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Antibiotic Use and Resistance in Canada

Why the Canadian Federal Government should not encourage delayed prescriptions: a jurisdictional and policy analysis

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One Health Against Pathogens

Table of contents

Abbreviations

Executive summary	1
1.1. Overview of the problem	1
1.2. Policy options analyzed	1
1.3. Core argument: Federal non-involvement is the most appropriate approach	1
Problem context: AMR and antibiotic use.....	2
2.1. Burden of AMR in Canada	2
2.2. Antibiotic use in Canada	2
2.3. Delayed prescription: definition, evidence and limitations.....	2
Jurisdictional and legal framework.....	3
3.1. Constitutional framework: Division of healthcare powers	3
3.2. Existing federal levers in health and their scope	4
3.3. Provincial professional governance.....	5
3.4. Medico-legal considerations.....	5
3.5. Synthesis: Jurisdictional rationale for federal non-intervention	6
Critical stakeholder analysis	6
4.1. Physicians and clinical perspectives.....	6
4.2. Patient perspectives and behaviour	7
4.3. System integration: Pharmacy	7
4.4. Provincial governments: Primary decision-makers	8
4.5. Federal public health agencies: Advisory role only	8
Policy option analysis	9
Option A: Active federal encouragement	9
Option B: Federal non-involvement - recommended	10
Option C: Alternative federal actions.....	10
Evaluation and recommendations	11
6.1. Evaluation framework.....	11
6.1.1. Effectiveness	11
6.1.2. Feasibility.....	11
6.1.3. Acceptability	11

6.1.4. Cost	11
6.1.5. Jurisdictional appropriateness	11
6.2. Comparative analysis and recommendations	12
Conclusion.....	12
Communication Strategy	13
8.1. Executive summary	13
8.2. Target audience - Healthcare providers	13
8.2.1. Interactive education: The "Diagnostic Confidence" quiz.....	14
8.3. Target audience - Canadian public	14
8.3.1. Social media strategy	14
8.3.2. Earned media: Opinion-Editorials (Op-Eds) and press outreach.....	14
8.4. Centralized website to house resources	15
8.4.1. "For Canadians" section.....	15
8.4.2. "For healthcare providers" section.....	15
References	16

Abbreviations

AMR : Antimicrobial resistance

AMS : Antimicrobial stewardship

CARSS: Canadian Antimicrobial Resistance Surveillance System

CHT: Canada Health Transfer

CME: Continuing Medical Education

CMPA: Canadian Medical Protective Association

DP : Delayed prescription(s)

FMRAC: Federation of Medical Regulatory Authorities of Canada

FPT: Federal/Provincial/Territorial

GP: General practitioner(s)

MRSA: Methicillin-resistant *Staphylococcus aureus*

NP: Nurse practitioner

Op-Eds: Opinion-Editorials

PHAC: Public Health Agency of Canada

POC: Point of Care

UTI: Urinary tract infection

Executive summary

1.1. Overview of the problem

Antimicrobial resistance (AMR) is an increasing public health challenge in Canada, contributing to thousands of deaths each year and imposing major economic and healthcare burdens. The widespread and sometimes non-guideline-concordant use of antibiotics in both healthcare and agriculture has accelerated the emergence of resistant pathogens, increasing the frequency and severity of infections. Delayed antibiotic prescriptions (DP) have emerged as an antimicrobial stewardship (AMS) strategy to reduce unnecessary antibiotic use by encouraging patients to delay treatment when infections may resolve on their own.

Although DP has demonstrated some effectiveness in reducing antibiotic consumption in primary care, their broader impact on AMR remains uncertain. Evidence suggests important limitations, including inconsistent patient adherence, risks associated with delayed treatment, and variability in clinical outcomes depending on the infection type and healthcare context. At the same time, the Canadian healthcare system is characterized by constitutionally shared responsibilities, where provincial governments retain primary authority over healthcare delivery, professional regulation, and prescribing practices. As a result, the question of whether the federal government should actively encourage DP extends beyond clinical effectiveness alone. It also involves constitutional, professional, and implementation considerations related to federal-provincial

jurisdiction, physician autonomy, patient safety, and the overall organization of AMS efforts in Canada.

1.2. Policy options analyzed

Three policy options were analyzed concerning the federal government's role in promoting DP in Canada: active federal encouragement through guidelines and incentives, federal non-involvement, and alternative federal actions focused on surveillance, diagnostics, public awareness, and AMS support. The analysis concluded that federal non-involvement, combined with broader stewardship initiatives, represents the most feasible and jurisdictionally appropriate approach to addressing AMR.

1.3. Core argument: Federal non-involvement is the most appropriate approach

Given the pressing nature of the AMR situation in Canada, the core question of this policy brief is “*Should the Canadian Government encourage the use of DP?*”. Our recommendation is that the Canadian Government should not directly encourage the use of DP as an effort to combat AMR. There are many factors influencing our position such as the conflicting evidence for the overall benefit of DP, the respect of different roles across various levels of governments in healthcare, legal concerns for healthcare professionals and other alternative means of combatting AMR that can be implemented instead.

Problem context: AMR and antibiotic use

2.1. Burden of AMR in Canada

According to the Public Health Agency of Canada (PHAC), AMR caused 4,500 direct deaths and 14,000 indirect deaths in Canada in 2018. PHAC estimates that, in 2018, AMR cost Canada's healthcare system \$1.4 billion and reduced the Canadian gross domestic product by \$2 billion (PHAC, 2023; CCA, 2019). AMR *Clostridium difficile* and methicillin-resistant *Staphylococcus aureus* (MRSA) were responsible for 1,743 premature deaths and an estimated \$125 million in healthcare costs in 2019 alone (Diener et al., 2022). The rise in frequency and severity of AMR infections, particularly in hospital settings, has increased the risk of complications associated with routine medical procedures. Healthcare associated infections with AMR bacteria increased from 2016 to 2020 with vancomycin-resistant Enterococci bloodstream infections increasing by 72% and carbapenemase-producing *Enterobacterales* infections and colonisations increasing by 67% and 86%, respectively (CNISP, 2022). Finally, AMR can have disproportionate impacts on marginalized groups (McCubbin et al., 2021), reinforcing the need for coordinated action to reduce its burden across Canada.

2.2. Antibiotic use in Canada

A factor that is facilitating the rise of AMR is the widespread use of antibiotics in Canada. While antibiotics are commonly associated with human healthcare, this sector only represents around 17% of all antibiotics sold in Canada from 2017 to 2021. The largest sector for antibiotic use is by far the agriculture sector, which used 82%

of all antibiotics sold from 2017 to 2021 (PHAC, 2023). Recent efforts to limit use of antibiotics in the agriculture sector have included banning the use of category I, II and III antibiotics for prophylactic use in animals (Plat et al., 2026). While there are very strict guidelines regarding antibiotic use in the human healthcare sector, errors by prescribers and consumers are still possible. Examples include accidental prescribing of antibiotics for viruses, needlessly using broad-spectrum antibiotics when narrow spectrum options would work, patients not finishing their prescriptions to keep remaining pills and reserving them to treat future infections (Singh et al., 2024). These consumer practices can also be observed in the context of veterinary medicine for pets, where owners may try to pressure veterinarians to quickly prescribe or ignore the instructions for the prescription (CVO, 2022, OMVQ, 2021). Doctors and veterinarians might prefer to prescribe antibiotics quickly despite diagnostic uncertainty out of concern for their patients to quickly alleviate symptoms. However, waiting for further diagnostic tests or changes in symptoms to identify the ideal treatment might be beneficial. A potential solution to these problems that has become increasingly popular is the use of DP.

2.3. Delayed prescription: definition, evidence and limitations

DP are antibiotic prescriptions that instruct patients to wait a few days before starting treatment, unless symptoms worsen or fail to improve. There is evidence that DP can be useful to manage flu-like infections (cough, sore throat and sinusitis) in addition to otitis media and

lower urinary tract infections (UTI) (Stuart et al., 2021). They can be particularly useful when practitioners are unsure if antibiotics are necessary to treat their patient (McLeod et al., 2024). This uncertainty can arise from the doctor not knowing whether the infection is caused by a bacterium or a virus. Viral infections cannot be treated using antibiotics. Prescribing them would needlessly increase the risk of spreading AMR and negatively affect treatment outcomes for patients (Hovind et al., 2024). Many bacterial infections are self-limiting and carry a low risk of complications. In these cases, allowing symptoms to resolve without antibiotics can reduce unnecessary use. Accordingly, DPs have been shown to reduce antibiotic consumption compared to immediate prescribing (Spurling et al., 2023), including a 12% decrease over four weeks in one urgent care clinic study (Tonazzi et al., 2022). While reducing antibiotic consumption should be helpful for reducing the burden of AMR, there are certain limitations in the implementation of DP. A key limitation of DP is their reliance on patient adherence. In a 2022 randomized trial, nearly half of patients filled

their prescription the same day they received it, and only 16% followed the DP instructions correctly (Llor et al., 2022). Some studies have found that DP causes no significant difference in hospital admission rates from complications or increased symptom severity after follow up consultations (Stuart et al., 2021). However, evidence on DP outcomes remains mixed. Some studies suggest potential risks, including slower UTI symptom resolution (Midby & Miesner, 2024), longer hospital stays, higher costs, and increased mortality or hospice discharge for Gram-negative infections (Bonine et al., 2019), as well as a higher risk of infection-related hospital admission for upper respiratory tract infections (van Staa et al., 2021). Given that hospital acquired infections are a major vector for the spread of AMR infections, the increased length of stay and likelihood of hospitalizations might counteract the initial reduction of antibiotic use with DP. While there are no direct studies observing the impact of DP on AMR, there is evidence that they can reduce antibiotic usage, which can indirectly limit the spread of AMR pathogens (Arroll et al., 2003).

Jurisdictional and legal framework

3.1. Constitutional framework: Division of healthcare powers

Health is not assigned exclusively to either order of government in the *Constitution Act, 1867* (Department of Justice Canada. (n.d.)). The Supreme Court has treated it as an "amorphous" subject matter whose jurisdiction depends on the pith and substance of the measure at issue (Kluge, 1999). Provincial primacy in healthcare delivery derives from three heads of power under

section 92 (hospitals (92(7)), property and civil rights (92(13)), and local matters (92(16))) which together vest provinces with exclusive authority to organize physician services, license health professionals, and regulate health insurance (Marchildon et al., 2020). Federal authority is more limited and operates principally through the criminal law power (s. 91(27)), the spending power (ss. 91(3) and 91(1A)), and, residually, the peace, order and good government clause

(Library of Parliament, 2008). The Canadian healthcare system is therefore best characterized as constitutionally shared rather than decentralized; within this architecture, the act of

prescribing falls under provincial jurisdiction over the regulated practice of medicine and is not directly amenable to federal command.

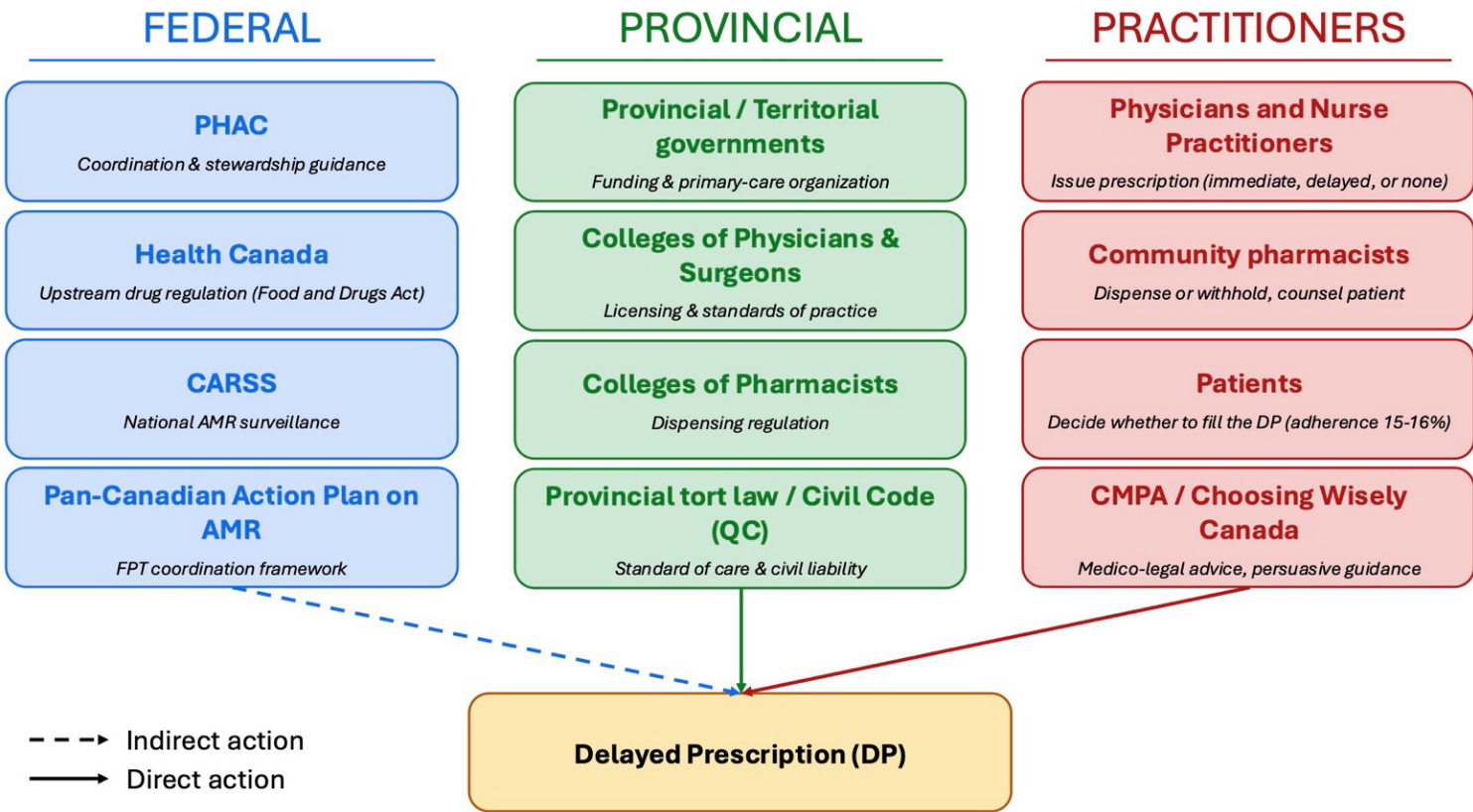


Figure 1. Distribution of authority and direct vs. indirect influence over delayed prescription (DP) practice in Canada. Federal bodies (blue) operate through coordination, surveillance, and upstream drug regulation, exerting only indirect influence on the issuance of DP (dashed arrow). Provincial bodies (green) hold direct authority through funding, primary-care organization, professional licensing, dispensing regulation, and standards of care enforced through civil liability (solid arrow). Practitioners and patients (red) act at the point of prescription, dispensing, and adherence, directly determining DP outcomes (solid arrow). The figure illustrates that federal levers are structurally upstream and non-directive with respect to individual prescribing, while provincial and practitioner levels carry the decisional weight.

3.2. Existing federal levers in health and their scope

The federal government disposes of three substantive levers in healthcare, none of which is well-calibrated to the targeted promotion of DP.

The **federal spending power** conditions the Canada Health Transfer (CHT) on provincial adherence to the five criteria of the *Canada Health Act*: public administration, comprehensiveness, universality, portability, and accessibility (Hajizadeh & Keays, 2023). These criteria target the financing and architecture of insurance plans, not the substance of clinical decisions. Tying CHT conditions to specific prescribing strategies would represent an unprecedented expansion of the spending power into clinical practice.

The **criminal law power** underlies federal pharmaceutical regulation through the *Food and Drugs Act* and the *Controlled Drugs and Substances Act*, which govern the manufacture, sale, and scheduling of antimicrobials. These statutes affect the upstream availability of antibiotics but stop short at the point of prescription, which is regulated provincially. Deploying the criminal law power to mandate or incentivize a prescribing modality would be constitutionally novel and disproportionate.

Public health coordination is exercised by the PHAC through the Canadian Antimicrobial Resistance Surveillance System (CARSS) and the 2023–2027 *Pan-Canadian Action Plan on Antimicrobial Resistance* (PHAC, 2023). Both instruments operate through federal/provincial/territorial (FPT) coordination rather than federal directive. The pattern is consistent: federal levers exist and are legally valid, but they have been deployed for system-level coordination, financing, and regulation rather than for the prescription of specific clinical strategies (Marchildon et al., 2020).

3.3. Provincial professional governance

Medicine is a self-regulated profession in Canada. Each province and territory has a College of Physicians and Surgeons with statutory authority to license practitioners, set enforceable standards of practice, and impose discipline (Master et al., 2014). Provincial Colleges of Pharmacists exercise analogous authority over dispensing, which is directly relevant to DP because the strategy implicates both prescribing and pharmacist-patient interactions at the point of dispensing. National bodies (the Royal College of Physicians and Surgeons of Canada, the College of Family Physicians of Canada, and the Federation of Medical Regulatory Authorities of Canada (FMRAC)) accredit training and coordinate among provincial Colleges but do not exercise licensing

authority. National clinical guidance, including Choosing Wisely Canada and the Using Antibiotics Wisely campaign, has explicitly endorsed DP as a stewardship tool (Choosing Wisely Canada, n.d.), but its authority is persuasive rather than mandatory; the standard of care remains provincially defined.

3.4. Medico-legal considerations

Civil liability of physicians is governed by provincial tort law (or the *Civil Code* in Quebec), and medico-legal defence is provided to most Canadian physicians by the Canadian Medical Protective Association (CMPA, 2024). Three considerations are salient for DP. First, the physician retains responsibility for foreseeable adverse outcomes resulting from delayed therapy

and must mitigate this risk through patient selection, written instructions, and safety-netting. Second, documentation of the rationale for the delayed strategy and of the patient's understanding becomes evidentiary in any subsequent claim. Third, because DP relies on patient adherence (including the decision not to fill) they situate part of the therapeutic decision outside the prescriber's control, with implications for informed consent (de la Poza Abad et al., 2016; Spurling et al., 2023). The standard of care is set provincially; federal directives recommending or financially incentivizing DP would not modify it and could

create dissonance between federal policy signals and locally enforceable professional standards.

3.5. Synthesis: Jurisdictional rationale for federal non-intervention

The federal government can act on AMS through tools such as CARSS, the Pan-Canadian Action Plan, the Food and Drugs Act, and conditional fiscal transfers. However, these levers are not well suited to directly promoting DP. Prescribing falls under provincial professional regulation, evidence on DP remains context-dependent, and existing FPT mechanisms already support stewardship without federal intervention in clinical practice.

Critical stakeholder analysis

4.1. Physicians and clinical perspectives

Physicians play a key role in implementing DP strategies, which are supported by several clinical and contextual factors (McLeod et al., 2024). First, DP can act as a safety-net, particularly when there is diagnostic uncertainty, allowing patients to access antibiotics if symptoms do not improve (Mas-Dalmau et al., 2023; McLeod et al., 2024; Peters et al., 2011; Saliba-Gustafsson et al., 2019). This approach is especially likely when clinicians are uncertain about the need for immediate antibiotics but have a low tolerance for risk, particularly when they perceive DP as a clinically useful option (Mas-Dalmau et al., 2023; McLeod et al., 2024). DP may also reduce the need for patients to seek alternative services, such as emergency care, if their condition worsens or access to primary care is limited. However, nurse practitioners (NP) and some general practitioners (GP) trainees are generally less likely to adopt DP in these circumstances, preferring patient re-consultation as

a safer approach (Peters et al., 2011). These differences reflect variations in professional autonomy and perceived responsibility. NPs often adopt a more cautious approach to avoid inappropriate prescribing, while GPs may be more inclined to use DP as a safety-net against clinical worsening (Peters et al., 2011).

Beyond safety-netting, DP helps clinicians manage diagnostic uncertainty, patient expectations, and time constraints, often reducing consultation conflict and pressure to prescribe antibiotics immediately, although it may also be used to avoid potential complications or follow-up demands (Rowe & Linder, 2020; Saliba-Gustafsson et al., 2019). In addition, DP can help improve the doctor-patient relationship by reducing conflict when antibiotics are expected and by providing reassurance through a “backup” prescription, particularly for patients who prefer to avoid antibiotic use (McLeod et al., 2024). Even when the antibiotic is not ultimately used, its availability can

offer patients psychological security and improve satisfaction with the consultation (McLeod et al., 2024; Peters et al., 2011; Saliba-Gustafsson et al., 2019).

However, several perceptual barriers may discourage physicians from adopting DP (McLeod et al., 2024). Some clinicians are concerned that DP could pose risks that outweigh the benefits of reducing their use (McLeod et al., 2024). They may also hesitate to transfer decision-making responsibility to patients, fearing misuse, such as taking antibiotics immediately despite instructions or saving them for future use as well as concerns that this shift in responsibility may not always serve patients' best interests (McLeod et al., 2024; Rowe & Linder, 2020; Saliba-Gustafsson et al., 2019). These concerns are closely linked to professional responsibility and ethical tensions, particularly the balance between minimizing unnecessary antibiotic use and ensuring patient safety (Rowe & Linder, 2020). In addition, DP can be perceived as confusing, as it may send mixed messages about whether antibiotics are truly necessary (Mas-Dalmau et al., 2023; McLeod et al., 2024; Peters et al., 2011). Consistent with these concerns, only about half of GPs consider DP to be an appropriate or acceptable strategy to reduce antimicrobial use (PHAC, 2019).

4.2. Patient perspectives and behaviour

Patient perspectives on DP are mixed. Some patients view it negatively, preferring immediate treatment and feeling uncomfortable with uncertainty or shared decision-making (Rinaldi et al., 2025). In these cases, DP may cause anxiety, confusion, reduced trust in physician competence, and concerns that responsibility is being shifted onto the patient (Rinaldi et al., 2025; Rowe & Linder, 2020).

In contrast, some patients view DP positively as a flexible compromise that allows time for recovery while preserving access to antibiotics if symptoms persist (Rinaldi et al., 2025). They associate DP with reduced unnecessary antibiotic use, lower healthcare burden, greater autonomy, and improved shared decision-making (Rinaldi et al., 2025).

Patient behaviour regarding DP shows a gap between acceptability and actual use (McNulty et al., 2015). Although awareness of the strategy is generally low and attitudes are mixed, most patients who receive a DP tend to find it acceptable and report positive evaluations of the approach (McNulty et al., 2015). However, this does not always translate into intended use in practice (McNulty et al., 2015). Many patients still proceed to collect and take the antibiotic despite being advised to wait, suggesting partial adherence to the strategy (McNulty et al., 2015). This pattern indicates that even when DP is well received, decision-making is often influenced by symptom perception, anxiety about deterioration, and a preference for immediate resolution (McNulty et al., 2015). As a result, real-world adherence to DP instructions can be limited, with studies reporting low compliance rates, such as only around 15-16% of patients fully following the recommended delay before initiating antibiotics (Llor et al., 2022; McNulty et al., 2015). Nevertheless, patients generally report feeling confident in their ability to decide whether to use a DP, and a large majority express a preference for receiving this “wait-and-see” approach in similar situations in the future (PHAC, 2019).

4.3. System integration: Pharmacy

Several factors support the integration of community pharmacies into AMS and DP strategies. Pharmacists are accessible, trusted frontline professionals, and their role could be

strengthened through clinical decision support systems, improved collaboration with GPs, specialized AMS training, and better access to shared medical records (Durand et al., 2022). Public awareness campaigns, financial incentives, and pharmacy management systems may further support their involvement (Durand et al., 2022).

In contrast, several barriers continue to limit effective integration (Durand et al., 2022). The most important constraint is the lack of access to medical diagnoses and patient records, which restricts clinical decision-making in pharmacy practice (Durand et al., 2022). Limited acceptance from GP regarding pharmacists' involvement in prescription review further affects collaboration (Durand et al., 2022). Time constraints in daily workflow also reduce the feasibility of expanded stewardship roles (Durand et al., 2022). In addition, gaps in training and qualifications among pharmacy staff, along with difficulties in reaching GP for clarification or coordination, remain significant obstacles (Durand et al., 2022). Although pharmacists are well positioned to contribute to DP, their role is strongly influenced by structural limitations and the level of interprofessional integration within the healthcare system (Durand et al., 2022). Across Canada, ongoing investments in electronic medical records, e-prescribing systems, and shared health information platforms similarly aim to improve interprofessional communication and support safer, more coordinated medication use, although their implementation and use across professional groups remain heterogeneous (Allin et al., 2021).

4.4. Provincial governments: Primary decision-makers

In Canada, DP implementation is largely influenced by the shared constitutional structure of

the healthcare system, in which provincial and territorial governments are the main decision-makers for organizing, funding, and delivering primary care services (The Commonwealth Fund, 2026). They also regulate professional scopes of practice and implement health information systems, which means that key enablers of DP, such as e-prescribing tools, access to clinical data, and digital health integration, are developed and managed at the provincial level rather than nationally (The Commonwealth Fund, 2026). Therefore, the adoption of DP strategies depends heavily on local policy priorities and healthcare infrastructure (The Commonwealth Fund, 2026). This structure leads to important variation across provinces in how DP can be implemented in practice. While federal health agencies can provide guidance and national recommendations, final decisions regarding policy adoption and implementation rest with provincial governments. Consequently, differences in prescribing guidelines and stewardship approaches may emerge across jurisdictions, potentially creating inconsistencies and confusion among healthcare professionals operating in different provinces.

