EVIDENCE SYNTHESIS BRIEFING NOTE

TOPIC: **COVID-19 VACCINATION PLANNING**

Information finalized as of November 6, 2020.[a]

This Briefing Note was completed by the Research, Analysis, and Evaluation Branch (Ministry of Health) in collaboration with a member of the COVID-19 Evidence Synthesis Network. Please refer to the Methods section for further information.

Purpose: This note provides a summary of planning approaches for vaccinating populations for COVID-19.
Key Findings:

- **Supply**: Many countries have secured agreements for COVID-19 vaccines through a variety of mechanisms, including international alliances (e.g., COVAX), local public-private partnerships, and country agreements with vaccine producers.
- **Distribution**: Centralized distribution approaches will be used in Europe (via advanced purchase agreements with vaccine producers) and the US (to ship vaccines to administration sites), and Germany will use a decentralized approach via 60 country-wide distribution centres.
- **Ordering/Tracking**: In the US, the Vaccine Tracking System is a secure, web-based IT system that integrates the entire publicly funded vaccine supply chain.
- **Allocation**: Guidelines and jurisdictions suggest phased vaccination approaches: first starting with health care workers and vulnerable populations (e.g., essential workers, older adults, people experiencing homelessness, Indigenous communities), followed by expanded coverage for remaining populations.
- **Administration**: Site options vary across jurisdictions (e.g., pharmacies, nursing homes, physician clinics, hospitals, mobile clinics), and logistical challenges (e.g., monitoring, staff training) need to be considered.
- **Workforce Capacity**: In Quebec, physicians, nurses, pharmacists, respiratory therapists, and midwives can administer vaccines, and other providers are being requested (e.g., social workers, psychologists). The scope of practice will be expanded for pharmacists to administer vaccines in the US. European countries are encouraged to foster new recruitments and training programs, potentially involving students or retired staff.
- **Monitoring**: Ontario and Manitoba participate in immunization surveillance systems. In the US and Europe, integrated IT systems will be developed and used to track purchasing, ordering, patient doses, and patient outcomes in compliance with data protection and privacy regulations.
- **Communication**: The US and Europe are enhancing partnerships and information campaigns to promote vaccine safety, efficacy, and acceptance. Reliable, frequent, and tailored information should be shared with communities through multiple media platforms (e.g., providers, social media).
- **Performance Indicators**: The WHO's Vaccine Readiness Assessment Tool (VIRAT) provides a roadmap for countries to plan for COVID-19 vaccine introduction and a structured framework for countries to self-monitor their readiness progress against key milestones. The European Centre for Disease Prevention and Control's guidance includes the development of performance indicators (e.g., coverage, safety).

Implementation Implications: Integrated vaccine responses are required within and across jurisdictions. Detailed scenarios should be planned for now based on prior vaccination campaigns and current COVID-19 research, but they may evolve as more information becomes available.

[a] This briefing note includes current available evidence as of the noted date. It is not intended to be an exhaustive analysis, and other relevant findings may have been reported since completion.

Supporting Evidence

Table 1 below summarizes the scientific evidence and jurisdictional experiences regarding plans for vaccinating populations against COVID-19 in terms of: supply, allocation, ordering, distribution, inventory management, administration, and performance indicators. Jurisdictions reviewed include: Canada, Australia, France, Germany, Japan, Mexico, New Zealand, South Africa, Spain, United Kingdom (UK), and United States (US), as well as the World Health Organization (WHO) and European Commission.

Additional details are provided in the Appendix: Table 2 (for detailed findings extracted from highly relevant evidence documents and jurisdictional strategies), Table 3 (for experiences from other federal jurisdictions), Table 4 (for experiences from other comparator countries), and Table 5 (for experiences from Canadian provinces and territories).

Table 1: Scientific Evidence, Expert Guidance, and Jurisdictional Experiences for COVID-19 Vaccination Planning

Scientific Evidence and Expert Guidance	• **Clinical Trials**: According to the WHO, there are more than 100 COVID-19 vaccine candidates under development, with a number of these in the human trial phase.[1]
	• **Supply**: The WHO is working in collaboration with scientists, business, and global health organizations through the Access to COVID-19 Tools (ACT) Accelerator to speed up the pandemic response. When a safe and effective vaccine is found, COVAX (led by the WHO, Global Alliance for Vaccines and Immunisation, and the Coalition for Epidemic Preparedness Innovations) will facilitate the equitable access and distribution of these vaccines to protect people in all countries, regardless of their national economic status.[1,b]
	• **Allocation**: Guidelines suggest the equitable allocation of vaccines using a phased approach:
	  ○ The WHO's Values Framework offers guidance on the allocation of COVID-19 vaccines between countries and the prioritization of groups for vaccination within countries while supply is limited (e.g., older adults, health care workers, essential workers). Six core principles that should guide distribution are: human well-being, equal respect, global equity, national equity, reciprocity, and legitimacy.[4]
	  ○ Under COVAX, fair allocation of vaccines will occur by: 1) an initial proportional allocation of doses to countries until all reach enough doses to cover 20% of their population; and 2) a follow-up phase to expand coverage to other population groups within the country. If severe supply constraints persist, a weighted allocation approach would be adopted, taking account of a country's COVID threat and vulnerability.[5]
	  ○ The National Academies of Sciences, Engineering and Medicine (US) proposes a phased approach across five population groups: 1a) high-risk health workers; 1b) people of all ages with high-risk comorbid/underlying conditions and older adults living in congregate or overcrowded settings; 2) school teachers, school-staff childcare workers, critical workers in high-risk settings, people of all ages with moderately high-risk comorbid/underlying conditions, people in homeless shelters/group homes, and all other older adults not in phase 1; 3) young adults, children, workers in key industries not included in phases 1 and 2; and 4) everyone else.[6]

[b] Launched in April 2020 by WHO, the European Commission, and France, the ACT Accelerator is a global collaboration to accelerate development, production, and equitable access to COVID-19 tests, treatments, and vaccines.[2] COVAX is one of three pillars of the ACT Accelerator and focuses on the vaccine response.[3]

