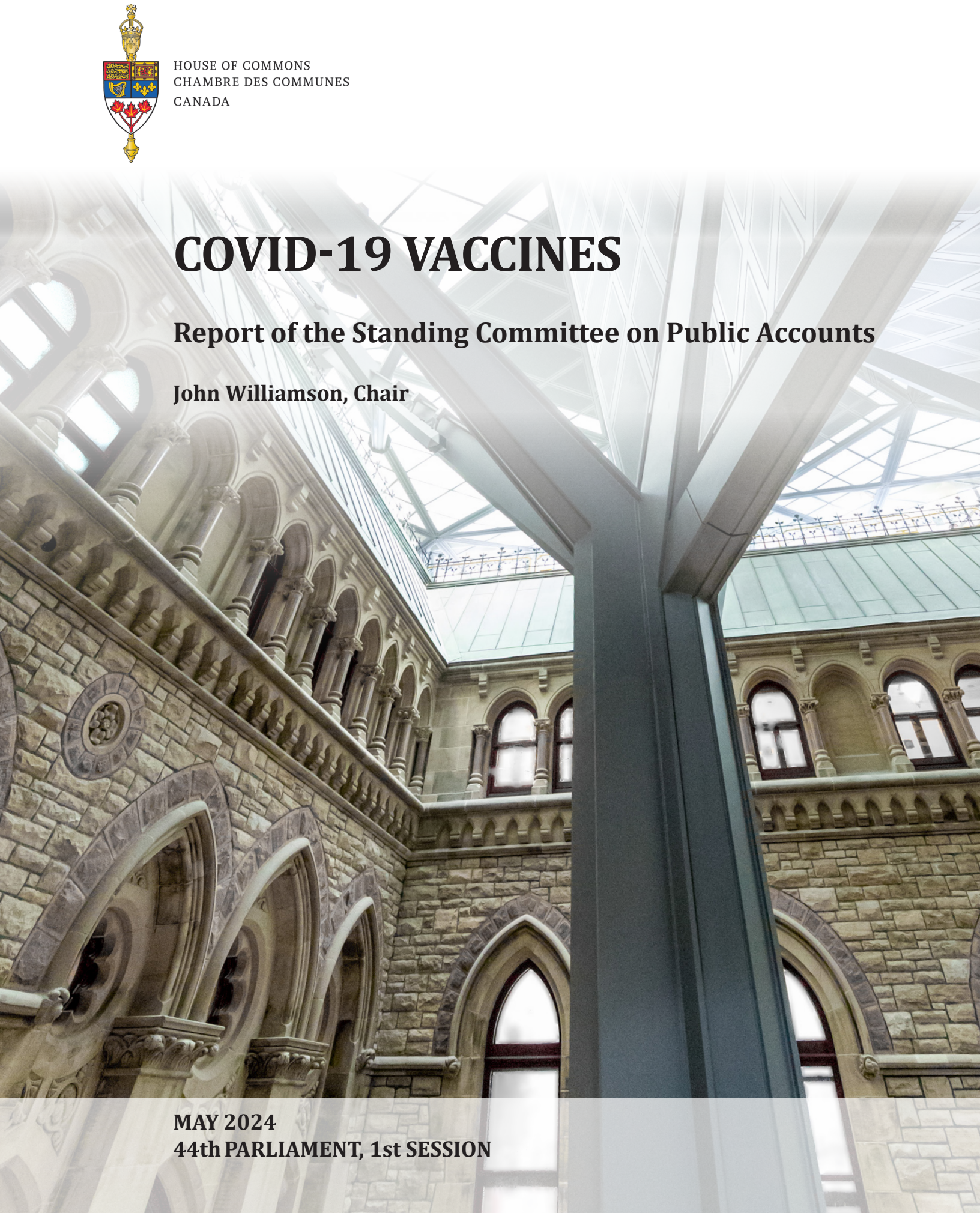

HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

COVID-19 VACCINES

Report of the Standing Committee on Public Accounts

John Williamson, Chair

MAY 2024
44th PARLIAMENT, 1st SESSION

COVID-19 VACCINES

Report of the Standing Committee on Public Accounts

John Williamson
Chair

MAY 2024

44th PARLIAMENT, 1st SESSION

NOTICE TO READER

Reports from committees presented to the House of Commons

Presenting a report to the House is the way a committee makes public its findings and recommendations on a particular topic. Substantive reports on a subject-matter study usually contain a synopsis of the testimony heard, the recommendations made by the committee, as well as the reasons for those recommendations.

STANDING COMMITTEE ON PUBLIC ACCOUNTS

CHAIR

John Williamson

VICE-CHAIRS

Jean Yip

Nathalie Sinclair-Desgagné

MEMBERS

Valerie Bradford

Blake Desjarlais

Iqra Khalid

John Nater

Brenda Shanahan

Francesco Sorbara

Jake Stewart

Arnold Viersen

OTHER MEMBERS OF PARLIAMENT WHO PARTICIPATED

Kelly Block

Kody Blois

Larry Brock

Shaun Chen

Lena Metlege Diab

Han Dong

Francis Drouin

Stephen Ellis

Andy Fillmore

Peter Fragiskatos

Michelle Rempel Garner

Garnett Genuis

Anthony Housefather

Michael Kram

Damien C. Kurek
Kelly McCauley
Eric Melillo
Rick Perkins
Yves Perron
Marinder Sidhu
Cathay Wagantall

CLERKS OF THE COMMITTEE

Hilary Smyth
Cédric Taquet

LIBRARY OF PARLIAMENT

Research and Education

André Léonard, Analyst
Dillan Theckedath, Analyst

THE STANDING COMMITTEE ON PUBLIC ACCOUNTS

has the honour to present its

FORTIETH REPORT

Pursuant to its mandate under Standing Order 108(3)(g), the committee has studied Report 9, COVID-19 Vaccines, of the 2022 Reports 9 and 10 of the Auditor General of Canada and has agreed to report the following:

HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

COVID-19 VACCINES

KEY FINDINGS OF THE AUDITOR GENERAL OF CANADA

- Public Services and Procurement Canada (PSPC) secured a sufficient supply of vaccine doses for Canada.
- Health Canada expedited the authorization of vaccines.
- The Public Health Agency of Canada (PHAC or the agency) equitably allocated vaccine doses to provinces and territories and distributed requested doses in a timely way.
- PHAC was unsuccessful in its efforts to minimize vaccine wastage.
- Despite data sharing issues, PHAC and Health Canada responded to vaccine surveillance data.[1]

SUMMARY OF THE COMMITTEE'S RECOMMENDATIONS AND TIMELINES

Table 1—Summary of Committee recommendations and timelines

Recommendation	Recommended Measure	Timeline
Recommendation 1	The Public Health Agency of Canada should present the House of Commons Standing Committee on Public Accounts with a report outlining its progress regarding A) its overall management of the COVID-19 vaccine supply; B) its efforts to minimize vaccine wastage; and C) the number of doses donated, to whom, and an explanation for why some were not. A final report should also be presented.	30 September 2024 and 28 February 2025

1 Office of the Auditor General of Canada (OAG), COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, At a glance and para. 9.27.

Recommendation	Recommended Measure	Timeline
Recommendation 2	PHAC should present the Committee with a report about the status of VaccineConnect.	30 September 2024
Recommendation 3	The Government of Canda should follow World Health Organization guidance that countries provide detailed, case-level data on COVID-19 adverse events following immunization.	n/a
Recommendation 4	The Government of Canada should present the Committee with a comprehensive report about the status of the Pan-Canadian Health Data Strategy.	30 September 2024
Recommendation 5	The Government of Canada should present the Committee with a comprehensive report about the status of the updated, cloud-based Canadian Adverse Events Following Immunization Surveillance System.	30 September 2024
Recommendation 6	The Government of Canada should ensure a system of improved communications and consultation between any advisory group (e.g., The COVID-19 Vaccine Task Force) and PHAC, Health Canada, Public Services and Procurement Canada and any other federal entity involved in the management of vaccines, with a clearer and publicly divulged role assigned to each entity.	n/a
Recommendation 7	The Government of Canada should ensure that PSPC is more diligent in its challenge function role with regard to how the amounts and delivery of approved vaccines are managed.	n/a
Recommendation 8	The Government of Canada should ensure that all contracts procured during a pandemic or other public health crisis allow for flexibility, while ensuring accountability and value for money.	n/a

Recommendation	Recommended Measure	Timeline
Recommendation 9	The Government of Canada should ensure that responsible federal entities maintain a comprehensive understanding of the international marketplace for vaccines.	n/a
Recommendation 10	The Government of Canada should require all responsible federal entities to undertake a comprehensive review of their preparedness for future pandemics, including a comparative analysis of OECD countries and report its findings to the Committee.	31 January 2025
Recommendation 11	The Government of Canada should 1) undertake a review of Canada's domestic vaccine manufacturing capacity; 2) examine how it can improve upon its current suite of policies and programs to boost domestic capacity; and 3) provide a report to the Committee.	31 January 2025

BACKGROUND

According to the Office of the Auditor General of Canada (OAG), the rapidly evolving nature of the COVID-19 pandemic and the "high demand across the world for vaccines put pressure on the federal government to act quickly on COVID-19 vaccine approval, procurement, distribution, and surveillance."[2] To that end, "Canada's COVID-19 Immunization Plan: Saving Lives and Livelihoods, established by the federal, provincial, and territorial governments in December 2020, has the goal of enabling as many Canadians as possible to be immunized against COVID-19 as quickly as possible while ensuring that high-risk populations are prioritized."[3]

On 27 July 2021, the Government of Canada announced that it had received more than 66 million doses of COVID-19 vaccines, enough to fully vaccinate every person in Canada who was eligible at that time (people aged 12 years and older). As such, the

2 OAG, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, para. 9.1.

3 Ibid., para. 9.2.

"federal government's target to provide vaccines to those who wanted them by Fall 2021 was met."[4]

Additionally, according to the OAG's assessment, "the Government of Canada had spent approximately $5 billion on vaccines for the 169 million doses paid for between December 2020 and May 2022."[5]

In Canada, COVID-19 vaccine approval and immunization rollout began as follows:

- December 2020 for adults;
- May 2021 for adolescents;
- November 2021 for children aged 5 years to 11 years; and
- July 2022 for children aged 6 months to 5 years.[6]

In Canada, public health is a shared responsibility between the federal government, the provinces, and the territories, with vaccine distribution logistics usually under provincial and territorial responsibility. However, Canada's immunization response to COVID-19 involved collaboration between all levels of government, "Indigenous organizations, municipal governments, public health and logistical experts, vaccine companies, and Canadians."[7] Table 2 outlines various roles and responsibilities pertaining to the approval, acquisition and distribution of COVID-19 vaccines.

4 Ibid., para. 9.25.

5 Ibid., para. 9.26.

6 Ibid., para. 9.3.

7 Ibid., para. 9.4.

Table 2—Roles and Responsibilities regarding COVID-19 Vaccines

PHAC	Lead federal organization facilitating national approaches to public health in cooperation with provincial and territorial health departments or agencies. In relation to COVID-19 vaccines, the agency is responsible for identifying vaccine needs, paying vaccine companies, allocating and distributing vaccines to the provinces and territories, and conducting surveillance of vaccines.
Health Canada	Responsible for authorizing vaccines before they can be made available in Canada. Before authorizing a particular vaccine, the department evaluates whether the vaccine's benefits outweigh the potential risks. The department also continues to monitor the safety and effectiveness of vaccines after they are released for use.
PSPC	Procures goods and services for federal departments and agencies. It was responsible for leading negotiations with COVID-19 vaccine companies and putting in place agreements with the companies on behalf of PHAC.
Provincial and territorial governments	Responsible for prioritizing vaccine distribution by population and managing initial and subsequent doses within their jurisdictions, guided by advice provided by the federal government. They are also responsible for requesting the quantity of doses and types of vaccines needed to immunize their populations and providing the federal government with coverage and safety information on vaccine use within these populations.

Source: Table prepared by the Library of Parliament with information from Office of the Auditor General of Canada, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, paras. 9.4–9.8.

In 2022, the OAG released a performance audit that determined whether PSPC provided adequate procurement support to secure COVID-19 vaccines; whether PHAC and Health Canada efficiently provided access to COVID-19 vaccines; and whether PHAC and Health Canada's surveillance of COVID-19 vaccines was effective and timely.[8]

On 6 February 2023, the House of Commons Standing Committee on Public Accounts (the Committee) held a hearing on this audit, with the following in attendance:

- OAG—Karen Hogan, Auditor General of Canada; Susan Gomez, Principal; and Nadine Cormier, Director

8 Ibid., para. 9.9.

- PHAC—Dr. Harpreet S. Kochhar, President; Luc Gagnon, Assistant Deputy Minister and Chief Digital Transformation Officer, Digital Transformation Branch; Stephen Bent, Vice-President, COVID-19 Vaccine Rollout Task Force

- Health Canada—Dr. Stephen Lucas, Deputy Minister; Celia Lourenco, Acting Associate Assistant Deputy Minister, Health Products and Food Branch; and Supriya Sharma, Chief Medical Advisor and Senior Medical Advisor, Health Products and Food Branch

- PSPC—Arianne Reza, Associate Deputy Minister; Michael Mills, Assistant Deputy Minister, Procurement Branch[9]

Additionally, there were two other hearings for this study: a public hearing on 23 March 2023 with representatives of various vaccine manufacturers that had entered into Advance Purchase Agreements with the Government of Canada; and an in camera hearing on 1 May 2023 with officials from PSPC regarding these Advance Purchase Agreements (APAs). The discussions stemming from these two specific meetings will be presented later in this report.

9 House of Commons Standing Committee on Public Accounts (PACP), *Evidence*, 1st Session, 44th Parliament, 6 February 2023, Meeting No. 48.

DEFINITIONS

The following definitions are used in this report:

Table 3—Definitions

Coronavirus disease (COVID-19)	The disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).
Advance purchase agreements	Purchase agreements that have the obligations of a contract, while being structured to allow flexibility given uncertainties around the development of new vaccines. Essentially, they allow for the purchase of something that does not yet exist.
Equitable allocation and distribution	The principle that the overall basis for equitable allocation and distribution of vaccines is on a per capita basis. This should be informed by considering the number of individuals in high-risk populations identified by Canada's National Advisory Committee on Immunization.
Gender-based analysis plus (GBA+)	An analytical process that provides a rigorous method for the assessment of systemic inequalities, as well as a means to assess how diverse groups of women, men, and gender-diverse people may experience policies, programs, and initiatives. The "plus" acknowledges that gender-based analysis goes beyond biological (sex) and socio-cultural (gender) differences and considers many other identity factors, such as race, ethnicity, religion, age, and mental or physical ability.
Vaccine safety signal	Any information that arises from one or multiple sources and suggests a new potentially causal association, or a new aspect of a known adverse reaction (increased severity and/or increased frequency), between immunization and an event or set of related events, and is judged to be of sufficient concern to justify verification and remedial action if appropriate.
Adverse event following immunization	Any untoward medical occurrence that follows immunization and that does not necessarily have a causal relationship with the usage of the vaccine. The adverse event may be any unfavourable or unintended sign, abnormal laboratory finding, symptom, or disease.

Source: Table prepared by the Library of Parliament with information from Office of the Auditor General of Canada, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, Definitions.

FINDINGS AND RECOMMENDATIONS

PHAC Was Unsuccessful in Its Efforts to Minimize Vaccine Wastage

PHAC knew that the potential existed for advance purchase agreements to result in excess doses and identified this as a risk in the summer of 2020. To mitigate this risk, it expected to donate excess doses to other countries and to work with vaccine companies to manage the vaccine supply.[10]

As at 31 May 2022, six out of seven potential vaccines had been authorized for use in Canada. And, with each authorized vaccine came an obligation to purchase a specific quantity of doses and, for all but one agreement, options to purchase additional doses. This resulted in an oversupply of vaccine doses.[11]

The agency purchased optional doses from Pfizer and Moderna, further contributing to the oversupply, which led to vaccine wastage as some of the doses expired before they could be used or donated. Agency officials explained that, due to the evolving nature of the pandemic, "there was a need to keep buying optional doses, to expand coverage, to accelerate deliveries, and to address waning immunity and changes in vaccine administration guidelines, such as shortened booster intervals and the National Advisory Committee on Immunization advice recommending the use of a certain vaccine type."[12]

From December 2020 to the end of May 2022, there were about 169 million vaccine doses paid for, about 124.9 million of which were delivered to Canada. (PHAC reported that the majority of these doses were administered to individuals in Canada.)[13] Subsequently, there were close to 32.5 million doses in federal, provincial, and territorial inventories. By the end of the audit period, the majority of them still had a shelf life and could be used in booster campaigns or donated; however, most would expire by the end of 2022, if unused. The OAG estimated that the 32.5 million doses in inventory at the end of May 2022 were worth about $1 billion using the average cost-per-dose estimated using publicly available and unclassified information.[14]

Lastly, the agency was not able to properly track vaccine surplus and wastage once vaccines were delivered to the provinces and territories, because of a lack of data-

10 OAG, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, para. 9.51.

11 Ibid., para. 9.52.

12 Ibid., para. 9.53.

13 Ibid., para. 9.54.

14 Ibid.

sharing agreements with provinces and territories. This meant that PHAC relied upon voluntary reporting by these other governments. Furthermore, this reduced the agency's ability to predict supply needs and plan for donations.[15]

Consequently, the OAG recommended that to "minimize further wastage, the Public Health Agency of Canada should draw on the lessons learned from its management of the COVID-19 vaccine supply and work with other implicated federal organizations and stakeholders to adjust its management of COVID-19 vaccine surpluses."[16]

In its Management Response and Action Plan, PHAC stated its agreement with the recommendation and added that it will review lessons learned and collaborate with other departments and stakeholders to optimize COVID-19 vaccine supply management and reduce COVID-19 vaccine surpluses, wastage throughout the duration of the contracts. This will also help inform vaccine supply planning for future pandemics.[17]

The agency also committed to the following milestones:

- Work with provinces and territories on demand planning and forecasting for COVID-19 vaccine supply leveraging the various governance and advisory committees within the Pan-Canadian Public Health Network (ongoing);

- Instruct PSPC, as contracting authority, to work with vaccine suppliers to adjust contractual commitments and delivery schedules, where possible (ongoing);

- Work with Global Affairs Canada and COVAX to make surplus doses available for donation to support global health and vaccine equity objectives (ongoing);

- Continue to evaluate internal processes, identify lessons learned and make adjustments to the approach in order to optimize vaccine supply management (ongoing); and

15 Ibid., para. 9.55.

16 Ibid., para. 9.57.

17 Public Health Agency of Canada (PHAC), Management Response and Action Plan, p. 1.

- Draft a “lessons learned” document on PHAC public health response, including vaccine procurement (December 2024).[18]

At the hearing of 6 February 2023, members expressed concern about the volume of expired doses that could not be donated and thus were wasted. Harpreet Kochhar, President, PHAC, provided the following explanation:

> I'll attempt to clarify that wastage is inevitable in any immunization program. When we initially started the vaccination campaign, the unavoidable wastage was around 3%. Basically, when you open the vial, you have to use it within a 24-hour time period, or it cannot be stored, etc.
>
> As we moved further into our vaccination campaign, demand decreased. There were some other factors that meant that, from a wastage perspective, there was increased waste. In reality, what happened was that there were times when we had vaccines that were very complex, early in the rollout. As I said, you have to thaw them and you have a limited time period in which to use them. Also, as we moved on to other vaccines, stability data became more…such that we were able to say, “This vaccine could be used in nine months.” For example, Health Canada authorized an increase in the shelf life based on what was presented to them, so we continued to plan according to the nine-month….
>
> There were multiple factors that happened: cold chain excursions, puncturing of the vial, or inability to store at a particular temperature. Those were multiple factors that contributed to wastage, which is unavoidable.[19]

In response to a question about the specific example of why only 8 million of 21.7 million doses were donated, with regard to what became of the remaining 13 million, Stephen Bent, Vice-President, COVID-19 Vaccine Rollout Task Force, PHAC, responded as follows:

> [It’s] fundamentally important to note—that these doses were put on offer. There were countries that were not interested in taking them. It's not the fact that they were not accessible to the countries, it was the fact that COVAX could not find suitable homes for them. That was a difference from the early part of the pandemic, when there was a lot of demand and a scarcity of supply.[20]

Therefore, the Committee recommends:

18 Ibid.

19 PACP, *Evidence*, 1st Session, 44th Parliament, 6 February 2023, Meeting No. 48, 1215.

20 Ibid., 1255.

Recommendation 1

That, by 30 September 2024, the Public Health Agency of Canada present the House of Commons Standing Committee on Public Accounts with a report outlining its progress regarding A) its overall management of the COVID-19 vaccine supply; B) its efforts to minimize vaccine wastage; and C) the number of doses donated, to whom, and an explanation for why some were not. A final report should also be presented by 28 February 2025.

Delays in Implementing a Vaccine Management Information Technology System

The OAG's 2021 audit of pandemic preparedness, surveillance, and border control measures identified long-standing shortcomings regarding the PHAC's information technology (IT) infrastructure used for the storage, processing, and analysis of health surveillance data from provinces and territories. In fact, for over 10 years before the COVID-19 pandemic, the agency had also identified gaps in its existing IT infrastructure but had not implemented solutions to improve it.[21]

Given this deficiency, during the pandemic, PHAC needed to rapidly implement a system to support vaccine management. In January 2021, Deloitte was contracted to develop a national vaccine management IT system (now known as "VaccineConnect"). Using data from PHAC, the provinces, and territories, the system was expected to "provide timely information on vaccine distribution, coverage, and safety. Some capabilities were to be in place by February 2021 to support order processing, supply chain visibility, inventory tracking, and vaccine coverage tracking."[22]

Although VaccineConnect was partially functional by June 2021, PHAC delayed the development of key system capabilities that would have helped with decision-making on wastage (e.g., tracking of expiry dates). The contract's total estimated cost was $59.1 million; $37.4 million had been spent on VaccineConnect by the end of the audit period.[23]

Later, key capabilities of the new system were delayed by the agency and were not ready in February 2021 as planned. PHAC developed workaround procedures and manually tracked expiry dates, wastage, and all the data from the start of the vaccination rollout to

21 OAG, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, para. 9.58.

22 Ibid., para. 9.59.

23 Ibid., para. 9.60.

June 2021 in spreadsheets. However, the OAG found that, although some components of the system were functional in June 2021, the agency, provinces, and territories were not using them all, and PHAC still tracking data using spreadsheets.[24]

PHAC had limited procedures in place to verify data quality for both its manual tracking and for VaccineConnect. This resulted in gaps in the inventory management data provided and a risk of error. For example, the OAG found that 150,000 doses appeared to have been delivered after they had expired, when in fact, they had not yet expired.

Consequently, the OAG recommended that the Public Health Agency of Canada should complete implementing VaccineConnect. This should include data quality procedures.[25]

In its action plan, the agency stated its agreement with the recommendation and added that it is actively working to advance the implementation and data quality procedures of the three modules of VaccineConnect: the Intelligent Supply Chain (ISC); the Immunization Information System (IIS); and the Immunization Program Management (IPM). PHAC will continue to actively engage jurisdictional partners on identification of service gaps and emerging needs in order to support future integration of the systems.[26]

The agency also added the following milestones:

- The 2.0 iteration of the ISC module was released in the Fall of 2022. The release has provided a streamlined user experience while providing business owners with additional reporting capabilities. Additional prioritized enhancements including wastage and inventory data collection, analysis, and interpretation for management of current and future demand and supply will be completed by 31 March 2023.

- IIS is evolving to a renewed foundation for vaccine data transfers of vaccine surveillance data between provinces, territories and PHAC. The Canadian Adverse Events Following Immunization Surveillance System (CAEFISS) is scheduled to be replaced by Cloud CAEFISS (a component of the IIS), with a planned Minimum Viable Product (MVP) targeted for early 2023 (Q4 2022/2023). This release will include user-requested capabilities for automated inter-jurisdictional interoperability and new vaccine surveillance monitoring tools. Subsequent releases, MVP+2 and

24 Ibid., para. 9.61.

25 Ibid., para. 9.63.

26 PHAC, Management Response and Action Plan, p. 2.

MVP+3, including additional functionality are planned for Q1 2023 and Q2 2023 respectively, depending on securing further funding.

- PHAC will complete parallel validation of the Cloud CAEFISS system and data quality procedures to inform the decision regarding timing of full transition from the existing CAEFISS to Cloud CAEFISS (Completion date: 30 November 2023).[27]

At the hearing of 6 February 2023, in response to a question about the outstanding $21.7 million of the contract to develop VaccineConnect (i.e., the difference between the total cost of $59.1 million and $37.4 already paid), Harpreet Kochhar provided the following explanation:

> The contract was with a contracting firm that was providing those services to us. The rest of the money was actually spent on making sure we had the infrastructure available for it to work.[28]

Dr. Kochhar also confirmed that the agency is "actively working to fully implement VaccineConnect" and as of November 2022, "the system has a newer module for tracking orders and inventory at the central level to support supply chain management."[29]

Therefore, the Committee recommends:

Recommendation 2

That, by 30 September 2024, the Public Health Agency of Canada present the House of Commons Standing Committee on Public Accounts with a report about the status of VaccineConnect.

Data-Sharing Problems Remain

The OAG found that some of the problems regarding the sharing of surveillance data that had been raised in several previous audits remained; e.g., the 2021 audit of pandemic preparedness, surveillance, and border control measures. In the current audit, those long-standing issues affected the effectiveness of the agency's sharing of detailed case-level safety surveillance data with Health Canada, the World Health Organization,

27 Ibid.

28 PACP, *Evidence*, 1st Session, 44th Parliament, 6 February 2023, Meeting No. 48, 1125.

29 Ibid., 1110.

and vaccine companies. These issues also affected PHAC's ability to collect disaggregated vaccine coverage data on population characteristics (e.g., ethnicity).[30]

According to PHAC, Canada is the only G7 country that does not follow World Health Organization guidance that countries provide detailed, case-level data on COVID-19 adverse events following immunization. Instead, the agency shared summary-level data.[31]

Therefore, the Committee recommends:

Recommendation 3—on following WHO guidance

That the Government of Canda follow World Health Organization guidance that countries provide detailed, case-level data on COVID-19 adverse events following immunization.

Additionally, PHAC established the Canadian COVID-19 Vaccination Coverage Surveillance System at the start of the pandemic. It initially manually compiled data submitted voluntarily by provinces and territories, but by June 2021, the agency was processing this data electronically. However, a review of the data showed that some population characteristics (e.g., ethnicity or Indigenous status) were not included, because provinces and territories do not always collect or share that information. According to the OAG, without this type of disaggregated data, PHAC could have less information to target programs or communications to groups that may be at higher risk.[32]

Since October 2020, PHAC and Health Canada have led work with partners, such as provinces, territories, and Indigenous organizations, on the Pan-Canadian Health Data Strategy. Its aim is to advance efforts to improve health data collection, sharing, and usage. However, "in a 2021 report, the Chief Public Health Officer of Canada noted that the strategy was not expected to be implemented prior to 2030 and encouraged the acceleration of its implementation."[33]

Consequently, the OAG recommended that given "the urgency and importance of improving timely access to quality data among health partners, the Public Health Agency

30 OAG, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, para. 9.72.

31 Ibid., para. 9.74.

32 Ibid., para. 9.77.

33 Ibid., para. 9.78.

of Canada and Health Canada should expedite their work with provinces and territories to implement the Pan-Canadian Health Data Strategy."[34]

In its action plan, PHAC stated that the Agency and Health Canada have been working with provinces and territories to co-develop the Strategy since December 2020 and that the Strategy "will address the long-standing issues affecting Canada's ability to collect, share, access and use health data."[35] It also provided the following:

> Through the Strategy's series of commitments and proposed actions for improving Canada's health data foundation, it will enable better health outcomes and public health responses for individuals, communities, and Canadian society through learning health systems.
>
> Implementation will take place over several years, guided by aligned policies and frameworks with an integrated workplan. A review is planned for every three years. The pace of implementation will respect individual jurisdictions' capacity, readiness, and seek opportunities to accelerate implementation through collaboration and re-use of expertise.[36]

Health Canada's action plan also stated that it will continue to collaborate with PHAC, along with the provinces and territories, to advance the development and implementation of the Strategy, and committed to the following milestones (by the end of 2023):

- Ministers endorse the Pan-Canadian Health Data Strategy as a long-term vision for better health data management guided by the Health Data Charter.
- Ministers affirm support for interoperability standards to enable data access and exchange.
- Ministers agree to Common Aims for supporting jurisdictional approaches to health data access and exchange, including through policy or legislative approaches.
- Federal, Provincial, and Territorial officials confirm governance, priorities and implementation plans.[37]

---

34 Ibid., para. 9.79.

35 PHAC, Management Response and Action Plan, p. 3.

36 Ibid.

37 Health Canada, Management Response and Action Plan, p. 1.

At the hearing of 6 February 2023, Karen Hogan, Auditor General of Canada, explained some of the challenges of managing vaccine supply with the provinces and territories:

> That's one issue we were trying to raise. It's that the federal government actually loses some visibility in what happens to the doses once they've been delivered to the provinces and territories.
>
> VaccineConnect was suppose[d] to help with creating some awareness of where those doses were used, administered or expired. The long-standing issue of not having data-sharing agreements is that it just doesn't allow the provinces and territories to let the federal government know where the information is, who has it and how to share it.
>
> Those have been long-standing, where an agreement needs to be in place, back to 1999.[38]

In response to a question about the current status of the development of the Strategy, Stephen Lucas, Deputy Minister, Health Canada, provided the following:

> During the course of the pandemic, the Public Health Agency and Health Canada worked extensively with provinces and territories to support and facilitate data information sharing, including working with them towards common interoperability standards so that data systems can communicate with each other in the country.
>
> We have been working with provinces, territories and other stakeholders, informed by advice from an expert advisory group chaired by Dr. Vivek Goel, on developing a pan-Canadian health data strategy to facilitate the collection, sharing, use and public reporting of health data.[39]

Dr. Lucas further added that this work has continued with health officials, and elements of the strategy were to be discussed at the First Ministers meeting of 7 February 2023.[40]

Therefore, the Committee recommends:

Recommendation 4—on the Pan-Canadian Health Data Strategy

That, by 30 September 2024, the Government of Canada present the House of Commons Standing Committee on Public Accounts with a comprehensive report about the status of the Pan-Canadian Health Data Strategy.

38 PACP, *Evidence*, 1st Session, 44th Parliament, 6 February 2023, Meeting No. 48, 1145.

39 Ibid., 1130.

40 Ibid. Also, Office of the Prime Minister of Canada, Prime Minister's itinerary for Tuesday, February 7, 2023.

The OAG also recommended that the "Public Health Agency of Canada, in collaboration with Health Canada and the provinces and territories, should resolve barriers to

- better share vaccine surveillance information among themselves;
- provide access to the Canadian Adverse Events Following Immunization Surveillance System to Health Canada; and
- provide surveillance data, including case-level details as needed, to the World Health Organization and vaccine companies in a timely manner."[41]

In its action plan, PHAC acknowledged that information sharing is an important component of Canada's vaccine safety surveillance system, which is a collaboration between provinces and territories, the Agency, Health Canada, and vaccine manufacturers, and will continue to advance better information-sharing with its partners.[42] It also provided several milestones (refer to Annex A).

At the hearing of 6 February 2023, Stephen Lucas reiterated Health Canada's agreement with the recommendation and added that it will continue to collaborate with PHAC, the provinces and territories on the pan-Canadian health data strategy, and supports ongoing work with them to provide greater access to the Canadian adverse events following immunization surveillance system.[43]

Therefore, the Committee recommends:

Recommendation 5—on the Canadian Adverse Events Following Immunization Surveillance System

That, by 30 September 2024, the Government of Canada present the House of Commons Standing Committee on Public Accounts with a comprehensive report about the status of the updated, cloud-based Canadian Adverse Events Following Immunization Surveillance System.

41 OAG, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, para. 9.80.

42 PHAC, Management Response and Action Plan, p. 3.

43 PACP, *Evidence*, 1st Session, 44th Parliament, 6 February 2023, Meeting No. 48, 1115.

Additional Matters Pertaining to CanSino, Medicago, and Pfizer

CanSino

At the hearing of 6 February 2023, members asked several questions pertaining to the government's efforts to secure a vaccine with CanSino. However, witnesses from PSPC and Health Canada responded by stating that no APA was negotiated with them and that their organizations were unable to respond to those questions; however, both suggested that Innovation, Science and Economic Development Canada might be able to do so.[44]

In response to a further question about an agreement between CanSino and the National Research Council of Canada, and possible reasons for which it was not included in the audit, Karen Hogan provided the following:

> We did speak to it at the beginning of the audit, when we were scoping, but as I mentioned, it wasn't a contract that resulted in an advance purchase agreement for vaccines for the country, so it wasn't included in the scope of our audit.[45]

Medicago

There were also questions pertaining to Canadian-based COVID-19 vaccine manufacturer Medicago (maker of Covifenz), and its current role, capacities, and obligations, given that its parent company, Mitsubishi Chemical Group recently announced plans to wind down its operations. For example, at the hearing of 6 February 2023, in response to a question about an order for 20 million doses of Covifenz, Arianne Reza, Associate Deputy Minister, PSPC, provided the following:

> [With] the recent news from Mitsubishi and Medicago, coupled with the demand and our constant review of contracts, there are active negotiations going on right now looking at the 20 million doses and what can be done to adjust it.[46]

Additionally, when asked about why the approval process was longer for Covifenz than for other vaccines, Celia Lourenco, Acting Associate Assistant Deputy Minister, Health Canada, provided the following:

> For the Pfizer and Moderna vaccines, it took three months for us to evaluate all the data and approve the vaccines.

---

44 Ibid., 1125 and 1130.

45 Ibid., 1150.

46 Ibid., 1210.

> It took much longer for the Medicago vaccine because the company was very late in providing all the data. The evaluation began in April 2021. We did not receive the data for phase 3 until December 2021, and we approved the Medicago vaccine in February 2022.[47]

Following the hearing of 6 February 2023, the Committee received supplemental information from federal organizations; selected specific information about Medicago can be found in Appendices B and C.

Lastly, during a hearing held with representatives of the pharmaceutical industry on 23 March 2023, when asked about their APA for 20 million doses that were never produced, Toshifumi Tada, President and Chief Executive Officer, Medicago Inc., provided the following:

> Although we got an approval from Health Canada in February of last year and were preparing for the launch of the product, we faced unexpected quality problems. While we were fixing these, market needs for the vaccine evolved toward bivalent vaccines. Our vaccine is monovalent. Therefore, we just…. The approved vaccine was irrelevant, because of the market evolution.[48]

Pfizer

When asked why Canada only signed an APA with Pfizer in October 2020 but the United States signed a contract in July of that year, Fabien Paquet, Vaccines Lead, mRNA Vaccines and Antiviral Portfolio, Pfizer Canada, provided the following:

> The actual first agreement that was signed and communicated was in August of 2020. That was the first agreement that Pfizer signed. That was an early agreement to actually establish a basis for a more detailed agreement later on. That was basically a couple of weeks after the U.S. and among the first in the world after the U.S.[49]

When asked why Pfizer's vaccine rollout in Canada lagged behind that of the U.S., Mr. Paquet explained that "in 2021 in Canada, Pfizer alone delivered over 55 million doses, which is way above what was initially in the contract. In other words, Pfizer has been able to deliver more vaccines faster in Canada than what was initially planned in the contract."[50]

---

47 Ibid., 1230.

48 PACP, *Evidence*, 1st Session, 44th Parliament, 23 March 2023, Meeting No. 54, 1645.

49 Ibid., 1845.

50 Ibid., 1850.

ADDITIONAL CONSIDERATIONS

On 1 May 2023, the Committee held an in camera hearing with officials from PSPC to review the unredacted COVID-19 vaccine contracts (i.e., the APAs). This section includes information about the COVAX program; it also includes other matters that were discussed at that hearing for which recommendations have been made.

The Committee wishes to emphasize that the extraordinary measure of including in camera testimony is due to the nature of the COVID-19 pandemic. Some members believe that relevant testimony heard in camera was deemed critically important to this study, and is within the Committee's mandate.

The COVAX Program

According to the World Health Organization, COVAX "is the vaccines pillar of the Access to COVID-19 Tools (ACT) Accelerator. The ACT Accelerator is a ground-breaking global collaboration to accelerate the development, production, and equitable access to COVID-19 tests, treatments, and vaccines."[51]

In response to a question about Canada's participation in the COVAX program, an official from PSPC, provided the following:

> In September 2020, we signed an agreement with COVAX and provided an upfront payment of U.S. $53 million, which would allow us access of up to 15 million doses. We ended up drawing five million doses under that agreement. Of that, we received 900,000 doses in Canada and donated the rest.[52]

When asked if having separate negotiations with seven manufacturers (i.e., Moderna, Novavax, Medicago, Pfizer-BioNTech, Sanofi and GlaxoSmithKline, Johnson & Johnson (Janssen), and AstraZeneca) was contrary to the spirit of the COVAX program, that same official responded as follows:

> I wouldn't characterize it as being signing side agreements. We had a strategy to acquire a portfolio vaccines of the most promising candidates should they be approved, and get early access for Canadians. We didn't see them as side agreements; we saw them as part and parcel of the strategy.[53]

---

51 World Health Organization, COVAX.

52 PACP, *BLUES*, 1st Session, 44th Parliament, 23 March 2023, Meeting No. 61, 1120.

53 Ibid.

Lastly, with regard to Canada's participation the program's donation process, that same official provided the following:

> I believe throughout the pandemic we had been trying to support donations. It's been a challenging space. There's more supply globally and more production globally then there is uptake.[54]

Recommendations

In view of the many matters discussed during the in camera hearing of 1 May 2023, the Committee makes the following recommendations to help the Government of Canada better prepare for future pandemics with regard to the supply of vaccines:

A. Improved Communication and Consultation Across the Government

Discussions were held on the necessity to have a clearer understanding of the role of each entity involved in the federal decision-making process of vaccine procurement. For example, the official from PSPC, provided the following:

> I would submit that the task force would make recommendations. Those recommendations would go [PHAC]. The president of [PHAC] would have made a decision based on the advice of the task force, their own officials, and probably advice from Health Canada […]
>
> I would agree that in terms of taking lessons learned it's important to look comprehensively at the role of the task force, their responsibility, their mandate, and their impact on the decisions. I would agree that's a key area to look at.[55]

Therefore, the Committee recommends:

Recommendation 6—on improved co-ordination across government

That the Government of Canada ensure a system of improved communications and consultation between any advisory group (e.g., the COVID-19 Vaccine Task Force) and the Public Health Agency of Canada, Health Canada, Public Services and Procurement Canada and any other federal entity involved in the management of vaccines, with a clearer and publicly divulged role assigned to each entity.

---

54 Ibid., 1220.

55 PACP, *Blues*, 1st Session, 44th Parliament, 1 and 4 May 2023, Meeting No. 61, 1750/8750.

B. Procurement Challenge Function

That a large amount of purchased vaccines expired before they could be used or donated raised points about how even with large quantities of doses on hand, more doses were being ordered. Some members felt that if the contracting agent, in this case, PSPC, had more of a say in the process, there may be a chance to better communicate about what has been procured thus far, what has been used, and what the provinces are saying with regard to their supply; this may help reduce excess supply of vaccines that may go unused.[56]

Therefore, the Committee recommends:

Recommendation 7—on the procurement challenge function

That the Government of Canada ensure that Public Services and Procurement Canada is more diligent in its challenge function role with regard to how the amounts and delivery of approved vaccines are managed.

C. Contract Flexibility

Points were raised regarding the structure of the APAs and to what extent Canada was obliged to purchase vaccines. These agreements specify the purchase of certain amounts at certain prices, at different stages of the pandemic—for example, re-supplying an existing vaccine or trying to obtain a newer version that targets variants, etc. Notwithstanding the challenging circumstances under which the government was procuring vaccines, some members felt that the pharmaceutical companies could have had the potential to take advantage of the situation.[57]

Although the witnesses from PSPC stated that the contracts and the companies did offer some degree of flexibility, the Committee nevertheless recommends the following:

Recommendation 8—on contract flexibility during a pandemic

That the Government of Canada ensure that all contracts procured during a pandemic or other public health crisis allow for flexibility, while ensuring accountability and value for money.

56 Ibid., 8730–8735.

57 Ibid., 8810–8815.

D. International Vaccine Marketplace

Some members voiced concerns about how Canada had to negotiate with vaccine producers in a global marketplace. In response to a question about why some companies were reluctant to enter into negotiations with Canada (e.g., AstraZeneca), the official from PSPC provided the following:

> [They] were reluctant because they were certainly focused on the United Kingdom where they were actually developing. Again, in the context of global competition, they were negotiating agreements with other countries, and looking also to participate in a global co-operative agreement for vaccines.
>
> Looking at those two things, we were competing not just in a negotiation with a company, but also in the context of their negotiations and commercial interests with other countries.[58]

In light of what was learned during this pandemic, especially regarding the challenges Canada faced in negotiating with vaccine manufacturers in a global context, the Committee recommends the following:

Recommendation 9—on knowing the international vaccine marketplace

That the Government of Canada ensure that responsible federal entities maintain a comprehensive understanding of the international marketplace for vaccines.

E. Pandemic Preparedness

The Committee heard that other countries had looked at what was learned from the pandemic and how they could be more prepared for the next one. For example, another official from PSPC provided the following:

> I know in the United States there was a major "Lessons Learned" report. It was not done officially by Congress, but by a number of think tanks. Those are the kinds of resources we like to make sure we're aware of and benefit from lessons learned elsewhere… and we're going to move ahead with our collective learning, including advancing the bio-manufacturing strategy and enhancing our readiness for the next time.[59]

Therefore, the Committee recommends:

58 Ibid., 1130.

59 Ibid., 1225.

Recommendation 10—on pandemic preparedness

That the Government of Canada require all responsible federal entities to undertake a comprehensive review of their preparedness for future pandemics, including a comparative analysis of OECD countries and report its findings to the House of Commons Standing Committee on Public Accounts by 31 January 2025.

F. Domestic Manufacturing and Research Funding

There were several points raised about how Canada did not have suitable domestic vaccine manufacturing capabilities to meet the COVID-19 pandemic. For example, in response to a question about federal investments in Medicago, the first official from PSPC provided the following:

> The investment in the manufacturing facility was for the future. We were hoping that some of the doses would get manufactured there. One of the lessons learned in the early parts of the pandemic was the need to have Canadian capacity. That investment was really driven by having capacity for the future, a bonus if it could actually produce some of the COVID doses.[60]

The second official later added that "the absence of a strong domestic manufacturing capacity in Canada influenced our bargaining position. It would have been a different playing field had we had major domestic manufacturing capacity."[61]

Therefore, the Committee recommends:

Recommendation 11—on domestic vaccine capacity and research funding

That the Government of Canada 1) undertake a review of Canada's domestic vaccine manufacturing capacity; 2) examine how it can improve upon its current suite of policies and programs to boost domestic capacity; and 3) provide a report to the House of Commons Standing Committee on Public Accounts by 31 January 2025.

CONCLUSION

The Committee concludes that although the Government of Canada procured sufficient quantities of COVID-19 vaccines, it was deficient in several areas of managing its supply. Much work needs to be done in order to facilitate the secure and efficient transfer of key

60 Ibid., 1150.

61 Ibid., 1200.

health-related data between the federal government and the governments of the provinces and territories.

In this report, the Committee makes 11 recommendations to help the federal government better manage its administration of vaccines for the COVID-19 and future pandemics.

APPENDIX A: PUBLIC HEALTH AGENCY OF CANADA'S MILESTONES FOR RECOMMENDATION 9.80

Auditor General's Recommendation 9.80:

The Public Health Agency of Canada (PHAC), in collaboration with Health Canada (HC) and the provinces and territories, should resolve barriers to

1) better share vaccine surveillance information among themselves;

2) provide access to the Canadian Adverse Events Following Immunization Surveillance System (CAEFISS) to Health Canada; and

3) provide surveillance data, including case-level details as needed, to the World Health Organization and vaccine companies in a timely manner.[1]

MILESTONES FROM THE PUBLIC HEALTH AGENCY OF CANADA'S MANAGEMENT RESPONSE AND ACTION PLAN

Goal of Outcomes

Governance documentation and processes for vaccine safety data and information-sharing, which were enhanced in response to the COVID-19 pandemic, will be strengthened through formalization between the Agency and relevant partners.

Milestones:

Part 1

1.1 PHAC will lead a review and update of governance documentation and work plan for the Vaccine Vigilance Working Group, the Federal/Provincial/Territorial (F/P/T) governance table for vaccine safety monitoring and information sharing, to reflect

1 Office of the Auditor General of Canada, COVID-19 Vaccines, Report 9 of the 2022 Reports of the Auditor General of Canada, para. 9.80.

lessons learned from the safety surveillance of COVID-19 vaccines and the identified needs of members. (November 30, 2023)

1.2 PHAC will collaborate with Health Canada on review and update of governance documentation for PHAC-HC vaccine safety collaboration and information sharing, to reflect lessons learned from the safety surveillance of COVID-19 vaccines and the identified needs of members. (November 30, 2023)

Part 2

2.1 PHAC will complete a series of P/T consultations first initiated by the Agency on February 24, 2022 through a presentation to Canadian Immunization Committee (CIC), on a proposal to provide Health Canada staff access to CAEFISS and obtain from each P/T written assent or an articulation of persisting barriers to implementation. (Completion date December 1, 2023) P/T consent is required for any use of case-level data beyond national public health monitoring. P/Ts have cited concerns related to risk of public disclosure of personal information on AEFIs and lack of related patient consent.

2.2 PHAC will continue to share CAEFISS data per the parameters of the Letter of Agreement between HC and PHAC on CAEFISS data sharing, which was extended beyond its October 2022 expiry date for an additional ten years. (Ongoing)

2.3 PHAC will develop a new Letter of Agreement between HC and PHAC to include any new parameters established during the engagement discussions with P/Ts around access to CAEFISS for HC staff (Completion date: 12 months following the completion of 2.1 above)

2.4 Should parameters remain at status quo following these discussions, PHAC will work with HC to identify avenues that may address any persisting barriers.

Part 3

3.1 PHAC will continue to share aggregate vaccine surveillance data with the World Health Organization (WHO) per their requests, and to provide tailored presentations and/or updates to relevant committees (e.g. the Global Advisory Committee on Vaccine Safety). (Ongoing)

3.2 PHAC will review and update (as necessary) the process for sharing of case-level data on identified safety issues with vaccine manufacturers, inclusive of target performance/timelines standards. (March 31, 2023)

3.3 PHAC will facilitate consultations with HC and F/P/T immunization programs on options to share more granular vaccine safety data with the WHO and vaccine manufacturers, with a focus on addressing barriers identified by F/P/T immunization programs. PHAC will report on the results of consultations held. (Report date: March 31, 2024)

3.4 Should parameters remain at status quo following these discussions, PHAC will work with HC to identify avenues that may address any persisting barriers.[2]

2 Public Health Agency of Canada, Management Response and Action Plan, p. 3–5.

APPENDIX B: SUPPLEMENTAL INFORMATION FROM HEALTH CANADA

In response to a request at the hearing for additional information, the department provided the following response in a letter to the Committee.

APPROVAL TIMELINE OF COVID-19 VACCINES AUTHORIZED BY HEALTH CANADA

Health Canada has been working diligently to review and approve COVID-19 vaccines in an expedited manner while ensuring their safety and efficacy. The Department has approved several COVID-19 vaccines, including those developed by AstraZeneca, BioNTech (Pfizer), Medicago, Janssen, Novavax, and Moderna. Additionally, the Department continues to monitor the safety and efficacy of COVID-19 vaccines after they are approved to ensure their long-term safety and effectiveness.

The review and approval of COVID-19 vaccines can be a complex and iterative process, and review times vary depending on several factors, including the type of vaccine, the stage of development, and the quality and timing of the data from clinical trials submitted to Health Canada. Furthermore, clinical trials conducted in the later stages of the pandemic generally tended to take longer given the additional time needed to recruit study participants. The table below (Table 1: List of COVID-19 vaccines authorized by Health Canada) outlines the information requested from the Committee organized by sponsor and the date by which an application was received by Health Canada.

More specifically on Medicago's COVID-19 vaccine submission, the initial request through Health Canada's temporary interim order (IO) pathway was filed on April 19, 2021, indicating that additional scientific data would only become available in September 2021.

Medicago was able to continue with their submission and provided the final data once it became available on December 15, 2021, which included clinical study reports for the phase 3 trial, the draft product monograph, and draft risk management plan. Health Canada was then able to complete its review and a Notice of Compliance for the product was issued on February 24, 2022.

Table 1—List of COVID-19 vaccines authorized by Health Canada

Authorization holder	Brand name, proper name or common name	Date filed	Date of authorization or expanded indication	Total Duration in days	Authorization or expanded indication
AstraZeneca Canada Inc	Vaxzevria ChAdOx1-S (recombinant) solution for injection	2020-10-01	2021-02-26	148	Vaccine for adults 18 and over authorized under an Interim Order
AstraZeneca Canada Inc	Vaxzevria ChAdOx1-S (recombinant) solution for injection	2021-06-14	2021-11-19	158	Vaccine for adults 18 and over authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2020-10-09	2020-12-09	61	Vaccine for adults 16 and over authorized under an Interim Order
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2021-04-16	2021-05-05	19	Pediatric indication (ages 12–15 years) authorized under an Interim Order
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2021-06-10	2021-09-16	98	Vaccine for adults 12 and over authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2021-10-01	2021-11-09	39	First booster dose 18 and over authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2021-10-18	2021-11-19	32	Pediatric indication (ages 5–11 years) authorized under the Food and Drug Regulations.

Authorization holder	Brand name, proper name or common name	Date filed	Date of authorization or expanded indication	Total Duration in days	Authorization or expanded indication
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2021-02-23	2022-06-01	463	First booster dose (ages 16–17 years) authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2022-05-27	2022-08-19	84	First booster dose (ages 5–11 years) authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Tozinameran (mRNA vaccine, BNT162b2) suspension for injection	2022-06-23	2022-09-09	78	Pediatric indication (ages 6 months-5 years) authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Original/Omicron BA.1 Tozinameran, riltozinameran suspension for injection	2022-07-22	2022-10-21	91	Bivalent booster (ages 12 years and over) authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Original & Omicron BA.4/BA.5 Tozinameran, famtozinameran suspension for injection	2022-09-02	2022-10-07	35	Bivalent booster (ages 12 years and over) authorized under the Food and Drug Regulations.
BioNTech Manufacturing GmbH	Comirnaty Original & Omicron BA.4/BA.5 Tozinameran, famtozinameran suspension for injection	2022-10-18	2022-12-09	52	Bivalent booster (ages 5–11 years) authorized under the Food and Drug Regulations.
Janssen Inc	Jcovden AD26.COV2.S (recombinant) suspension for injection	2020-11-30	2021-03-05	95	Vaccine for adults 18 and over authorized under an Interim Order

Authorization holder	Brand name, proper name or common name	Date filed	Date of authorization or expanded indication	Total Duration in days	Authorization or expanded indication
Janssen Inc	Jcovden AD26.COV2.S (recombinant) suspension for injection	2021-06-14	2021-11-23	162	Vaccine for adults 18 and over authorized under the Food and Drug Regulations.
Janssen Inc	Jcovden AD26.COV2.S (recombinant) suspension for injection	2021-12-17	2022-05-11	145	First booster dose authorized under the Food and Drug Regulations.
Medicago Inc	Covifenz Virus-like particles (VLP) of SARS-CoV-2 spike protein emulsion for injection	2021-08-09*	2022-02-24	199	Vaccine for adults 18 and over authorized under the Food and Drug Regulations.
ModernaTX, Inc	Spikevax Elasomeran suspension for injection	2020-10-12	2020-12-23	72	Vaccine for adults 18 and over authorized under an Interim Order
ModernaTX, Inc	Spikevax Elasomeran suspension for injection	2021-06-04	2021-08-27	84	Pediatric indication (ages 12–17 years) authorized under an Interim Order
ModernaTX, Inc	Spikevax Elasomeran suspension for injection	2021-06-15	2021-09-16	93	Vaccine for adults 12 and over authorized under the Food and Drug Regulations.
ModernaTX, Inc	Spikevax Elasomeran suspension for injection	2021-10-06	2021-11-12	37	First booster dose (ages 18 years and older) authorized under the Food and Drug Regulations.

Authorization holder	Brand name, proper name or common name	Date filed	Date of authorization or expanded indication	Total Duration in days	Authorization or expanded indication
ModernaTX, Inc	Spikevax Elasomeran suspension for injection	2021-11-16	2022-03-17	121	Pediatric indication (ages 6–11 years) authorized under the Food and Drug Regulations.
ModernaTX, Inc	Spikevax Elasomeran suspension for injection	2022-03-16	2023-01-12	302	First booster dose (ages 12–17 years) authorized under the Food and Drug Regulations.
ModernaTX, Inc	Spikevax Elasomeran suspension for injection	2022-04-29	2022-07-14	76	Pediatric indication (ages 6 months–5 years) authorized under the Food and Drug Regulations.
ModernaTX, Inc	Spikevax Bivalent Elasomeran, imelasomeran dispersion for injection	2022-06-30	2022-09-01	63	Bivalent booster (ages 18 years and over) authorized under the Food and Drug Regulations.
ModernaTX, Inc	Spikevax Bivalent (Original / Omicron BA.4/5) Elasomeran, davesomeran dispersion for injection	2022-09-12	2022-11-03	52	Bivalent booster (ages 18 years and over) authorized under the Food and Drug Regulations.
Novavax Inc.	Nuvaxovid SARS-CoV-2 recombinant spike protein suspension for injection	2021-08-27*	2022-02-17	174	Vaccine for adults 18 and over authorized under the Food and Drug Regulations.
Novavax Inc.	Nuvaxovid SARS-CoV-2 recombinant spike protein suspension for injection	2022-06-21	2022-12-06	168	Adolescent dose (ages 12–17 years) authorized under the Food and Drug Regulations.

Authorization holder	Brand name, proper name or common name	Date filed	Date of authorization or expanded indication	Total Duration in days	Authorization or expanded indication
Novavax Inc.	Nuvaxovid SARS-CoV-2 recombinant spike protein suspension for injection	2022-08-05	2022-11-17	104	First booster dose authorized under the Food and Drug Regulations.
Verity Pharmaceuticals Inc/Serum Institute of India	Covishield ChAdOx1-S (recombinant) solution for injection	2021-01-23	2021-02-26 (expired 2021-09-16)	34	Vaccine for adults 18 and over authorized under an Interim Order

*Note: On the Auditor General of Canada's Report 9 on COVID-19 Vaccines, Exhibit 9.1—Health Canada expedited its processes for vaccine authorization during the COVID-19 pandemic, the dates listed in the exhibit represent the filing dates made by Novavax and Medicago under the Interim Order (IO). These submissions were not approved under the IO, and are thus not represented in this table, which only lists submissions that were approved.

APPENDIX C: SUPPLEMENTAL INFORMATION FROM PUBLIC SERVICES AND PROCUREMENT CANADA

In response to a request at the hearing for additional information, the department provided the following response in a letter to the Committee. Below is the information requested for which Public Services and Procurement Canada is accountable. Note that additional information will be provided by the Public Health Agency of Canada (PHAC) under separate cover (refer to Appendix D).

Question 1—Remaining vaccines (rephrased to be less political than the actual questions asked)

Under Canada's Advance Purchase Agreements, there are currently 90.8 million remaining doses to be delivered in 2023 and 2024. Please refer to [Table A] for further details.

Question 2—Advance purchase agreements

The Government of Canada has committed over $9 billion to procure vaccines and therapeutics and to provide international support. PHAC is responsible for managing this funding as the client department.

Canada's Advance Purchase Agreements provide flexibility to procure the latest formulations and presentations of COVID-19 vaccines, such as those to protect against mutations or variants of concern, and vaccines developed for younger populations. Booster doses may be acquired under the 90.8 million doses to be delivered in 2023 and 2024.

Question 3—Financial details

Canada's Advance Purchase Agreements include strict confidentiality terms whereby the terms and conditions of the agreements, including the financial details, and the information pertaining to the relationship between Canada and the suppliers, are considered confidential information between both parties.

Question 4—Breakdown by advance purchase agreement

PSPC cannot provide an answer that specifically aligns to the information provided in exhibit 9.3. of the OAG report as requested by the Committee, but please see [Table A] for detailed information on Canada's Advance Purchase Agreements broken down by supplier.

Table A—COVID 19 Vaccine Advance Purchase Agreements Breakdown

Advance Purchase Agreements	Firm Dose Commitment (Note 1)	Initial Dose Options Exercised	Delivered to Date (Note 2)	Remaining Doses to be Delivered in 2023 and 2024 (Note 3)	Options Remaining (No Financial Commitment)
Moderna	44M	35.5M	61M	18.5M	50M
Pfizer	85M	34M	89M	30M	90M
Novovax	52M	0	9.7M	42.3M	24M
Medicago (Note 4)	20M	0	0	0	0
Sanofi (Note 5)	6.24M	0	0	0	0
Astrazeneca	20M	0	20M	0	0
Janssen	9.98M	0	9.98M	0	0
Total	237.22M	69.5M	189.68M	90.8M	164M

Notes: 1. Firm dose commitments reflects the total firm dose commitment including those added through amendments.

2. As of February 15, 2023.

3. As of February 15, 2023, outstanding doses to be delivered in 2023 and 2024. May include firm doses as well as options exercised. Note this is net of Medicago and Sanofi's firm commitments (see notes 4 & 5).

4. Medicago and Canada are formalizing an agreement to terminate the contract by mutual consent.

5. Sanofi and Canada are formalizing an agreement to terminate the contract by mutual consent.

6. "M" stands for "million"

APPENDIX D: SUPPLEMENTAL INFORMATION FROM THE PUBLIC HEALTH AGENCY OF CANADA

The Public Health Agency of Canada (PHAC) provided supplemental information requested at the hearing in a letter to the Committee.

In response to questions about the specifics of the Government of Canada's contractual obligations with vaccine manufactures and Canada's vaccine supply management, the agency provided the following information:

Q1B. Current Vaccine Supply Management?

Management of Canada's COVID-19 vaccine supply is complex and must continually pivot and adjust to an uncertain COVID-19 disease trajectory. This includes variants of concern, evolving public health advice based on the latest science, and changes in vaccine demand of individuals and the population as a whole, both domestically and internationally.

The Government of Canada continues to work closely with provincial, territorial, and Indigenous partners to align COVID-19 vaccine supply with Canada's COVID-19 immunization program requirements, recognizing that provinces and territories (PTs) have jurisdiction over their immunization programs. Canada's COVID-19 vaccine supply needs are also informed and based on the most recent scientific data on COVID-19 vaccines, COVID-19 epidemiology, surveillance of vaccine coverage in our population and evidence-based expert advice.

The Government of Canada is continuing to support PTs and Indigenous partners in ongoing efforts to support COVID-19 vaccination, with a focus on supporting individuals in Canada in staying up to date on COVID-19 vaccination, including boosters, guided by the latest evidence-based guidance and public health advice. The Government of Canada's continued efforts in this regard relate to inventory management and distribution of COVID-19 vaccines, development of evidence-based guidance on the use of COVID-19 vaccines, communication and public education efforts, partnerships, and initiatives to support vaccine confidence and uptake. These efforts take a health equity approach and provide supports for healthcare providers, vaccine coverage and safety surveillance.

Additionally, the Public Health Agency of Canada continues to work closely with Public Services and Procurement Canada and vaccine suppliers to adjust COVID-19 vaccine contractual commitments and delivery schedules where possible and is examining options to reduce or adjust contractual commitments in 2023 and 2024 to more closely align with anticipated needs. PHAC also monitors vaccine shelf-life and expiry date extensions and approvals by Health Canada and plans accordingly in order to maximize the use of doses delivered in Canada.

Canada continues to strengthen its ability to monitor COVID-19 vaccine inventory including wastage, in addition to streamlining reporting and data sharing that will facilitate more accurate capture of vaccine wastage in Canada.

To date, the government has donated the equivalent of more than 196 million doses, including at least 41.5 million doses deemed surplus from Canada's domestic supply. The federal government continues to work toward its commitment of donating the equivalent of at least 200 million doses.

In an effort to minimize wastage, the Government of Canada will continue to make vaccine surplus available to other countries for donation. Working multilaterally and bilaterally, in partnership with Global Affairs Canada, the Government of Canada continues to look to place surplus vaccine donations, recognizing that it is more difficult to donate vaccine doses due to global oversupply and diminishing demand.

Q1C. Potential Doses Lost due to Expiration Dates not properly Tracked?

Since the launch of the COVID-19 vaccination campaign, over 103.5 million doses have received an authorized shelf-life extension, allowing greater utilization of COVID-19 vaccine products available to Canadians and through international donations. PHAC closely monitors COVID-19 vaccine product shelf-life and expiration dates and continues to work closely with federal, provincial, and territorial (FPT) partners to track and monitor expirations in the absence of an end-to-end integrated supply chain system across all levels of government and partners involved in COVID-19 vaccination. These steps include regular reports to FPT partners with a line list of all vaccine lot batches distributed in Canada, by lot number and expiry date, with updated expiration dates following shelf-life extensions. To ensure broad dissemination, this information is shared via several communication channels such as weekly logistics reports and FPT Canadian Immunization Committee updates. As the expiration of vaccine product approaches (at least 30 days lead time), PHAC notifies FPT partners to ensure product is being prioritized for use to maximize campaign efficiency, as well as to monitor in respective jurisdictional inventories that expired product is not used.

It should be noted that the shelf life for COVID-19 vaccine products involves both the management of product in the frozen state, for which the original labelled expiry date and any subsequent shelf-life extension must be respected, as well as the shelf life of product once thawed and held in the refrigerated state. This level of inventory management occurs at the local level. Once the product is taken out of the freezer at local vaccine administration sites, there is limited to no visibility of the available shelf life of product at the provincial/territorial and federal levels. Locally, COVID-19 vaccine supply logs are maintained at local clinics (i.e., pharmacies, vaccine clinics, doctor's offices), including the ability to mark the expiry on the vial based on the product monograph to support use of product.

PHAC is actively coordinating with PTs to monitor vaccine wastage and expiry. Vaccine wastage, both avoidable and unavoidable, is expected and planned for at all levels of the immunization supply chain. Avoidable closed vial wastage is due primarily to cold chain excursions or expiry, and this is where controls can be exercised.

Furthermore, the Government of Canada will work with PTs to support advancement in systems for tracking and monitoring distribution to have real time inventory and wastage data, and for this data from PTs to be collected and shared at the federal level.

PHAC is actively working to advance the implementation and data quality procedures of the three modules of VaccineConnect. VaccineConnect provides information and support to PTs for planning, management, and reporting on COVID-19 vaccine supply orders, inventory management, as well as vaccine safety monitoring and surveillance. Some of its features allow FPT officials to: process vaccine orders; manage the full cycle of scheduling, vaccine administration, recording, and reporting; and track inventory and logistics in real time. VaccineConnect also provides analytics to enhance population health management.

PHAC will continue to actively engage jurisdictional partners on the identification of service and data quality needs and gaps in order to support future integration of the systems to support vaccination.

In response to a questions about the quantity of COVID-19 vaccines procured, the amounts in storage, and what has been discarded, the agency provided the following information:

Q2B. What has been purchased physically?

The cumulative supply of all doses/types received into Canada as of January 1, 2023 is 164.3M.

Q2C. What is the current inventory?

As of January 31, 2023, there were 22.6M COVID-19 vaccine doses in federal inventory and approximately 7.2M doses in PT inventory [both DEL (drug establishment license) facilities and non-DEL facilities]. The table below shows the breakdown of doses in federal inventory as of January 31, 2023.

Table A—COVID-19 Vaccine supply in federal inventory by type

Vaccines	Number of Doses
mRNA Vaccines: Pfizer and Moderna, monovalent formulation for adults	3,502,634
mRNA Vaccines: Pfizer bivalent BA.4/5 formulation	4,761,636
mRNA Vaccines: Moderna bivalent BA4/5 formulation	1,210,000
mRNA Vaccines: Moderna bivalent BA.1 formulation	3,623,230
mRNA Vaccines: Pfizer pediatric monovalent formulation	743,060
mRNA Vaccines: Pfizer pediatric BA4/5 formulation	67,100
mRNA Vaccines: Pfizer infant pediatric formulation	1,450,660
mRNA Vaccines: Moderna infant pediatric formulation	140,060
Non-mRNA Vaccines: Janssen	129,100
Non-mRNA Vaccines: Novavax	6,407,530

Q2D. What has been discarded?

Overall, approximately 25.6M doses have expired to date. As of December 31, 2022, a total of 12,061,760 doses held domestically in federal inventory have been disposed of and/or are awaiting disposal due to expiry, and a total of 13.6M doses held off-shore (AstraZeneca) have been disposed of due to expiry. The table below shows the breakdown of doses held domestically in federal inventory that have been disposed of or are waiting disposal due to expiry.

Table B—Detailed breakdown of Canada's expired COVID-19 vaccine doses,

Vaccine	Expiry Date	Wasted Quantity
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-03-21	759,948
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-04-15	429,450
Pfizer (Adult/Adolescent monovalent ancestral mRNA formula)	2022-06-30	6
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-07-23	46,790
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-08-17	1,186,800
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-08-20	685,700
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-08-26	1,127,750
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-08-29	1,509,100
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-09-30	559,700
Pfizer (Adult/Adolescent monovalent ancestral mRNA formula)	2022-09-30	7,338
Moderna (Adult/Adolescent monovalent ancestral mRNA formula)	2022-10-01	1,356,800
Pfizer (Adult/Adolescent monovalent ancestral mRNA formula)	2022-11-30	20,508

Table C provides information about the COVID-19 vaccine supply currently in Canada, by manufacturer as of January 30, 2023. This includes all formulations for the manufacturer (monovalent, bivalent, adult, pediatric and infant pediatric formulations).

Table C—Detailed Breakdown by COVID-19 Vaccine Manufacturer

COVID-19 Vaccine	Doses Distributed	Federal Inventory	Provincial/Territorial Inventories (DEL and non-DEL)	Other*	Expired**	Administered
Pfizer	77,040,018	8,885,832	4,244,848	16,823,702	27,852	64,857,300
Moderna	38,686,620	6,782,310	2,151,051	13,908,290	8,921,808	29,409,590
AstraZeneca	3,030,700	0	0	244,335	4,900 in Canada 13,591,700 held at manufacturer due to limited demand for domestic use or donation	2,812,659
Janssen	58,900	129,100	17,385	147,031	0	23,584
Novavax	183,690	6,407,730	46,090	105,378	3,132,900	30,722

*Other: This section refers to doses that expired in the provincial / territorial (PT) system at any level. Includes both closed vial (expired frozen or thawed; discarded due to cold chain excursions) and open vial wastage (vial punctured and not all doses used). In the OAG audit, this is referred to as “unknown status” as the responsibility for tracking / disposal is at the PT level. Federal tracking / visibility is dependent on availability of PT data and reported federally.

**Expired: This section is reflective of doses that have expired while in the Federal inventory.

***DEL: Drug establishment licensing.

DONATIONS

Doses donated by Canada?

Canada has donated the equivalent of more than 196 million doses to-date. This includes at least 41.5 million doses deemed surplus from Canada's domestic supply and donated to COVAX, as well as more than 3.7 million doses donated directly to countries through bilateral agreements.

AstraZeneca: 22.5 million doses have been donated to COVAX and bilaterally and 8.9 million doses were delivered to recipient countries.

Janssen: 9.8 million doses have been donated to COVAX and 9.8 million were delivered to recipient countries.

Moderna: At least 10 million doses have been donated to COVAX and 7.1 million were delivered to recipient countries.

Pfizer: 3 million doses were donated bilaterally to a recipient country. Including both COVAX donations and bilateral donations, 28.8 million of Canada's donated doses have been delivered to 36 recipient countries.

Table D—Donated COVID-19 Vaccines

Country	Number of doses shipped	Date delivered	Vaccine manufacturer	Mechanism	Shipped from
Madagascar	21,600	2022-03-25	AstraZeneca	COVAX	Manufacturer
Ghana	309,600	2022-03-14	AstraZeneca	COVAX	Manufacturer
Jamaica	100,000	2022-02-22	AstraZeneca	COVAX	Manufacturer
Mozambique	1,168,800	2022-02-11	AstraZeneca	COVAX	Manufacturer
Mauritania	201,600	2022-02-07	AstraZeneca	COVAX	Manufacturer
Yemen	100,800	2022-02-01	AstraZeneca	COVAX	Manufacturer
Bangladesh	2,203,100	2021-12-19	AstraZeneca	COVAX	Manufacturer
Nepal	368,100	2021-11-15	AstraZeneca	COVAX	Manufacturer
Nicaragua	326,400	2021-11-09	AstraZeneca	COVAX	Manufacturer
Angola	326,400	2021-11-02	AstraZeneca	COVAX	Manufacturer
Jamaica	369,600	2021-11-01	AstraZeneca	COVAX	Manufacturer
Argentina	549,600	2021-09-27	AstraZeneca	COVAX	Manufacturer
Jamaica	100,800	2021-09-13	AstraZeneca	COVAX	Manufacturer
Guatemala	363,100	2021-09-05	AstraZeneca	COVAX	Manufacturer
Costa Rica	319,200	2021-09-02	AstraZeneca	COVAX	Manufacturer
Kenya	459,300	2021-09-02	AstraZeneca	COVAX	Manufacturer
Niger	100,800	2021-09-02	AstraZeneca	COVAX	Manufacturer
Nigeria	801,600	2021-09-02	AstraZeneca	COVAX	Manufacturer

Country	Number of doses shipped	Date delivered	Vaccine manufacturer	Mechanism	Shipped from
Peru	35,100	2021-09-02	AstraZeneca	Bilateral agreement	Canada
Barbados	30,000	2021-09-01	AstraZeneca	Bilateral agreement	Canada
Ecuador	394,950	2021-08-27	AstraZeneca	Bilateral agreement	Canada
Jamaica	200,000	2021-08-26	AstraZeneca	Bilateral agreement	Canada
Saint Vincent and the Grenadines	20,000	2021-08-24	AstraZeneca	Bilateral agreement	Canada
Trinidad and Tobago	82,030	2021-08-04	AstraZeneca	Bilateral agreement	Canada
Tanzania	1,413,650	2022-11-08	Janssen	COVAX	Manufacturer
Uzbekistan	419,950	2022-10-30	Janssen	COVAX	Manufacturer
Mali	201,550	2022-10-28	Janssen	COVAX	Manufacturer
Niger	604,800	2022-09-18	Janssen	COVAX	Manufacturer
Zambia	911,900	2022-09-05	Janssen	COVAX	Manufacturer
Burkina Faso	672,000	2022-08-19	Janssen	COVAX	Manufacturer
Guyana	28,800	2022-08-19	Janssen	COVAX	Manufacturer
Tanzania	1,360,800	2022-08-01	Janssen	COVAX	Manufacturer
Nigeria	2,649,600	2022-08-01	Janssen	COVAX	Manufacturer
Zambia	950,350	2022-06-30	Janssen	COVAX	Manufacturer
Liberia	295,200	2022-06-01	Janssen	COVAX	Manufacturer
Liberia	302,400	2022-05-24	Janssen	COVAX	Manufacturer
El Salvador	20,000	2022-12-15	Moderna	COVAX	Canada
Kenya	300,000	2022-11-09	Moderna	COVAX	Canada
Vietnam	300,000	2022-10-22	Moderna	COVAX	Canada
Kenya	100,000	2022-10-05	Moderna	COVAX	Canada

Country	Number of doses shipped	Date delivered	Vaccine manufacturer	Mechanism	Shipped from
Kenya	100,000	2022-08-31	Moderna	COVAX	Canada
Haiti	180,000	2022-08-22	Moderna	COVAX	Canada
Equatorial Guinea	60,000	2022-06-01	Moderna	COVAX	Canada
Uganda	433,300	2022-02-16	Moderna	COVAX	Canada
Rwanda	477,680	2021-12-21	Moderna	COVAX	Canada
Egypt	841,260	2021-12-14	Moderna	COVAX	Canada
Rwanda	1,602,160	2021-11-18	Moderna	COVAX	Canada
Uganda	1,904,140	2021-11-13	Moderna	COVAX	Canada
Egypt	784,280	2021-10-31	Moderna	COVAX	Canada
Mexico	3,001,050	2022-07-28	Pfizer	Bilateral agreement	Canada

Doses offered by Canada and waiting for donation

When global vaccine supply became more abundant, the COVAX allocation mechanism moved from a supply-driven approach to a demand and absorption capacity-driven approach. This meant that COVAX began only accepting donation offers following requests from recipient countries. Canada has adapted its supply management to fit this model and has since provided doses to COVAX on an as-requested basis. Specific lots are no longer pre-emptively committed for donation and doses are pulled from Canada's surplus supply once a recipient (through COVAX or bilateral engagement) is confirmed.

Doses expired waiting for donation

13.6 million AstraZeneca doses held at the manufacturer expired due to lack of demand.

APPENDIX E:
LIST OF WITNESSES

The following table lists the witnesses who appeared before the committee at its meetings related to this report. Transcripts of all public meetings related to this report are available on the committee's webpage for this study.

Organizations and Individuals	Date	Meeting
Department of Health	2023/02/06	48
Celia Lourenco, Acting Associate Assistant Deputy Minister, Health Products and Food Branch		
Stephen Lucas, Deputy Minister		
Supriya Sharma, Chief Medical Advisor and Senior Medical Advisor, Health Products and Food Branch		
Department of Public Works and Government Services	2023/02/06	48
Michael Mills, Assistant Deputy Minister, Procurement Branch		
Arianne Reza, Associate Deputy Minister		
Office of the Auditor General	2023/02/06	48
Nadine Cormier, Director		
Susan Gomez, Principal		
Karen Hogan, Auditor General of Canada		
Public Health Agency of Canada	2023/02/06	48
Stephen Bent, Vice-President, COVID-19 Vaccine Rollout Task Force		
Luc Gagnon, Assistant Deputy Minister and Chief Digital Transformation Officer, Digital Transformation Branch		
Harpreet S. Kochhar, President		
Medicago Inc.	2023/03/23	54
Toshifumi Tada, President and Chief Executive Officer		
Moderna Inc.	2023/03/23	54
Patricia Gauthier, President, General Manager, Canada		

Organizations and Individuals	Date	Meeting
Pfizer Canada	2023/03/23	54
Fabien Paquette, Vaccines Lead, mRNA Vaccines and Antiviral Portfolio		
Najah Sampson, President		
SANOFI Canada	2023/03/23	54
Jean-Pierre Baylet, General Manager, Vaccines		
Department of Public Works and Government Services	2023/05/01	61
Michael Mills, Assistant Deputy Minister, Procurement Branch		
Levent Ozmutlu, Director General, Strategic Policy Sector, Procurement Branch		
Mollie Royds, Associate Assistant Deputy Minister, Procurement Branch		
Paul Thompson, Deputy Minister		
Office of the Auditor General	2023/05/01	61
Susan Gomez, Principal		
Andrew Hayes, Deputy Auditor General		
Karen Hogan, Auditor General		

REQUEST FOR GOVERNMENT RESPONSE

Pursuant to Standing Order 109, the committee requests that the government table a comprehensive response to this Report.

A copy of the relevant *Minutes of Proceedings* (Meetings Nos. 48, 54, 61, 71, 72, 96 and 117) is tabled.

Respectfully submitted,

John Williamson, M.P.
Chair