4.5. Federal public health agencies: Advisory role only

Federal public health agencies in Canada play a supportive and coordinating role in AMS rather than directing clinical prescribing. PHAC strengthens public health capacity through tools, training, and national networks, while promoting collaboration across jurisdictions (PHAC, 2012). Its role is therefore focused on guidance and capacity-building, meaning DP use ultimately depends on provincial policies and clinical judgment.

Option A:

Active federal encouragement: National guidelines and incentives

Active federal encouragement of DP through national guidelines or financial incentives could reduce antibiotic use in primary care but would raise significant governance and implementation challenges (Spurling et al., 2023; Stuart et al., 2021).

5.1.1. Unintended consequences

Federal promotion of DP may create clinical ambiguity and inconsistent application across jurisdictions, particularly when clinical indications are not clearly defined (Rowe & Linder, 2020). This could lead to heterogeneous prescribing behaviours and undermine the standardization that national guidelines aim to achieve. DP also rely heavily on patient understanding and adherence, yet studies show that many patients fill prescriptions immediately despite instructions to delay, creating uncertainty in outcomes and limiting their effectiveness as

a stewardship tool (Mas-Dalmau et al., 2023; Rinaldi et al., 2025). In addition, DP may shift decision-making responsibility to patients, potentially leading to inappropriate antibiotic use or delayed treatment when prompt intervention is needed (Spurling et al., 2023). In some contexts, DP has been associated with complications or prolonged illness, particularly for certain infections (Bonine et al., 2019; van Staa et al., 2021). Finally, federal promotion of a specific clinical strategy may be perceived as intrusive by provincial regulators and physicians, reducing professional buy-in and undermining trust in national public health guidance.

5.1.2. Implementation challenges

Implementing federally driven DP policies would be constrained by Canada's decentralized healthcare system, where provinces and territories retain primary authority over

healthcare delivery and physician regulation. As a result, federal influence over prescribing practices is limited. Operationalizing national guidelines would require extensive intergovernmental coordination across diverse provincial healthcare systems, digital infrastructures, stewardship programs, electronic medical record systems, and prescribing tools. In addition, prescribing behaviour is shaped by clinical uncertainty, patient expectations, and time constraints, meaning financial incentives alone are unlikely to change practice without education, audit and feedback, and system-level support (McLeod et al., 2024). Overall, while Option A may offer theoretical benefits, its implementation and scalability remain limited in the Canadian context.

Option B:

Federal non-involvement - recommended:

No formal encouragement, to maintain physician and provincial authority

Maintaining federal non-involvement in the targeted promotion of DP is the most jurisdictionally appropriate option. As discussed in Section 3, prescribing falls under provincial authority through sections 92(13) and 92(16) of the *Constitution Act, 1867*, and is regulated by provincial Colleges of Physicians and Surgeons. Federal levers, including the spending power, the *Food and Drugs Act*, and pan-Canadian coordination, are not designed to shape individual prescribing practices and using them for this purpose could intrude on provincial professional regulation (Department of Justice Canada. (n.d.)). Given the mixed evidence on DP's impact on AMR and their context-dependent implementation, decisions about their use are better left to clinical and provincial authorities, who can assess local needs, infrastructure, and stewardship frameworks. This approach also preserves physician autonomy, which is important for professional acceptance; strong federal promotion could reduce uptake rather than improve it if clinicians perceive it as inappropriate or intrusive (Acampora et al., 2023). Importantly, federal non-involvement does not mean inaction, but allows the federal government to focus on surveillance, funding, and coordination of broader AMR strategies without encroaching on provincial authority.

Option C:

Alternative federal actions:

Public awareness, investment in diagnostics and broader AMR strategies

A more appropriate federal approach would involve indirect support for AMS rather than promoting a specific prescribing strategy. This could include public awareness campaigns to reduce patient demand for antibiotics, investment in rapid diagnostic technologies to distinguish bacterial from viral infections, stronger national AMR surveillance systems to guide targeted interventions, and funding for stewardship programs, education, and training (WHO, 2023; PHAC, 2023; O'Neill, 2016; WHO, n.d.; Dyar et al., 2017). These actions address the systemic drivers of antibiotic misuse and better align with the federal government's public health mandate. Unlike DP, which operate at the individual clinical level, these strategies could generate broader and more sustainable impacts on AMR (Laxminarayan et al., 2013).

Evaluation and recommendations

6.1. Evaluation framework

To assess the relative merits of each policy option, five criteria were considered:

Criteria	Option A	Option B	Option C
Effectiveness	M	L	H
Feasibility	L	H	H
Acceptability	L-M	H	H
Cost	L	H	M-H
Jurisdiction	L	H	H

Table 1. Comparative evaluation of policy options. Each option is rated on a three-level qualitative scale: Low (L), Medium (M), High (H), reflecting expert judgment from the present analysis. Criteria are defined as follows: **Effectiveness** (L = no measurable impact on AMR; M = effect on antibiotic use but not on population-level AMR; H = sustained impact on AMR drivers); **Feasibility** (L = exceeds federal jurisdictional levers; M = requires substantial FPT coordination; H = aligned with existing federal mandates); **Acceptability** (L = significant stakeholder resistance expected; M = mixed or conditional support; H = broad support across physicians, patients, and provinces); **Cost** (L = high cost with uncertain returns; M = moderate cost with partial returns; H = moderate cost with sustained, broad returns); **Jurisdiction** (L = encroaches on provincial authority; M = contested jurisdictional zone; H = fully within federal competencies). Intermediate ratings (e.g., L-M) indicate that evidence or stakeholder positions span more than one level.

6.1.1. Effectiveness

While DP have been shown to reduce antibiotic consumption in certain contexts, there is limited evidence linking their use to measurable reductions in AMR at the population level (Spurling et al., 2023). In contrast, broader stewardship interventions, such as surveillance, diagnostics, and education, target the structural determinants of antibiotic use and are more likely to yield sustained reductions in AMR (Laxminarayan et al., 2013).

6.1.2. Feasibility

Option A faces significant feasibility challenges due to jurisdictional fragmentation and implementation complexity. Option B is highly feasible, as it aligns with existing governance structures. Option C is also feasible, leveraging established federal roles in funding, coordination, and public health programming.

6.1.3. Acceptability

Acceptability of DP is variable among both physicians and patients, with concerns related to safety, responsibility, and clarity of instructions (McLeod et al., 2024). In contrast, broader stewardship strategies (Option C) are generally more acceptable, as they support clinical decision-making without constraining it.

6.1.4. Cost

Implementing national DP guidelines would require significant investments in coordination, training, and monitoring, with uncertain returns. Option C represents a more efficient allocation of resources, targeting high-impact interventions such as diagnostics and surveillance infrastructure.

6.1.5. Jurisdictional appropriateness

Option A is the least appropriate, as it risks overstepping federal authority in clinical decision-making. Option B is fully aligned with constitutional responsibilities, while Option C remains appropriate by focusing on federal competencies in public health and national coordination.

6.2. Comparative analysis and recommendations

A comparative assessment of the three options highlights trade-offs between effectiveness, feasibility, acceptability, and jurisdictional appropriateness. Option A may align with AMS goals, but its impact is limited by implementation and governance challenges. Although DP can reduce antibiotic use at the individual level, evidence of population-level effects on AMR remains inconclusive (Spurling et al., 2023). Federal promotion also risks inconsistent application, physician resistance, patient misunderstanding, and overstepping constitutional boundaries, since prescribing falls under provincial jurisdiction and professional regulation.

Option B is therefore the most jurisdictionally appropriate and operationally sound approach. It respects Canada's decentralized healthcare system, preserves physician autonomy, and allows DP decisions to remain at the provincial and clinical levels, where policies can be adapted to local needs

and infrastructure. It also avoids imposing a uniform strategy in a context where evidence and implementation remain heterogeneous.

However, federal non-involvement should not mean disengagement. It should be complemented by Option C, which offers a more appropriate federal pathway through public awareness, diagnostic tools, strengthened surveillance, and stewardship programs. These actions address structural drivers of antibiotic misuse without interfering with clinical decision-making and are more likely to produce sustained, system-wide impacts.

Overall, this analysis supports a combined approach centred on Option B and supported by elements of Option C. The federal government should refrain from directly encouraging DP while reinforcing its role in coordination, funding, and public health leadership to reduce inappropriate antibiotic use and mitigate AMR.

Conclusion

This policy brief addressed the question: should the Government of Canada encourage the use of delayed prescriptions as part of its AMS strategy? The analysis presented here concludes that it should not. Three converging considerations support this position:

Jurisdictionally: the act of prescribing falls within provincial competence under sections 92(13) and 92(16) of the *Constitution Act, 1867*, and is regulated through provincial Colleges of Physicians and Surgeons; federal levers are not calibrated to influence the form of individual prescriptions (Department of Justice Canada. (n.d.)).

Empirically: while DP reduces antibiotic consumption in primary care, evidence on AMR-level impact remains heterogeneous and context-dependent (Spurling et al., 2023; Stuart et al., 2021).

Professionally: physician acceptance of DP is variable, and federal directive would risk reducing rather than enhancing uptake (McLeod et al., 2024).

The recommended approach combines Option B (federal non-involvement on DP specifically) with Option C (strengthened federal investment in surveillance, diagnostics, public awareness, and research coordination through the *Pan-Canadian Action Plan on Antimicrobial Resistance, 2023–2027*). This division of responsibility respects constitutional boundaries while maintaining a substantive federal contribution to AMR mitigation at the system level.

Clinical decisions regarding DP should remain with provincial regulators, professional associations, and individual physicians, who are best positioned to apply the evidence to local contexts. The federal government's most effective contribution to AMS lies upstream of the prescription itself.

Communication Strategy

Executive summary

This communication strategy supports the above policy recommendation that the federal government of Canada should not formally encourage the use of DP to combat AMR. DP are intended to address AMR, but conflicting evidence regarding their efficacy and feasibility warrant enough concern to avoid formally recommending their use.

In our policy brief we recommend the implementation of option B, the maintenance of physician and provincial authority through federal non-involvement, complemented with support from option C, supporting alternative AMR strategies. In this communication strategy, we inform two target audiences on this recommendation: Canadian healthcare providers and the general Canadian public.

For healthcare providers, we aim to provide academic and legal resources to educate healthcare providers on conflicting concerns regarding DP. In line with option C, we also include access to diagnostic support tools and funding sources. For the Canadian public, we aim to explain DP and its concerns in an accessible manner using social media and opinion-editorials. All the resources and information in our communication strategy will also be centralized on PHAC's website for ease of access.

Through this communication strategy we ultimately aim to improve communication between healthcare providers and the public. By managing the public's expectations regarding DP, there will be less confusion between the patient and their physician.

Target audience - Healthcare providers

The primary professional audience comprises frontline healthcare practitioners, specifically including family physicians, nurse practitioners, pharmacists, and veterinary professionals operating within primary care clinics and emergency departments. These individuals represent the critical interface of prescription delivery and routinely experience the highest volume of patient pressure to prescribe immediate antimicrobial therapies.

Interactive education: The "Diagnostic Confidence" quiz

To actively engage medical and veterinary professionals, the federal government will deploy the "Diagnostic Confidence" Quiz, an interactive, web-based educational module hosted on the PHAC portal that allows practitioners to earn Continuing Medical Education and continuous professional development credits. The foundational concept of this module relies on presenting clinicians with ten distinct, highly realistic clinical and veterinary scenarios, such as a pediatric patient presenting with acute otitis media or a canine presenting with suspected superficial pyoderma. Each case vignette guides the practitioner through the diagnostic decision-

making process, explicitly demonstrating how the utilization of DP frequently correlates with elevated patient or caregiver confusion, diagnostic delays, and compromised follow-up tracking compared to the alternative strategy of Active Observation, where no prescription is provided but a strict, pre-scheduled re-evaluation timeline is established. The ultimate clinical outcome of this quiz is to reinforce the federal policy stance, illustrating that the federal government's most effective role lies in supporting active, evidence-based stewardship and diagnostic certainty rather than endorsing the clinical ambiguity inherent in delayed prescribing practices.

Target audience - Canadian public

Public trust is valued throughout transparency; hence a communication tactic will be used to manage patient expectations regarding "just-in-case" medication. By being informed in advance, this will facilitate the professionals' work when they want to use DP.

Social media strategy

By using PHAC's existing social media account, we will already have direct access to a part of the Canadian public. We are creating a targeted campaign using the #AllAgainstAMR.

The content will include infographics showing the rise of AMR and vulgarized data about delayed prescriptions. The goal is to educate the public about the need to use new approaches while staying clear that only a medical professional can take the decision when DP can be used or not.

A series of 90-seconds high-quality videos will be shared on social media and will be made

accessible for professionals to project in their waiting rooms. This will allow us to reach a population that doesn't use social media or doesn't follow the PHAC accounts. The videos will introduce the patients how to properly use their DP if their medical team decide that the context is appropriate.

List of existing accounts : @CPHO_Canada (X), Public Health Agency of Canada | Agence de la santé publique du Canada (LinkedIn), Public Health Agency of Canada (Facebook).

Earned media: Opinion-Editorials (Op-Eds) and press outreach

This type of media is ideal to reach out to the communities that don't use social media and the

French-Canadian communities outside of Quebec and New-Brunswick. We will use high impact

journals and local newspapers to share the narrative : "Beyond the Quick Fix: Why Canada is Choosing Diagnostic Rigor over Delayed Prescriptions." There will also be direct outreach

to health reporters to explain that not encouraging DPs isn't to reduce the patients' options, but to move toward higher quality care.

Centralized website to house resources

To facilitate easy access to all resources outlined in this communication strategy, a centralized, federal resource (hosted by the PHAC) will be established. There will be two main sections on this website: "For Canadians" and "For healthcare providers".

"For Canadians" section

This section will contain four pages specific to informing the public on DP. A section named "Immediate vs delayed prescription antibiotics" will explain what an antibiotic and a DP are. This will help clearly delineate the differences between normally prescribed antibiotics and DP.

"AMR awareness" will explain what AMR is and why it is a major public health concern. This will help rationalize why DP have been proposed.

"Antibiotic safety and possible side effects" will contain general information on how to safely use antibiotics with information regarding their potential side effects. This is generally useful information for the public, and should they be prescribed DP, will help them properly use them at home.

"Op-Eds and Press Outreach" will house those written materials discussing the conflicting evidence on DP for a lay audience.

"For healthcare providers" section

This section will contain four pages specific to informing healthcare providers on DP. The "Academic Resource Library" will house peer-reviewed literature detailing the "conflicting evidence" on DP efficacy and the risks of "patient-led" antibiotic initiation.

The "CMPA Legal Guidance" page will contain clear breakdowns of liability concerns developed in consultation with the Canadian Medical Protective Association.

The "Diagnostic confidence quiz" page has an interactive module for physicians to educate themselves on delayed antibiotic prescriptions while earning CME credits. This offers an

incentive for physicians to educate themselves on DP.

The "The Diagnostic Map" page is a tool for physicians to find federally subsidized Point of Care (POC) testing facilities in their provinces. We also have the "National AMR Fellowship" page that describes a federally funded fellowship for medical students, residents, and incoming health professionals to research and promote alternative stewardship strategies that do not involve DP. These opportunities are in line with option C where we recommend supporting alternative AMR solutions.

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