	○ John Hopkins University (US) proposes two tiers of population groups: 1) individuals with the greatest risk of illness and death, their caregivers, and essential employees; and 2) those who face greater barriers to accessing care if they become seriously ill, those contributing to the maintenance of core societal functions, and those whose living or working conditions give them elevated risk of infection.[6] • **Administration**: Findings from rapid reviews indicate: ○ Setting: Socially distanced immunization clinics, drive-through clinics, and small mobile-team clinics may be effective, but there are logistical challenges, such as monitoring and staff training, that need to be considered. Moreover, hard-to-reach groups may be reached by setting up vaccination sites in familiar and accessible population-specific spaces.[6] ○ Administrators: Providers must be educated about vaccines and provided with appropriate training to increase their recommendation of vaccines to patients. Individuals with or without backgrounds in medicine can be recruited to deliver vaccination through several avenues, and in-person training and just-in-time training were not found to be more effective than distant or traditional training methods, respectively.[6] ○ Population Targets: Community-based teaching methods and community partnerships may be leveraged to enable greater vaccination uptake by hard-to-reach populations (e.g., Black, Indigenous, and other people of colour).[6] • **Communication Supports**: The WHO suggests designing a demand and crisis communications plan (including advocacy, communications, social mobilization, risk and safety information, community engagement, and training) to generate confidence, acceptance, and demand for COVID-19 vaccines.[7] A rapid review indicates that additional considerations must also be made to overcome language and cultural barriers related to vaccine uptake. Another rapid review emphasizes that reliable, frequent, and tailored information about vaccines must be shared with community members through multiple platforms, including social media, traditional media, and providers.[6] • **Safety Monitoring Requirements**: The WHO suggests guidelines, documented procedures, and tools for planning and conducting vaccine pharmacovigilance activities (e.g., investigation, causality assessment, risk communication) be available.[7] Moreover, a rapid review outlines that training staff to identify signs of adverse vaccine reactions, respond to adverse reactions, and enable quick access to emergency medical supplies is central to mitigating risks associated with vaccination. For example, two studies evaluating the US National Vaccine Injury Compensation Program reported that its ability to address liability were associated with improved confidence among the public health workforce and an improved environment for vaccine research and development, but there were mixed findings related to its association with vaccine uptake.[6] • **Performance Indicators**: The WHO suggests developing or adapting existing surveillance and monitoring frameworks with a set of recommended indicators (e.g., coverage, acceptability, disease surveillance), determining whether registration and reporting will be individual or aggregate, and determining to what extent existing tools and systems can be re-used.[7] Moreover, the WHO's Vaccine Readiness Assessment Tool (VIRAT) includes a Microsoft Excel template for Ministries of Health to complete. It provides a roadmap for countries to plan for COVID-19 vaccine introduction and a structured framework for countries to self-monitor their readiness progress against key milestones.[8]

International Scan	• **Clinical Trials**:
	  ○ Europe: The COVID-19 European Medicines Agency Pandemic Task Force provides scientific advice on clinical trials and product development and a "rolling review" of incoming evidence to speed up the assessment of a promising vaccine.[9]
	  ○ US: Based on data from clinical trials, a vaccine candidate would be submitted to the US Food and Drug Administration for Emergency Use Authorization (EUA) or Biologics License Application (BLA). A vaccine would be manufactured while the clinical trials are ongoing, and would be ready to ship upon EUA/BLA recommendation.[10]
	• **Supply**: Most countries report securing agreements for COVID-19 vaccines through a variety of mechanisms, including international alliances such as COVAX, local public-private partnerships, and country agreements with vaccine producers. For example:
	  ○ UK: The UK Government Vaccine Taskforce has secured agreements to six vaccines, and is participating in COVAX and the Coalition for Epidemic Preparedness Innovations to deliver vaccines to both the UK population and low-income countries.[6]
	  ○ Europe: The government of France announced an inclusive regional alliance with Germany, Italy, and the Netherlands with AstraZeneca (400 million vaccine doses).[6]
	  ○ European Commission: The Commission will enter into Advanced Purchase Agreements with individual vaccine producers on behalf of Member States. As of October 2020, three contracts have been finalized with AstraZeneca (300 million vaccine doses), Sanofi (300 million vaccine doses), and Johnson & Johnson (200 million vaccine doses). Negotiations are also occurring with other manufacturers (CureVac, Moderna, and BioNTech/Pfizer).[11]
	  ○ Australia: The government has secured agreements with Oxford University/AstraZeneca and University of Queensland/CSL Limited (84.8 million vaccine doses).[6]
	  ○ New Zealand: An agreement was secured with Pfizer (1.5 million vaccine doses) to cover 750,000 people.[6]
	  ○ South Africa: The country is expanding an existing public-private partnership with Biovac, a manufacturer for local vaccines, to include the production of COVID-19 vaccines.[6]
	• **Distribution**: The US and European Commission will use centralized distribution processes, while Germany will use a decentralized approach:
	  ○ US: A federal contract with McKesson Corporation will centrally manage and deliver refrigerated (2-8ºC) and frozen (-20ºC) vaccines.[12,13,c] McKesson will work under the CDC's guidance, with logistical support from Department of Defense, to ship COVID-19 vaccines to administration sites.[12] Vaccines and associated ancillary kits (e.g., syringes, needles, alcohol swabs, vaccination cards, personal protective equipment) will be shipped concurrently to distribution depots and facilities.[10]
	  ▪ Delivery locations include sites where the vaccine will be administered, central locations when the vaccine will be further distributed to administration sites within health department networks, and locations integrated into national retail pharmacy networks for distribution to individual pharmacies.[13]
	  ▪ Jurisdictions will need to enroll in the federal program for vaccine access. Jurisdictions within the US will be responsible for developing strategies to ensure proper inventory management and approve orders from enrolled providers within different settings (e.g., hospitals, physician clinics, mobile and/or mass-vaccination events).[6]

[c] McKesson Corporation also distributed the H1N1 vaccine during the H1N1 pandemic in 2009-10. The current contract with McKesson, awarded as part of a competitive bidding process in 2016, includes an option for the distribution of vaccines in the event of a pandemic.[12]

- European Commission: Member states are advised to prepare for deployment of vaccines with different characteristics and storage and transport needs, and review the required vaccination infrastructure (e.g., cold chain, cooled transport, storage capacities).[9]
- Germany: Sixty facilities will be identified throughout the country that will be used as delivery centres for manufacturers. Smaller cities are proposing accessible, central locations (e.g., exhibition halls) to be used as stockpile centres.[6]

- **Ordering and Tracking**:
  - US: The Vaccine Tracking System (VTrckS) is a secure, web-based IT system that integrates the entire publicly funded vaccine supply chain from purchasing and ordering through distribution to participating state/local/territorial health departments and health care providers. VTrckS is being scaled to include the onboarding of new providers under each jurisdiction's microplan. Linkage of IT systems will help direct people to where to get vaccinated using web-based "finder" systems.[13]
- **Allocation**: Jurisdictions advise the equitable allocation of vaccines using a phased approach:
  - Germany, New Zealand, UK, and US: Priority population groups include older adults, health and social care frontline workers, essential workers from other sectors, and individuals at risk due to underlying chronic conditions.[6] For example, in the US:
    - A phased distribution approach will likely be used: Phase 1 (initial vaccine doses distributed to specific populations); Phase 2 (distribution expanded across the entire US population); and Phase 3 (vaccine universally available and integrated into routine public/private vaccination programs if the risk of COVID-19 persists).[13]
    - The PanVax tool is a Microsoft Excel-based instrument that helps local planners understand how their vaccine providers (e.g., pharmacies, clinics) might contribute to vaccinating at least 80% of their population within 12 weeks of vaccine availability, based on population size and ages, number and types of providers, volume of allocated vaccines per provider, and number of vaccinations per week each provider gives.[14]
  - European Commission: Member States will have equal access to available doses based on their population size.[9] Vaccination prioritization should be given to the following groups (unranked): health care workers; persons over 60 years of age; persons whose state of health makes them particularly at risk; essential workers outside the health sector; workers who cannot socially distance; and vulnerable socioeconomic groups and other groups at higher risk.[11]
- **Administration Sites**:
  - US: Options will vary depending on the nature of the vaccine and the phase of the vaccination program and may include pharmacies, nursing homes, public clinics, hospitals, physician offices, mobile clinics, military treatment facilities, community health centres, schools, and workplaces.[10,13]
  - Germany: The country plans to use vaccination centres with mobile teams for its first phase of vaccine distribution, with a second phase including physician clinics.[6]
  - Australia: While preparing for vaccine distribution, the country will develop an immunization program for when a safe and effective vaccine is available.[6]
- **Workforce Capacity**:
  - US: All health care professionals licensed to administer vaccines, including allied health professionals, will be able to administer vaccines.[13] The scope of practice will be expanded for state-licensed pharmacists to administer the COVID-19 vaccine.[6]

	○ European Commission: Member States are advised to consider new recruitments and training programs, potentially involving students or retired staff.[9] • **Funding and Costs**: ○ US: There is a goal of having no upfront costs to providers and no out-of-pocket cost to the vaccine recipient.[13] In terms of injury-compensation programs, vaccines will be covered under the Countermeasures Injury Compensation Program. The Public Readiness and Emergency Preparedness Act for Medical Countermeasures Against COVID-19 will provide liability immunity (under specific requirements) to manufacturers, distributors, program planners, prescribers, administers, and state-licensed pharmacists and interns.[6] ○ Europe: In return for the right to buy a specified number of vaccine doses in a given timeframe and at a given price, the European Commission will finance a part of the upfront costs faced by vaccine producers from the Emergency Support Instrument. This funding will be considered as a down-payment on the vaccines that will actually be purchased by Member States. Additional support is possible through loans from the European Investment Bank.[11] Member States are encouraged to consider providing COVID-19 vaccines for free.[9] • **Monitoring**: ○ US: Building off existing IT infrastructure, an integrated IT system is being built to incorporate claims and payment processes, to identify when a person needs a potential second dose, and to monitor outcomes and adverse events. Administration records will be aggregated, anonymized, and de-identified to protect personal health information.[13] ▪ Reporting requirements will include information on administration (e.g., facility, type, address, date), vaccine (e.g., product, dose number, lot number, expiration, series completion, route of administration), recipient characteristics (e.g., ethnicity, event ID, address, date of birth, name, sex, comorbidity status, missed appointment, serology results, vaccination refusal), and administration (e.g., provider, site).[6] ▪ The Food and Drug Administration and CDC will conduct 24-month post trial monitoring for adverse effects and additional safety features.[10] ○ European Commission: Effectiveness and safety studies will be conducted by public authorities responsible for vaccination programs. Member States may share their national surveillance data on vaccine performance, which is compliant with data protection legislation, via Electronic Immunisation Information Systems or other vaccination registries.[9] ○ European Centre for Disease Prevention and Control: Guidance was developed for the UK and other European Union countries about the safety monitoring of adverse events following immunization at the regional level and for specific population groups.[6] • **Communication Supports**: ○ US: Public, private, and non-profit partnerships are being built or enhanced. An information campaign, Vaccinate with Confidence, will also focus on vaccine safety and efficacy, and target key populations and communities to ensure maximum vaccine acceptance.[13] ○ European Commission: There is a focus on proactively providing clear and timely information to tackle misinformation challenges about vaccines.[9] • **Performance Indicators**: The European Centre for Disease Prevention and Control's guidance includes the development of performance indicators such as assessing impact, safety, effectiveness, coverage, dose type, and vaccine product.[6]

Canadian Scan	• **Clinical Trials**: The Public Health Agency of Canada (PHAC) released recommendations (June 15, 2020) from the National Advisory Committee on Immunization (NACI)[d] on research priorities for COVID-19 vaccines to support public health decisions: ○ Primary Priority Populations for Early Phase Clinical Trials: Healthy adults (18 to <60 years of age) to establish vaccine safety, immunogenicity, and efficacy; and adults 60 years of age and older without underlying health conditions as special populations for clinical trial investigation. ○ Secondary Priority Populations for Early Phase Clinical Trials: Children and adolescents; immunocompromised adults; and pregnant women. ○ Concomitant Administration with Other Vaccines: Investigate the safety, immunogenicity, and efficacy/effectiveness of concomitant administration of the COVID-19 vaccine and other recommended vaccines (e.g., routine childhood vaccinations in children; seasonal influenza, pneumococcal, zoster, and Tdap vaccinations in adults) in the above-mentioned primary and secondary priority populations. ○ Priority Populations for Late Phase Clinical Trials and Post-Market Studies: Individuals with pre-existing health conditions (e.g., asthma, diabetes, cardiovascular disease); and individuals with social (e.g., due to lower socioeconomic status, long-term care facility residents, homelessness, race/ethnicity) and/or occupational (e.g., health care workers, international business travelers) vulnerabilities. ○ Additional Considerations: Ethics, equity/feasibility, health economics, and knowledge gaps.[15] • **Supply**: There are signed agreements with Sanofi and GlaxoSmithKline to secure 72 million doses of COVID-19 vaccine candidates. In addition, Canada is a contributing participant of COVAX. The federal government aims to distribute a safe and effective vaccine in a targeted manner to the provinces and territories.[6] • **Allocation**: The federal government will prioritize population groups similar to other countries, including those at high risk of severe illness and death from COVID-19 and essential workers maintaining the COVID-19 response and other services. However, it diverges from other countries as it plans to include individuals with poor working or living conditions that put them at greater risk of infection.[6] ○ PHAC: Preliminary guidance (November 3, 2020) from NACI was issued on key populations for early COVID-19 immunization via provincial/territorial publicly-funded immunization programs: 1) those at high risk of severe illness and death from COVID-19 (e.g., advanced age); 2) those most likely to transmit COVID-19 to those at high risk of severe illness and death from COVID-19 and workers essential to maintaining the COVID-19 response (e.g., health care workers); 3) those contributing to the maintenance of essential services for the functioning of society (e.g., police, grocery store staff); and 4) those whose living or working conditions put them at elevated risk of infection and where infection could have

[d] NACI provides the Public Health Agency of Canada with ongoing and timely medical, scientific, and public health advice relating to immunization. NACI generally issues guidance on immunization programs and research priorities for immunizing agents that have been authorized by Health Canada. However, in this exceptional circumstance of the COVID-19 pandemic, PHAC has requested rapid guidance from NACI on research priorities for COVID-19 vaccine candidates to support public health decision-making. PHAC acknowledges that the advice and recommendations set out in this statement are based upon the best current available scientific knowledge and is disseminating this document for information purposes.[15]

	disproportionate consequences (e.g., Indigenous communities). These populations are not mutually exclusive and may overlap.[16,e] ○ Quebec: The province is developing allocation rules based on the severity of the pandemic, vulnerability of the population, and the number of people deemed a priority. ○ Northwest Territories: The territory will prioritize older adults and individuals who are immunocompromised and/or have long-term illnesses.[6] • **Administration**: ○ Quebec: Physicians, nurses, pharmacists, respiratory therapists, and midwives can administer vaccines. In preparation for the COVID-19 vaccine, Quebec's Ministry of Health and Social Services is requesting additional assistance from other health professionals, such as psychologists, social workers, and dental hygienists, to administer vaccines.[6] ○ Yukon: The province will use their existing flu-vaccination campaign as a template for COVID-19, which includes appointment logistics and physical distancing measures.[6] • **Monitoring**: ○ Manitoba: The province participates in the PHAC's Canadian Adverse Events Following Immunization Surveillance System.[6]
Ontario Scan	• **Safety**: Ontario participates in the PHAC's Canadian Adverse Events Following Immunization Surveillance System. Additionally, Public Health Ontario conducts provincial surveillance of adverse event reports and supports local public health units in their investigations.[6]

Methods

The COVID-19 Evidence Synthesis Network is comprised of groups specializing in evidence synthesis and knowledge translation. The group has committed to provide their expertise to provide high-quality, relevant, and timely synthesized research evidence about COVID-19 to inform decision-makers as the pandemic continues. The following member of the Network provided an evidence synthesis product that was used to develop this Evidence Synthesis Briefing Note:

- Bhuiya AR, Wilson MG, Moat KA, Gauvin FP, Wang Q, Whitelaw S, Alam S, Sharma K, Ahmad A, Drakos A, Dren N, Bain T, Lavis JN. COVID-19 rapid evidence profile #23: What is known about anticipated COVID-19 vaccine-delivery program elements, and whether and how federated states are harmonizing these elements across constituent units of federations. Hamilton: McMaster Health Forum, 5 November 2020.

For more information, please contact the Research, Analysis and Evaluation Branch (Ministry of Health).

[e] Key populations may change as the evidence base for COVID-19 (e.g., epidemiology, transmission dynamics) and vaccine characteristics (e.g., immunogenicity, safety, efficacy, effectiveness in preventing severe illness and interruption of transmission in different populations), as well as information on vaccine supply, evolves. Sequencing of populations and sub-prioritization within these populations is based on: 1) a population-based risk-benefit analysis taking into consideration risk of exposure, risk of transmission to others, risk of severe illness and death, and the safety and effectiveness of vaccine(s) in key populations; 2) vaccine supply; and 3) COVID-19 epidemic conditions when the vaccine(s) become(s) available.[16]

APPENDIX

The following tables are from an evidence synthesis product produced by a member of the COVID-19 Evidence Synthesis Network:
Bhuiya AR, Wilson MG, Moat KA, Gauvin FP, Wang Q, Whitelaw S, Alam S, Sharma K, Ahmad A, Drakos A, Dren N, Bain T, Lavis JN. COVID-19 rapid evidence profile #23: What is known about anticipated COVID-19 vaccine-delivery program elements, and whether and how federated states are harmonizing these elements across constituent units of federations. Hamilton: McMaster Health Forum, 5 November 2020.

Table 2: Key Findings from Highly Relevant Documents Related to COVID-19 Vaccine-Delivery Programs Elements[6]

Broad and specific program elements	Living, full or rapid reviews about program elements	Jurisdictional scans about program elements
Supply		
• National purchasing	*Key findings from guidelines developed using a robust process* • The Vaccine Readiness Assessment Tool (VIRAT) is intended to be used by Ministries of Health as a roadmap for countries to plan for COVID-19 vaccine introduction (WHO technical guidance; last update 21 September 2020)	*Key findings from experiences of other countries* • In Australia, the government has secured agreements for COVID-19 vaccine with Oxford University/AstraZeneca and University of Queensland/CSL Limited (total doses: 84.8 million) • The Government of France announced an inclusive vaccine alliance with Germany, Italy, and the Netherlands, with a secured agreement with AstraZeneca for 400 million vaccine doses • Japan and Mexico submitted a commitment agreement to the COVAX Facility • New Zealand secured an agreement with Pfizer to supply 1.5 million doses of vaccine (that will cover 750,000 people in New Zealand) • South Africa is expanding an existing public-private partnership with Biovac, a manufacturer for local vaccines, to include the production of COVID-19 vaccines • The U.K. Government Vaccine Taskforce has secured agreements to six vaccines, and is participating in the COVAX Facility and CEPI with a GBP$548 million commitment to deliver vaccines to both the U.K. population and low-income countries • The U.S. government aims to assemble 6.6. million supply kits (including needles, syringes, alcohol pads, vaccination cards, limited PPE), which can support up to 660 million doses of vaccines (which U.S. jurisdictions will need to enroll in the federal government program for vaccine access) *Key findings from experiences in Canada and within provinces/territories* • Canada is a participant of the COVAX Facility, and has signed agreements with Sanofi and GlaxoSmithKline to secure 72 million doses of COVID-19 vaccine candidates

Broad and specific program elements	Living, full or rapid reviews about program elements	Jurisdictional scans about program elements
• Delivery to Canada and to administration sites	*Key findings from guidelines using a robust process* • Action steps for COVID-19 vaccine introduction to countries, which includes guidance on service delivery (WHO technical guidance; last update 21 September 2020)	*Key findings from experiences of other countries* • No experiences were identified *Key findings from experiences in Canada and within provinces/territories* • The federal public health response plan stated that once a safe and efficacious vaccine is available it will be distributed in a targeted manner
Allocation, ordering, distribution, and inventory management within a country (for vaccines and ancillary supplies like needles and diluents)		
• Allocation rules (to lower 'levels,' to populations, and to providers who can reach these populations)	*Key findings from guidelines developed using a robust process* • A framework for the equitable allocation of a COVID-19 vaccine that proposes a phased approach across five population groups (National Academies of Sciences, Engineering and Medicine; last update October 2020) • WHO develops action steps for COVID-19 vaccine introduction to countries (i.e., planning, regulations, prioritization, service delivery, training, monitoring and evaluation, vaccine cold chain and logistics, communication) (WHO technical guidance; last update 21 September 2020) • WHO proposes initial allocation of doses to cover 20% of a country's population, with a follow-up expansion to other population groups (WHO technical guidance; last update 9 September 2020) *Guidance developed using some type of evidence synthesis and/or expert opinion* • A framework for ethical allocation of COVID-19 vaccines proposes two tiers of population groups, with the first tier including individuals with the greatest risk of illness and death, their caregivers, and essential employees (Centre for Health Security, John's Hopkins University; published August 2020)	*Key findings from experiences of other countries* • Germany identifies priority population groups as front-line workers, older adults, and individuals with chronic conditions • New Zealand will be prioritizing allocation rules that achieve population immunity and protect groups such as Māori, Pacific peoples, and population groups at risk of COVID-19 • The National Health Services (NHS) in the U.K. will be prioritizing vulnerable populations such as older adults (50 years or older), individuals at care homes (residents and staff), health- and social-care staff, and adults with multiple chronic conditions • In the U.S., healthcare personnel (paid and unpaid) and essential workers, adults with high-risk medical conditions, and older adults (65 years or older) are considered in the prioritized population group *Key findings from experiences in Canada and within provinces/territories* • Canada will prioritize those at high risk of severe illness and death from COVID-19; those most likely to transmit COVID-19 to those at high risk of severe illness and death and workers essential to maintaining the COVID-19 response; those contributing to the maintenance of other essential services for the functioning of society; and those whose living or working conditions places them at a greater risk of infection and where infection may have disproportionate consequences • Quebec will develop an allocation hierarchy based on the severity of the pandemic, the vulnerability of the population, and the number of people judged to be in priority groups in any region • Northwest Territories will prioritize older adults, individuals who are immunocompromised due to comorbidities and/or with long-term illnesses
• Ordering procedure	• No findings from highly relevant evidence documents were identified	*Key findings from experiences of other countries* • The U.S. government developed the Vaccine Tracking System (VTrckS) to help with ordering and distribution among the U.S. jurisdictions, private partners (e.g., pharmacy chains), and other federal agencies

Broad and specific program elements	Living, full or rapid reviews about program elements	Jurisdictional scans about program elements
		Key findings from experiences in Canada and within provinces/territories • No experiences were identified
• Distribution procedures (including whether direct from centralized distributor to administering location and whether redistribution is allowed)	*Key findings from guidelines developed using a robust process* • WHO develops action steps for COVID-19 vaccine introduction to countries including guidance on planning, regulations, and service delivery (WHO technical guidance; last update 21 September 2020)	*Key findings from experiences of other countries* • Germany is currently identifying 60 facility locations to be used as delivery centres for manufacturers, and smaller cities are proposing accessible, central locations (e.g. exhibition halls) to be used as centres to stockpile vaccines • The U.S. will use a federally contracted distributor, McKesson, to manage distribution to facilities and depots (with CDC overseeing distribution of vaccines), and will allow for redistribution for refrigerated vaccines within jurisdictions *Key findings from experiences in Canada and within provinces/territories* • Quebec's Ministry of Health and Social Services will oversee the distribution of a vaccine when it becomes available
• Inventory management (including expiration date)	*Key findings from guidelines using a robust process* • WHO develops action steps for COVID-19 vaccine introduction to countries including guidance on planning, and vaccine cold chain and logistics (WHO technical guidance; last update 21 September 2020)	*Key findings from experiences of other countries* • Jurisdictions in the U.S. are responsible for developing strategies to ensure proper inventory management and approve orders from enrolled providers in settings such as public health clinics or FQHCs, hospitals, physician clinics, mobile and/or mass vaccination programs *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified
• Storage and handling (e.g., cold-chain requirements and related supplies such as liquid nitrogen)	*Key findings from guidelines developed using a robust process* • WHO develops action steps for COVID-19 vaccine introduction to countries including guidance on vaccine cold chain and logistics, communication) (WHO technical guidance; last update 21 September 2020)	*Key findings from experiences of other countries* • In the U.S., federal contractor, McKesson will maintain vaccine doses that require refrigeration (2–8ºC) or be kept frozen (-40ºC) *Key findings from experiences in Canada and within provinces/territories* • Ontario has a *Vaccine Storage and Handling Protocol* from 2018 that outlines duties and responsibilities for managing provincial vaccine inventories; however, it is unclear if/how this protocol may apply or be modified for a potential COVID-19 vaccine
• Stockpile capacities	• No findings from highly relevant evidence documents were identified	*Key findings from experiences of other countries* • The U.S. may stockpile any increased quantities of vaccines if production proceeds before a regulatory decision has been made from FDA *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified
Administration within sub-national units of health systems (for healthcare workers, essential workers, those at highest risk for developing severe illness, and the general public)		

Broad and specific program elements	Living, full or rapid reviews about program elements	Jurisdictional scans about program elements
• When (e.g., when one or a preferred vaccine becomes available)	• No findings from highly relevant evidence documents were identified	*Key findings from experiences of other countries* • While Australia is preparing for vaccine distribution, the country will develop an immunization program when a safe and effective vaccine is available *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified
• Where (e.g., doctors' offices, pharmacies, long-term care homes, and other healthcare settings; temporary clinics in workplaces, schools, congregate and other non-healthcare settings; and mobile clinics) and with what physical distancing, sanitation and other public-health measures	*Key findings from rapid reviews* • Hard-to-reach groups may be reached by vaccine delivery programs by setting up vaccination sites in familiar and accessible population-specific spaces (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020) • Socially distanced immunization clinics, drive-through clinics and small mobile-team clinics were found to be effective, but there are logistical challenges such as monitoring, and training staff that need to be considered (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020)	*Key findings from experiences of other countries* • In Germany, vaccination centres will involve mobile teams, and a second phase of vaccine distribution will be delivered to physician clinics • In terms of administration sites in the U.S., the initial phase will include settings that meet storage and handling requirements in health systems (e.g., large hospitals, pharmacies, long-term care providers, home health and Indian Health Services) and reach prioritized populations *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified
• By whom (e.g., nurses)	*Key findings from rapid reviews* • Providers must be educated about vaccines and provided with appropriate training to increase provider vaccine recommendations to patients (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020) • Individuals with or without backgrounds in medicine can be recruited to deliver vaccination through several avenues (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020)	*Key findings from experiences of other countries* • The U.S. will expand the scope of practice for state-licensed pharmacists to administer the COVID-19 vaccine *Key findings from experiences in Canada and within provinces/territories* • Quebec's plan of action for a second wave includes a mention of expanding the pool of professionals that can contribute towards vaccinating the population
• With what partnerships to reach early populations of focus (e.g., BIPOC, Indigenous leaders)	*Key findings from rapid reviews* • Community-based teaching methods and community partnerships may be leveraged to enable greater vaccination uptake by hard-to-reach populations (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020)	*Key findings from experiences of other countries* • New Zealand is involving the Ministry of Business, Innovation and Employment, Ministry of Health, MedSafe, PHARMAC, and the Ministry of Foreign Affairs and Trade as part of their COVID-19 Vaccine Strategy Task Force • The U.S. is aiming to engage stakeholders including the public and state, tribal, territorial, local partners *Key findings from experiences in Canada and within provinces/territories*

Broad and specific program elements	Living, full or rapid reviews about program elements	Jurisdictional scans about program elements
		• The Public Health Agency of Canada and the National Advisory Committee of Immunization have worked to develop an equitable, ethical and accessible framework outlining COVID-19 vaccine distribution principles to optimize public health benefits
• With what complementary vaccination-uptake supports (e.g., vaccine communication, combatting misinformation)	*Key findings from guidelines developed using a robust process* • WHO develops action steps for COVID-19 vaccine introduction to countries including guidance on vaccine communication (WHO technical guidance; last update 21 September 2020) *Key findings from rapid reviews* • Additional considerations must also be made to overcome language and cultural barriers related to COVID-19 vaccine uptake (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020) • Reliable, frequent, and tailored information about vaccines must be shared with community members through multiple platforms, including social media, traditional media, and providers (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020)	*Key findings from experiences of other countries* • In terms of communication efforts, the U.S. Centers for Disease Control and Prevention is collaborating with other HHS counterparts to start an effective vaccination campaign with the framework "Vaccinate with Confidence" *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified
• With what broader, complementary health interventions (e.g., flu vaccination, reminders for public-health measures)	• No findings from highly relevant evidence documents were identified	*Key findings from experiences of other countries* • The U.K. has no initial plans to co-administer the COVID-19 vaccine with the influenza vaccination *Key findings from experiences in Canada and within provinces/territories* • Yukon will use the local influenza-vaccination campaign as a template for the COVID-19 vaccination campaign including appointment logistics and social distancing measures
• With what second-dose reminders	• No findings from highly relevant evidence documents were identified	• No experiences were identified
• With what documentation requirements (patient-held vaccination report cards, COVID-19 apps, and electronic reporting)	• No findings from highly relevant evidence documents were identified	• No experiences were identified

Broad and specific program elements	Living, full or rapid reviews about program elements	Jurisdictional scans about program elements

• With what reporting requirements (e.g., vaccine supply, expiration dates, temperature excursion, and uptake) and supporting immunization information systems (i.e., vaccine registries) and data (e.g., to EHRs)	• No findings from highly relevant evidence documents were identified	*Key findings from experiences of other countries*
		• Reporting requirements from jurisdictions within the U.S. include the following data elements:
		  ○ administration (facility, type, address, date)
		  ○ vaccine (product, dose number, lot number, expiration, series completion, route of administration)
		  ○ recipient characteristics (race, ethnicity, IIS ID number, event ID, address, date of birth, name, sex, comorbidity status, missed appointment, serology results, vaccination refusal)
		  ○ vaccine administration (provider, site)
		
		Key findings from experiences in Canada and within provinces/territories
		• No experiences were identified

• With what surveillance and data sharing networks/structures	• No findings from highly relevant evidence documents were identified	*Key findings from experiences of other countries* • The U.S. government aims to develop an immunization information system to be used by entities (such as states and territories) that will deliver public vaccinations (with private entities using existing record systems and electronic health records) *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified
• With what safety monitoring requirements (e.g., adverse events)	*Key findings from rapid reviews* • Training staff to identify signs of adverse vaccine reactions, respond to adverse reactions, and enable quick access to emergency medical supplies are central to mitigating risks associated with vaccination (AMSTAR rating 3/9; date of literature search not reported - published 27 August 2020)	*Key findings from experiences of other countries* • The European Centre for Disease Prevention and Control released a comprehensive guide related to COVID-19 vaccine deployment and delivery program elements for the EU and the U.K., such as involving routine reporting of adverse events following immunization at regional-level and for specific population groups (which could be completed in sentinel hospitals or vaccination sites, registration systems, mobile technology) *Key findings from experiences in Canada and within provinces/territories* • Manitoba and Ontario participate in the Public Health Agency of Canada's Canadian Adverse Events Following Immunization Surveillance System • Public Health Ontario conducts provincial surveillance of adverse event reports and supports local public-health units in their investigations
• With what injury-compensation program (for vaccine	• A rapid evidence profile we recently produced focused on vaccine injury-compensation programs, and each of the three	*Key findings from experiences of other countries* • COVID-19 vaccines are covered under the Countermeasures Injury Compensation Program (CICP) in the U.S.

Broad and specific program elements	Living, full or rapid reviews about program elements	Jurisdictional scans about program elements
recipients) and liability immunity (for vaccine distributors, planners, and administering staff)	highly relevant studies found were based on the evaluation of the U.S. National Vaccine Injury Compensation Program (VICP) ○ Two of the studies reported that the program's ability to address liability were associated with improved confidence among the public-health workforce and improvement environment for vaccine research and development, but there were mixed findings related to the impact of vaccine uptake	• The U.S.' Public Readiness and Emergency Preparedness Act (PREP Act) for Medical Countermeasures Against COVID-19 will provide liability immunity (under specific requirements) to manufacturers, distributors, program planners, prescribers, administers, and State-licensed pharmacists and interns *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified
Performance indicators (particularly those adjusted from standard vaccine programs)	*Key findings from guidelines developed using a robust process* • WHO guidance document describes key considerations for monitoring and evaluation, and safety surveillance for COVID-19 vaccine delivery for countries (WHO technical guidance; last update 21 September 2020) • The Vaccine Readiness Assessment Tool (VIRAT) offers a for countries to self-monitor their readiness progress against key milestones, and a set of recommended indicators (coverage, acceptability, disease surveillance) for a COVID-19 vaccine (WHO technical guidance; last update 21 September 2020)	*Key findings from experiences of other countries* • The European Centre for Disease Prevention and Control released a comprehensive guide related to COVID-19 vaccine deployment and delivery program elements for the EU and the U.K., such as developing performance indicators (e.g., linking to immunization information systems, assessing impact, safety, effectiveness, coverage, dose type, vaccine product) *Key findings from experiences in Canada and within provinces/territories* • No experiences were identified

Table 3: COVID-19 Vaccine-Delivery Program Elements in Other Federal Jurisdictions[6]

Country	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)

Australia	• According to Australia's COVID-19 Vaccine and Treatment Strategy, agreements for the supply of COVID-19 vaccines have been made with:
	  ○ Oxford University/AstraZeneca, who will provide early access to 3.8 million doses of vaccines in January and February 2021
	  ○ University of Queensland (UQ)/CSL Limited, who will provide 51 million doses of UQ vaccine from mid-2021
	• The above agreements will secure a total of 84.8 million doses, and additional orders will be negotiated for donation or sale to other countries
	• The Government of Australia has signed a consumables contract with Becton Dickinson for the supply of needles and syringes for COVID-19 vaccine administration
	• On 23 September 2020, Australia joined the international COVAX facility, which gives them access to vaccines for up to 50% of the population under a two-dose treatment requirement
	• The Government of Australia established two COVID-19 technical advisory groups:
	  ○ The COVID-19 Vaccine and Treatments for Australia – Science and Industry Technical Advisory Group, which provides guidance on vaccine purchasing and manufacturing
	  ○ The Australian Technical Advisory Group on Immunisation (ATAGI) COVID-19 Working Group, which provides guidance to the Minister of Health regarding COVID-19 vaccines immunization programs
	• No definitive information has been found on the COVID-19 vaccine-distribution process for Australia
	• A vaccine-distribution plan is currently being prepared by the Department of Health, in consultation with state and territory governments and health services
	• Decisions on how to implement a COVID-19 vaccination program will be made if and when a safe and effective vaccine is approved
		• No additional information about a COVID-19 vaccine-delivery program in Australia was identified

Germany	• In October 2020, the Government of Germany approved a national vaccine strategy, which details:
	  ○ The identification of central vaccination centres by state
	  ○ The coupling of mobile teams in vaccination centres
		• The 16 states of Germany have until 10 November 2020 to present 60 facility locations that can be used as delivery centres for manufacturers trade fair halls and airport terminals are being proposed to be used as mass vaccination distribution centres
		• Smaller cities are proposing accessible, central locations (e.g. exhibition halls) to be used as centres to stockpile vaccines

Country	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)
	○ The identification of priority population groups by the Robert Koch Institute (e.g. front-line workers, older adults, and those with chronic conditions) ○ A second phase of vaccine distribution which will be delivered at physician clinics ○ The development of an application that will help to track any adverse effects caused by the vaccine	
Mexico	• On 26 March 2020, the G20 held a virtual summit where Mexico's president proposed that the United Nations (UN) intervene to ensure that all countries have equal access to COVID-19-related medicines, vaccines, and equipment ○ This proposal was adopted by consensus on 20 April 2020 as UN General Assembly Resolution 74/274, entitled "International cooperation to ensure global access to medicines, vaccines and medical equipment to face COVID-19" • On 10 October 2020, Mexico's government announced a $159.88 million payment to secure access to COVID-19 vaccines through the COVAX plan ○ The COVAX plan is backed by the World Health Organization (WHO), and the COVAX facility is running trials on several potential vaccines ○ The Ministry of Foreign Affairs stated that the payment will allow Mexico to acquire enough doses of a vaccine to immunize up to a fifth of the country's population	• Mexico, along with the University of Oxford and Astra Zeneca laboratories, will be one of the countries in Latin America in charge of developing and producing a COVID-19 vaccine, which should allow Mexico timely and sufficient access to the vaccine Mexico's president reports that the country's strategy is to diversify their possibilities of having access to a vaccine as soon as possible, and at an affordable cost ○ Mexico's government has memorandums of understanding with Sanofi, Johnson & Johnson's Janssen unit, CanSino Biologics Inc, and Walvax Biotechnology Co Ltd • On 24 August 2020, the Ministry of Foreign Affairs announced that 19 Mexican scientific projects focused on treatments and vaccines for COVID-19 will receive funding to accelerate their research and development
South Africa	• South Africa is currently developing a national COVID-19 vaccine strategy, with the aim to secure adequate supply of vaccines to achieve population immunity • An existing private-private partnership with Biovac will be expanded to manufacture COVID-19 vaccines	• The Africa Medical Supply platform has been established to coordinate resource procurement that will be adapted for COVID-19 vaccine distribution
Spain	• The Spanish Ministry of Health and the Spanish government is part of the centralized purchase of the COVID-19 vaccines by the European Commission	• No additional information about a COVID-19 vaccine-delivery program in Spain was identified
Switzerland	• No information about a COVID-19 vaccine-delivery program in Switzerland was identified	• No information about a COVID-19 vaccine-delivery program in Switzerland was identified
UK (while not a federal jurisdiction per se, the UK has some	• The U.K. Government Vaccine Taskforce has secured agreements to six vaccines, and has initiated vaccine delivery program elements, including: ○ deployment plans by NHS to initiate vaccination for prioritized cohorts in different settings ○ no initial plans to co-administer the COVID-19 vaccine with the influenza vaccination	• No additional information about a COVID-19 vaccine-delivery program in U.K. was identified

Country	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)
federation-style arrangements with Scotland, Wales and Northern Ireland)	○ additional funding and surge capacity for manufacturing vaccines • The U.K. government is participating in the COVAX Facility and CEPI, with a commitment of GBP$548 million commitment to deliver vaccines to both the U.K. population and low-income countries. • In a recent BMJ news release, the NHS is coordinating with health leaders to deliver vaccines to general practices and pharmacists, community vaccination centres, care homes, and other areas involving vulnerable populations ○ The NHS is preparing vaccine delivery and is prioritizing vulnerable populations such as older adults (50 years or older), individuals at care homes (residents and staff), health and social care staff, and adults with multiple chronic conditions • The European Centre for Disease Prevention and Control released a comprehensive guide related to COVID-19 vaccine deployment and delivery program elements for the EU and the U.K., including: ○ developing performance indicators (e.g., linking to immunization information systems, assessing impact, safety, effectiveness, coverage, dose type, vaccine product) and routine reporting of adverse events following immunization at regional-level and for specific population groups (which could be completed in sentinel hospitals or vaccination sites, registration systems, mobile technology) ○ administering with other public health measures (e.g., physical distancing, effective communication strategies) ○ deciding on delivery options (e.g., school-based, clinics, pharmacies, hospitals, long-term care facilities, social care facilities, mass vaccination clinics) ○ defining specific groups for prioritization (e.g., essential service employees, risk groups, socially vulnerable, age groups, outbreaks, densely populated areas)	

Country	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)

US	• The Health and Human Services (HHS) department is leading the development of vaccine development, while the Department of Defense (DoD) and the Centers for Disease Control and Prevention (CDC) will be coordinating the supply, production, and distribution of the COVID-19 vaccine as part of the U.S. government's Operation Warp Speed initiative
	• As described in the comprehensive COVID-19 vaccine-delivery program playbook (version 2.0 published 29 October 2020), the U.S. government aims to engage stakeholders (e.g., state, tribal, territorial, local partners, public), grant authorization for emergency use, ensure safe administration and availability of vaccines, and monitor the supply through IT systems
	• A centralized distribution (managed and delivered by Federal contract, McKesson) will be completed in a phased-approach, which will leverage jurisdiction-specific plans ("microplans") that involves ordering vaccines, and identifying vaccination sites and IT infrastructure specific to each jurisdiction
	• In terms of storage and handling, McKesson is capable of maintaining doses that require refrigeration (2–8°) or kept frozen (-40°C)
	• In terms of allocation and ordering, the HHS developed the Vaccine Tracking System (VTrckS) to help with distribution among the U.S. jurisdictions, private partners (e.g., pharmacy chains), and other federal agencies
	  ○ The National Academies of Sciences, Engineering, and Medicine, and the National Academy of Medicine (NAM) developed a framework for equitable allocation (e.g., limited availability of vaccines will be allocated to priority populations; large number of doses will expand to other populations and include other commercial or private partner involvement for vaccine administration)
	  ○ For example, healthcare personnel (paid and unpaid) and essential workers, adults with high-risk medical conditions, and older adults (65 years or older) are considered in the prioritized population group
	• Vaccines will be free with no out-of-pocket expenses to the U.S. population
	  ○ In terms of administering sites, the initial phase will include settings that meet storage and handling requirements and reach prioritized populations (large hospitals and health systems, pharmacy, long-term care providers, home health, Indian Health Services)
	• In terms of ancillary supplies, the government aims to assemble 6.6. million supply kits (including needles, syringes, alcohol pads, vaccination cards, limited PPE), which can support up to 660 million doses of vaccines (which
		• The comprehensive COVID-19 vaccine-delivery program playbook (version 2.0 published 29 October 2020) is aimed at jurisdictions to implement a COVID-19 vaccination program with key program planning and implementation guidance, which includes: identifying prioritized populations, providing provider training, understanding administration capacity, allocation, ordering, distribution and inventory management, handling and storing vaccines, developing or integrating immunization information systems, and developing effective vaccination communication campaigns
		• In terms of administration sites, states will receive an allocation of vaccines from the federal government, with states responsible for managing and approving orders from enrolled providers in settings such as public health clinics or FQHCs, hospitals, physician clinics, mobile and/or mass vaccination programs
		• In terms of the COVID-19 vaccines, jurisdictions will need to develop strategies to ensure proper dosing intervals (two doses, either 21 or 28 days apart)
		• