviral use for populations most at risk.
- Use telephone, video, and other alternative consultation modalities to improve timely access, while incorporating safeguards to assess patient understanding and support clear treatment instructions.

Overview of the Facilitators and Barriers to Antiviral Prescribing and Use

Behavioural Facilitators (Table 1 and appendix: Table S6):

- Clear and consistent prescribing guidelines;
- Access to up-to-date information about the effectiveness of antivirals and educational resources to support prescribing;
- Rapid diagnostic testing and up-to-date influenza surveillance data;
- Pharmacists reported feeling self-confident about prescribing antivirals when they were supported by a multidisciplinary team that included physicians available for consultation; and
- Virtual consultation settings were perceived as improving the timely access to antivirals for at-risk patients.

Behavioural Barriers (Table 1 and appendix: Table S6):

- There appears to be inconsistent or inadequate guidelines for pregnant women;
- Administrative barriers, including limited access to electronic health records;
- There are misconceptions about adverse effects of antivirals among potential users and perceptions that influenza is not sufficiently serious to necessitate the use of antivirals; and
- Conflicting advice from different healthcare professionals (e.g., physicians vs pharmacists) that may lead to reduced antiviral use.

Knowledge Gaps

These recommendations need to be contextualised within the following key gaps within the literature:

- The evidence did not permit a robust comparison across professional groups as few studies directly compared the type of healthcare practitioners (e.g., nurses, pharmacists, physicians), and the populations, settings, viruses, and outcomes were too heterogeneous for meaningful comparisons across professions;
- Most studies were conducted in the United States (24 of 47; 51%), while only three were conducted in Canada, which potentially limits transferability to Canada's publicly funded healthcare systems;
- The evidence disproportionately represented prescribers rather than patients or potential patients, particularly in the COVID-19 literature; and
- The TDF (Theoretical Domains Framework) domains of optimism, reinforcement, intentions, and behavioural regulation were not represented. Their absence should not be interpreted as evidence that these domains are unimportant, as they may simply not have been explicitly investigated or reported.

Table 1.1

Distribution of coded factors that influence prescribing across TDF domains by included studies

Cell values indicate the number of distinct behavioural findings coded to each TDF domain within each study. Green-shaded cells indicate at least one coded finding. The 'Total studies' row reports the number of contributing studies, while 'Total times' reports the number of coded findings (barriers, facilitators, or a mix of both).

	TDF domains									
First author, publication year	**Knowledge**	**Skills**	**Social/ professional role and identity**	**Beliefs about capabilities**	**Beliefs about consequences**	**Goals**	**Memory, attention and decision processes**	**Environmental context and resources**	**Social influences**	**Emotions**
Ahankari, 2019	0	0	0	0	1	0	1	1	0	0
Almahasis, 2025	2	0	1	0	0	0	0	5	0	0
Barthe, 2011	0	0	0	0	3	0	0	1	2	0
Bassett, 2025	1	0	1	0	4	0	0	0	4	0
Biggerstaff, 2014	0	0	0	1	0	0	0	0	0	0
Bonner, 2003	1	0	0	0	0	0	0	0	0	0
Bromley-Dulfano, 2025	0	0	0	0	0	0	0	3	0	0
Dahri, 2025	2	0	1	0	0	0	0	5	1	0
Dharan, 2010	3	0	0	0	2	0	0	2	0	0
Dolan, 2012	1	0	1	0	1	0	0	1	2	0
El Feghaly, 2021	1	0	0	0	0	0	0	0	0	0
Gaillat, 2005	1	0	0	0	2	0	0	2	1	0
Gauld, 2011	1	0	0	0	1	0	1	3	3	0
Hart, 2024	0	0	0	0	0	0	0	1	1	0
Komiya, 2025	1	0	0	0	2	0	0	0	0	0
Kunin, 2015	1	0	1	0	0	0	0	1	0	0
Linder, 2009	1	0	0	0	0	0	0	0	0	0
Linder, 2006	1	0	0	0	0	0	0	0	0	0

Mersereau, 2012	3	1	0	0	1	0	1	1	1	0
Moller, 2023	1	0	0	0	0	0	0	0	1	0
Murtough, 2015	0	0	0	0	1	0	0	0	0	0
Nakajima, 2021	1	0	0	0	0	0	0	0	0	0
Papastergiou, 2016	0	0	0	0	0	0	0	1	0	0
Park, 2019	2	0	0	0	0	0	0	0	0	0
Peters, 2013	1	0	0	0	0	0	0	0	0	0
Rothberg, 2006	1	0	0	0	4	0	0	0	0	0
Samim, 2022	3	0	0	0	1	0	0	0	2	0
Sansom, 2025	1	1	1	2	0	0	0	3	0	0
Shaw, 2016	2	0	0	1	3	0	0	1	0	0
Suryaprasad, 2014	1	0	0	0	0	0	0	0	0	0
Theocharis, 2010	2	0	0	0	0	0	0	0	0	0
Wang, 2023	0	0	0	0	0	0	0	2	1	0
Williams, 2014	1	0	0	0	0	0	0	0	0	0
Total number of studies	**25**	**2**	**6**	**3**	**13**	**0**	**3**	**16**	**11**	**0**
Total number of factors	**36**	**2**	**6**	**4**	**26**	**0**	**3**	**33**	**19**	**0**

Note: The domains are based on the Theoretical Domains Framework (Atkins et al., 2017).

Table 1.2

Distribution of coded factors that influence patient use or adherence to antiviral across TDF domains by included studies

Cell values indicate the number of distinct behavioural findings coded to each TDF domain within each study. Green-shaded cells indicate at least one coded finding. The 'Total studies' row reports the number of contributing studies, while 'Total times' reports the number of coded findings (barriers, facilitators or a mix of both).

	TDF domains									
First author, publication year	**Knowledge**	**Skills**	**Social/ professional role and identity**	**Beliefs about capabilities**	**Beliefs about consequences**	**Goals**	**Memory, attention and decision processes**	**Environmental context and resources**	**Social influences**	**Emotions**
D'Antoni, 2019	0	0	0	1	1	0	0	0	1	1
Gaglia, 2007	0	0	0	0	1	0	0	1	0	0
Helfenberger, 2010	0	0	0	0	3	0	0	0	1	0
Lonsdale, 2011	0	0	0	0	1	0	1	0	0	0
Lynch, 2012	2	0	0	0	3	0	0	0	0	0
Masuet-Aumatell, 2013	1	0	0	0	2	1	0	0	0	0
Okada, 2021	0	0	0	0	2	0	2	0	0	0
Quinn, 2009	1	0	0	0	1	0	0	0	2	2
Quinn, 2015	1	0	0	0	2	0	0	0	2	1
Soh, 2024	1	0	0	1	4	0	0	1	2	0
SteelFisher, 2018	0	0	0	0	3	0	0	1	0	0
SteelFisher, 2024	3	0	0	0	2	0	0	0	0	0
Upjohn, 2012	1	0	0	0	1	0	0	0	1	0
van Velzen, 2011	0	1	0	0	2	0	0	0	0	0

Total number of studies	**7**	**1**	**0**	**2**	**14**	**1**	**2**	**3**	**6**	**3**
Total number of factors	**10**	**1**	**0**	**2**	**28**	**1**	**3**	**3**	**9**	**4**

Note: The domains are based on the Theoretical Domains Framework (Atkins et al., 2017).

Detailed Findings for Each Represented TDF domain

The following findings synthesise behavioural barriers and facilitators that may influence antiviral prescribing by healthcare practitioners and antiviral use among patients. The review answers the primary question by mapping these factors to TDF domains. The secondary question could not be answered because profession-specific evidence was heterogeneous and direct comparisons were rare; therefore, professional groups are identified as precisely as the source studies permit.

Within each TDF domain, findings are presented as facilitators, barriers, or mixed/context-dependent factors of antiviral use and/or prescribing behaviours.

1. Knowledge: This domain corresponds to an individual's awareness of or scientific rationale for the prescription and use of antivirals.

1.1. Testing

1.1.1. General (facilitator). Across influenza studies and several outpatient settings, physicians and other authorised prescribers who ordered diagnostic testing and knew the results were positive were more likely to prescribe antivirals (Bonner et al., 2003; Dharan et al., 2010; Linder et al., 2009; Theocharis et al., 2010).

1.1.2. Rapid testing (facilitator)

Rapid influenza diagnostic tests (RIDTs) were consistently associated with prescribing decisions. Williams et al. (2014) found that approximately two-thirds of outpatient physicians prescribed antivirals after reviewing RIDT results. RIDT results were also strongly associated with prescribing among emergency-department physicians in Japan and South Korea and among physicians providing house-call services in Greece (Nakajima et al., 2021; Park et al., 2019; Theocharis et al., 2010). In El Feghaly et al. (2021), physicians and advanced practice registered nurses initially intended to prescribe antivirals in 80% of encounters, and after using a more recent method of rapid testing (i.e., rapid molecular assays testing), the clinicians changed their prescribing decisions in 52% of cases, which helped avoid unnecessarily prescribing antivirals to 40% of patients.

1.1.3. Influenza surveillance data (facilitator)

Testing also appeared to support antiviral prescribing indirectly by improving the accuracy and timeliness of epidemiological surveillance. When deciding whether to prescribe antivirals, Dharan et al. (2010) found that local influenza surveillance data was the most commonly reported factor influencing physicians' decisions to prescribe antiviral medications.

1.2. Influenza knowledge (mixed)

The limited knowledge of influenza, its symptoms, and its severity among the public influenced prescribing practices. Specifically, Shaw et al. (2016) found that pharmacists reported that antivirals were typically supplied only when specifically requested rather than routinely recommended to eligible patients, partly because pharmacists perceived individuals as being incapable of differentiating between common cold symptoms and those of influenza. This uncertainty led some pharmacists to prescribe treatments for symptoms rather than prescribing antivirals. In contrast, potential antiviral users with a greater perception of knowledge around

influenza prevention had a greater intention to comply with antiviral drugs as a preventative measure (Masuet-Aumatell et al., 2013).

1.3. Guidelines

1.3.1. Clear and consistent (facilitator)
According to Almahasis et al. (2025), consistent recommendations regarding patient eligibility for antivirals were provided from a variety of organisations (e.g., pharmaceutical society, state, and federal guidelines). This consistency facilitated the prescribing of antivirals for pharmacists. Similarly, in an evaluation of a pharmacist-led collaboration program for prescribing, access to clearly defined eligibility criteria and standardised guidelines was considered to have optimised patient access to antivirals during the COVID pandemic (Sansom et al., 2025).

1.3.2. Lack of specificity for some populations (barrier)
Among prenatal care providers, Mersereau et al. (2012) found insufficiently specific guidance on prescribing antivirals to pregnant people exposed to influenza. This finding is interpreted alongside the limited pregnancy-specific safety information described in Section 1.4.3.

1.3.3. Over recommendation (barrier)
Physicians described not wanting to prescribe antivirals but having to do so because of current guideline recommendations that were not specific to their patients' risk factors. Bassett et al. (2025) therefore identified a need for guidelines that recommended specifically against the prescribing of antivirals when treating patients identified as low-risk populations.

1.4. Information availability

1.4.1. Provision of antiviral information (facilitator)
Consulting published evidence on antiviral efficacy before prescribing was reported by 43% of infectious disease physicians surveyed by Dharan et al. (2010). General practitioners who had received recent information about antivirals were more likely to prescribe them (Gaillat et al., 2005). In a pre-post study, an educational film using clinical scenarios was associated with more appropriate antiviral prescribing among physicians (Komiya et al., 2025).

Quinn et al. (2009) found that users (patients) of antivirals were more likely to accept a prescription (57.2% of participants) if it was accompanied by an official fact sheet compared to without (15% of participants).

1.4.2. Lack of antiviral information (barrier)
Upjohn et al. (2012) found that 40% of healthcare workers offered antivirals preventatively indicated that they had received insufficient information about antivirals. During COVID-19, community pharmacists described frustration when patients learned about antivirals through news media before information had reached healthcare practitioners (Dahri et al., 2025).

Steelfisher et al. (2024) found that 85% of potential users of antivirals indicated no or low awareness of COVID-19-specific antivirals. Lynch et al. (2012) found some people confused antivirals with antibiotics and vaccines, believing antivirals could only relieve symptoms but not provide clinical benefits. Quinn et al. (2015) found that when potential antiviral users did not feel like they had sufficient information about antivirals, they were less likely to take the medication.

1.4.3. Limited pregnancy safety data (barrier)
A lack of robust safety data on antiviral use during pregnancy contributed to prescribers (pharmacists and prenatal care providers) being hesitant to prescribe antivirals (Dolan et al., 2012; Mersereau et al., 2012).

1.4.4. Restricted access to patient health information (barrier)
In an evaluation of community pharmacies' prescribing practice during COVID-19, pharmacists without direct access to electronic health records were required to contact physicians to obtain clinical information about patients (Almahasis et al., 2025). These additional administrative steps slowed patient screening and, in some cases, resulted in missed prescribing opportunities. In contrast, pharmacists were more efficient in verifying patient eligibility when they had access to electronic health records.

1.5. Prior awareness of antiviral medications

1.5.1 Physician prior awareness of antiviral medications (mixed)
Prior to the COVID-19 pandemic, awareness of influenza antivirals varied across professional groups and settings. Kunin et al. (2015) reported that some primary care physicians were unfamiliar with available antivirals during the H1N1 pandemic, and support staff did not consistently refer eligible patients. In contrast, all community pharmacists studied by Gauld et al. (2011) were aware of oseltamivir and the symptoms indicating its use. The study by Gauld et al. (2011) did not quantify how awareness influenced actual prescribing or use behaviour.

1.5.2 User (patient) prior awareness of antiviral medications (mixed)
Lynch et al. (2012) found that familiarity with antiviral medications was associated with greater acceptance to use antivirals. During the COVID-19 pandemic, SteelFisher et al. (2024) found only around a quarter of the American public were aware of Paxlovid, whereas, more than half of Singaporean participants (users) in a study by Soh et al. (2024) reported being aware of the same antiviral. However, Soh et al, (2024) reported that prior awareness of COVID-19 antivirals was not associated with a greater likelihood of intending to use them.

2. Skills: This domain related to abilities necessary to be able to prescribe or use antivirals.

2.1. Swallowing medication (barrier)
Nearly a third of parents who reported their children had discontinued the use of antivirals prematurely indicated that they had done so because their child had difficulty swallowing the medication (van Velzen et al., 2011).

2.2. Lack of prescribing experience in specific populations (barrier)
Prenatal care providers, including physicians, nurse practitioners, and midwives, indicated that although they were aware of Centers for Disease Control and Prevention guidance on prescribing antivirals during pregnancy, they had little or no experience prescribing antivirals to pregnant people exposed to influenza (Mersereau et al., 2012).

2.3. Communication (barrier)
Healthcare workers involved in a pharmacist-led prescribing programme reported difficulty assessing patient understanding during telephone consultations, particularly among older adults (Sansom et al., 2025). This finding does not negate the potential access benefits of remote

consultation; rather, it indicates that remote models should include communication checks, teach-back, or video consultation when appropriate.

3. Social/professional role and identity: This domain related to behaviours considered appropriate for unique work or roles related to the prescription of antivirals.

3.1. Prescribing aligned with values (facilitator)
Community pharmacists described antiviral prescribing during COVID-19 as consistent with their professional values and as a source of professional fulfilment (Almahasis et al., 2026; Sansom et al., 2025). As prescribing could be integrated into established workflows without substantial organisational change, it was viewed as a natural extension of pharmacy services. Existing patient relationships and prior COVID-19 testing experience reinforced pharmacists' roles as trusted healthcare practitioners (Almahasis et al., 2026).

3.2. Misunderstanding of each other's responsibilities (barrier)
Community pharmacists reported that some physicians were unfamiliar with prescribing forms and left pharmacists to complete administrative responsibilities intended to be shared (Dahri et al., 2025). Primary care physicians in Australia and England also described health-authority approval requirements as limiting clinical autonomy and signalling insufficient trust in professional judgement (Kunin et al., 2015).

3.3. Medicolegal considerations (barrier)
Some clinicians reported prescribing antivirals more frequently than they believed was clinically relevant because they felt legally obligated to follow public health guidance (Bassett et al., 2025). Other clinicians described offering antivirals to all patients, not because of expected clinical benefit but out of fear of medicolegal repercussions or to mitigate potential liability if a patient's condition might deteriorate (Bassett et al., 2025). Conversely, Dolan et al. (2012) reported legal concerns as a barrier for prescribing antivirals to pregnant women.

4. Beliefs about capabilities: This domain concerns healthcare practitioners' and patients' confidence in their ability to prescribe or use antivirals effectively.

4.1. Self-efficacy (facilitator)
Pharmacists participating in an antiviral prescribing programme reported confidence in their ability to provide the service (Sansom et al., 2025). Among potential patients, confidence in being able to take an antiviral for the recommended duration was associated with stronger adherence intentions (D'Antoni et al., 2019). The finding that perceived knowledge of influenza prevention was associated with preventive-use intentions is reported under the Knowledge domain rather than self-efficacy (Masuet-Aumatell et al., 2013).

4.2. Self-advocacy (facilitator)
In a large survey, Biggerstaff et al. (2014) found that patients who were more likely to seek healthcare for influenza-like symptoms, were more likely to be prescribed an antiviral medication. Although most potential patients reported that they would not proactively request antivirals, 38% indicated that they would independently seek antiviral treatment if it was not initially offered by their physician (Soh et al., 2024).

4.3. Gaining confidence through experience (facilitator)
Pharmacists initially expressed uncertainty about prescribing antivirals, particularly when they had limited experience with antivirals or influenza management (Shaw et al., 2016). Confidence increased with prescribing experience, although one pharmacist noted that limited post-treatment feedback from patients made self-assessment difficult.

5. Beliefs about consequences: This domain concerns expected benefits, harms, and other consequences of prescribing or using antivirals.

5.1. Concerns regarding antiviral-related adverse events (barrier)
In several studies, a small percentage (less than 15%) of physicians indicated concerns over adverse events or side effects as reasons for not prescribing antivirals (Dharan et al., 2010; Murtough et al., 2015; Rothberg et al., 2006). However, concern regarding the safety of antivirals was greater when prescribing antivirals for pregnant or breastfeeding women (Lynch et al., 2012; Murtough et al., 2015). Additionally, side effects from adverse drug interactions were also a consideration to prescribing antivirals (Komiya, 2025). Physicians also reported that one of the biggest barriers toward prescribing antivirals was the belief that patients would be concerned about side effects (Bassett et al., 2025).

Among patients and potential patients, concern about adverse events was a commonly reported reason for declining or discontinuing antivirals (Bassett et al., 2025; SteelFisher et al., 2018). SteelFisher et al. (2024) found that 86% of potential patients held at least one misconception about adverse effects, and lower acceptance was associated with greater concern about side effects (Soh et al., 2024). Actual side effects contributed to discontinuation, whereas anticipated side effects appeared particularly important for initial acceptance (Lonsdale et al., 2011; Okada et al., 2021).

5.2. Concerns about resistance (barrier)
Although reported infrequently, one pharmacist indicated a concern for antiviral resistance developing due to the inappropriate prescription of antivirals (Shaw et al., 2016).

5.3. Concerns about experimental labelling (barrier)
When antivirals were characterised as experimental, they were associated with a reduced intention for people to use antivirals (Quinn et al., 2015). However, when no alternative treatments were proposed, the term experimental did not negatively impact peoples' willingness to use antivirals (Quinn et al., 2015).

5.4. Perception of antiviral effectiveness (mixed)
Overall, physicians who perceived antivirals as clinically effective and capable of shortening illness, preventing complications or limiting transmission were more likely to prescribe them (Gaillat et al., 2005; Komiya et al., 2025; Rothberg et al., 2006). Efficacy data from published studies was considered an important factor for deciding to prescribe antivirals for physicians (Bassett et al., 2025). Ahankari et al. (2019) reported that for allopathic practitioners in India, influenza-specific antiviral medications were generally not prescribed because they were perceived to be ineffective, though they did prescribe antibiotics, without knowing the cause of the symptoms. In addition, some pharmacists did have uncertainties regarding the effectiveness of antivirals and were reluctant to recommend them (Gauld et al., 2021; Shaw et al., 2016).

Patients' perceptions of antiviral effectiveness also influenced acceptance and adherence. Among travellers, expecting antivirals to reduce illness duration or prevent influenza was associated with willingness to carry or use them (Helfenberger et al., 2010; Masuet-Aumatell et al., 2013). Potential patients who doubted antiviral effectiveness were less likely to intend to use them (Soh et al., 2024), and approximately one-quarter of respondents in SteelFisher et al. (2018) identified perceived ineffectiveness as a reason for declining treatment. Among parents administering treatment to children, perceived lack of continuing benefit contributed to discontinuation (van Velzen et al., 2011).

5.5. Perceived balance of antiviral risks and benefits (mixed)

Clinicians described considering the balance of benefits against their potential risk as a central aspect of their decision-making process (Bassett et al., 2025). For some physicians, the benefits of antivirals during COVID-19 were insufficient to justify potential adverse events, particularly for otherwise healthy individuals. In regard to pregnant individuals, only 38% agreed that the benefits outweighed the risks (Dolan et al., 2012).

Among business travellers, perceiving antiviral benefits to outweigh associated risks was associated with willingness to use them (Helfenberger et al., 2010). Healthcare workers who used antivirals preventatively were more likely to believe that benefits outweighed risks; nevertheless, more than half of those who did not believe the medication was worth taking still completed the prescribed course (Upjohn et al., 2012).

5.6. Perceived seriousness of the disease (mixed)

Healthcare practitioners (general practitioners and prenatal care providers) were more likely to prescribe antivirals when they perceived a disease as having the potential for severe consequences (Gaillat et al., 2005; Mersereau et al., 2012). Conversely, physicians who viewed influenza as a self-limiting illness were less likely to prescribe antivirals (Rothberg et al., 2006).

Similarly, patients were more likely to adhere to antiviral therapy when they perceived influenza or influenza-like diseases to pose a substantial personal health risk. Indeed, greater perceived susceptibility and an awareness of the risks of influenza or influenza-like illnesses predicted stronger intentions to use antivirals (D'Antoni et al., 2019; Masuet-Aumatell et al., 2013; Soh et al., 2024; Quinn et al., 2009). Patients also reported being more willing to use antivirals during pandemics than for seasonal influenza, which was viewed as an illness that can be managed without medication (Gaglia et al., 2021; Lynch et al., 2012; Quinn et al., 2015; SteelFisher et al., 2018).

6. Goals: This domain reflected the desired outcome that guided antiviral use.

6.1. Carrying antiviral preventively (facilitator)

Travelers who were more likely to consider carrying an antiviral while travelling were more likely to intend to adhere to antiviral drugs preventively (Masuet-Aumatell et al., 2013).

7. Memory, attention and decision-making: This domain reflected the ability to retain information and the processes involved in making decisions related to prescribing or using antivirals.

7.1. Decision-making processes (facilitator)

According to Ahankari et al. (2019), practitioners (physicians and prenatal care providers) used a combination of intuitive and analytical approaches when making antiviral decisions. Ahankari et al. (2019) reported that primary care physicians continually reassessed symptoms and updated diagnoses, while prenatal care providers in Mersereau et al. (2012) relied on both clinical judgement and national guidance.

7.2. Salient memory (facilitator)

Gauld et al. (2011) identified how long it had been since a previous health threat as a salient event that could increase pharmacists' readiness to supply antivirals during a subsequent threat.

7.3. Forgetting to take medication (barrier)

Among patients, who were healthcare professionals, who had initiated antiviral treatment, forgetting doses was reported as a reason for non-adherence or incomplete use (Okada et al., 2021).

7.4. Self-guided decision (barrier)

Okada et al. (2021) identified that some patients, who were healthcare professionals, discontinued prophylactic antivirals without consulting their healthcare practitioner. Lonsdale et al. (2011) reported that patients who did not complete treatment commonly believed that their symptoms had improved or that they did not have influenza.

8. Environmental context and resources: The facilitators and barriers associated with this domain reflected any external situation that could impact an adaptive behaviour related to antiviral prescription or use.

8.1. Multidisciplinary collaboration (facilitator)

The multidisciplinary collaboration theme was developed based on data from pharmacists' perspectives. Strong collaborations with larger external organisations provided the resources for pharmacists to better provide access to antivirals (Almahasis et al., 2025). Furthermore, collaborations between pharmacists were helpful to share knowledge around patient experiences that other pharmacists might not have had yet (Sansom et al., 2025). Access to specialised multidisciplinary support facilitated timely antiviral prescribing and treatment. Pharmacists in a program in British Columbia described the value of a collaborative team that streamlined the assessment of antiviral eligibility, coordinated prescribing, and arranged medication delivery. This integrated model reduced delays in cases and provided medication to patients within the recommended therapeutic window (Dahri et al., 2025).

8.2. Virtual consultations (facilitator)

The consultation setting appeared to influence the prescribing of antivirals. Pharmacists recommended that prescriptions be provided following telephone consultation to avoid patients having to visit a pharmacy in-person when they were symptomatic (Gauld et al., 2021). Wang et al. (2023) found that during the early stages of the COVID-19 pandemic, prescribing settings that were centralised, such as telehealth consultations were perceived as less of a barrier to prescribing. Similarly, the likelihood of receiving an antiviral prescription varied according to the consultation setting (e.g., in-person office visits, video, messaging; Bromley-Dulfano, 2025), with virtual consultations contributing to quicker diagnoses compared to in-person consultations

(Bromley-Dulfano, 2025). However, disparities in access to virtual care were observed, with Black and Latino patients being less likely than White patients to receive virtual consultations.

8.3. Clinical space organisation (facilitator)

Providing designated waiting spaces for symptomatic patients to wait before consultations was associated with a greater number of antiviral prescriptions (Barthe et al., 2011). Key strategies that were reported include: using signage to guide symptomatic patients and using outside parking waiting areas (Almahasis et al., 2025).

8.4. Lack of compensation for work (barrier)

Pharmacists received compensation for prescribing antivirals during COVID-19; however, they described it as being "unfair" and even "ridiculous". Pharmacists recalled not being compensated for the time spent making clinical assessment and contacting patients' physicians (Almahasis et al., 2025).

8.5. Impractical administrative tasks (barrier)

Primary care physicians in Australia and England described mandatory reporting, testing approval, and prescription-authorisation procedures as time-consuming barriers that delayed antiviral prescribing (Kunin et al., 2015). Similarly, prescribers (pharmacists and doctors) in a pharmacist-led prescribing programme had to navigate multiple electronic platforms to complete each referral (Sansom et al., 2025).

8.6. Ineffective communication lines (barrier)

Pharmacists involved in an antiviral prescription program, indicated frustration being caused by a lack of efficient methods to contact physicians (Dahri et al., 2025; Papastergiou, 2016). During COVID-19, pharmacist described an inefficient back and forth communication that was mediated by faxes instead of phone calls (Dahri et al., 2025).

8.7. Affordability (barrier)

Some infectious disease physicians and prenatal care providers reported that patients' ability to afford treatment influenced prescribing decisions (Dharan et al., 2010; Mersereau et al., 2012). Community pharmacists also described affordability as influencing whether they recommended an antiviral (Gauld et al., 2011; Shaw et al., 2016).

Patients were less likely to use antivirals when medications were not reimbursed or when out-of-pocket costs were perceived to be unaffordable (Gaillat et al., 2005; Shaw et al., 2016; Soh et al., 2024). One-third of patients identified affordability as a reason they would be unlikely to purchase antivirals (SteelFisher et al., 2018). Although most patients indicated that they would pay for antivirals, relatively few indicated that they would pay more than $20 of out-of-pocket costs (Gaglia et al., 2021).

8.8. Transportation (barrier)

Hart et al. (2024) identified travel to an infusion clinic and the burden of repeated infusions as barriers to non-oral COVID-19 antiviral treatment.

8.9. Drug supply and availability (mixed)
During the COVID-19 and H1N1 pandemics, a perceived lack of drug supply was seen as an initial barrier to antiviral prescribing that declined over time (Dharan et al., 2010; Wang et al., 2023).

8.10. Resource allocation (mixed)
Adequate staffing and effective use of support staff were perceived by community pharmacists as crucial for managing antiviral prescribing (Almahasis et al., 2026). Pharmacists in British Columbia felt that, particularly at the start of the COVID-19 pandemic, they were "left to their own". Over time, increased access to support and collaboration improved their ability to manage prescribing responsibilities.

9. Social influences: The barriers and facilitators associated with the social influences domain referred to the interpersonal processes that could influence the prescribing and use of antivirals.

9.1. Expert recommendation (facilitator)
A small proportion of physicians identified expert recommendations as either the sole rationale (2.7%) or a contributing factor (21.2%) for continuing to prescribe antivirals during the COVID-19 pandemic despite evidence they considered unsupportive (Samim et al., 2022).

9.2. Trust in healthcare practitioners (facilitator)
Individuals were more likely to accept antivirals when treatment was recommended by a trusted healthcare practitioner. Acceptance reached 70% when the medication was prescribed by the patient's own healthcare provider (Quinn et al., 2009). During COVID-19, greater trust in healthcare practitioners was likewise associated with greater antiviral acceptance (Soh et al., 2024).

9.3. Trust in government and health authorities (facilitator)
Greater trust in government and regularity authorities was associated with increased willingness to use antivirals in patients during the H1N1 and COVID-19 pandemic (Quinn et al., 2015; Soh et al., 2024). Higher perceived trust in health messages from health authorities was also associated with stronger intentions to use antivirals (D'Antoni et al., 2019). Aligned with these associations, individuals who accepted emergency use authorised antivirals for themselves, or their children reported higher levels of trust in government compared to patients who refused antivirals (Quinn et al., 2009).

9.4. Patient refusal (barrier)
Patient refusal was reported as a reason antivirals were not prescribed (Gaillat et al., 2005; Mersereau et al., 2012). In Hart et al. (2024), patient refusal was the principal documented reason that eligible patients did not receive COVID-19 antiviral treatment through the pharmacist consultation service.

9.5. Conflicting advice (barrier)
Prenatal care providers reported that some pharmacists advised pregnant patients to avoid antivirals, creating conflict with recommendations made by physicians, nurse practitioners, or midwives (Mersereau et al., 2012).

9.6. Industry influence (barrier)
Some physicians reported that distrust of pharmaceutical-industry evidence influenced their prescribing views, particularly because they considered evidence for some at-risk paediatric groups insufficient (Bassett et al., 2025).

9.7. Absence of a healthcare-practitioner recommendation (barrier)
Absence of a healthcare practitioner recommendation was reported as a barrier to obtaining or using antivirals (Gauld et al., 2011; Dolan et al., 2012). In a separate study of business travellers, fewer than 5% identified practitioner recommendation as their reason for taking antivirals, suggesting that its influence may vary by population and context (Helfenberger et al., 2010).

9.8. Patient's requests (mixed)
Patient and family expectations sometimes influenced physicians' prescribing decisions. Some physicians reported prescribing antivirals in response to requests despite anticipating limited clinical benefit (Bassett et al., 2025). However, satisfying patient requests was generally rated as a lower-priority influence than clinical factors (Barthe et al., 2011; Bassett et al., 2025; Samim et al., 2022).

9.9. Patient–practitioner communication about benefits and harms (mixed)
Clinicians described discussing expected symptom reduction, illness duration, hospitalisation risk, and common adverse effects with patients (Bassett et al., 2025). The study supports communication about benefits and harms but does not provide sufficient evidence to characterise the process as formal shared decision-making or to determine its effect on uptake.

9.10. Discussing antiviral use with others (mixed)
Healthcare workers who discussed prophylactic antiviral use with a colleague who had taken the medication without problems were more likely to complete the full course than those who heard about adverse experiences (Upjohn et al., 2012). Separately, general practitioners in training who discussed a diagnosis with a supervisor were more likely to prescribe an antiviral (Moller et al., 2023).

10. Emotion: This domain corresponded to the emotional responses associated with illness or antivirals that may influence antiviral use.

10.1. Anticipated regret (facilitator)
Higher anticipated regret about not taking antivirals was associated with an increase in intentions to use antivirals (D'Antoni et al., 2019).

10.2. Worry (barrier)
A general sense of worry about using antivirals was significantly associated with refusing to use antivirals (Quinn et al., 2015). Similarly, worry about antivirals was associated with a reduced acceptance of antivirals being used for individuals' children (Quinn et al., 2009). Furthermore, the likelihood that patients were worried about using antivirals was further impacted by a drug being labelled experimental (Quinn et al., 2015).

TDF domains that were not represented in the literature

- **Optimism:** This domain would have corresponded to the positive expectations that the outcomes around antiviral prescription and use would be achieved.
- **Reinforcement:** This domain corresponds to factors that increase or decrease the probability of antivirals being prescribed or used related to anticipated or experienced rewards or other consequences.
- **Intentions:** This domain corresponds the individuals' conscious decisions or plans to prescribe or use antivirals.
- **Behavioural regulation:** This domain corresponds to strategies used to monitor or manage behaviours related to the prescribing and use of antivirals.

Limitations

To our knowledge, this is the first evidence synthesis to investigate factors influencing behaviours related to the prescribing and use of antivirals for the prevention and treatment of respiratory viruses associated with severe disease. While this review provides valuable insights into the barriers and facilitators affecting the prescription and use of antivirals, several limitations should be considered when using this report.

- Much of the available evidence was drawn from the United States (24 of 47 studies; 51%). Differences in financing, professional scopes of practice and access pathways may limit transferability to Canada. Future research should examine behavioural determinants within Canadian and other publicly funded healthcare systems.
- The evidence disproportionately represented prescribers rather than patients or potential patients, particularly in the COVID-19 literature. Future research should distinguish acceptance, treatment initiation, adherence and discontinuation, rather than treating them as a single "use" behaviour.
- Twenty-four articles addressed physicians' perspectives, nine included pharmacists, three included nurses and one included midwives. However, few studies directly compared professional groups, and heterogeneity in settings, viruses and outcomes prevented meaningful cross-profession synthesis. Future studies should use comparable measures and designs across physicians, pharmacists, nurses and other authorised prescribers.
- The methodological quality of several included studies was limited. Quality appraisal using the Mixed Methods Appraisal Tool identified concerns including interpretations that were not fully supported by the reported data (Ahankari et al., 2019), incomplete data (Peters et al., 2013), and a high risk of non-response bias (Lonsdale et al., 2011; Williams et al., 2014).

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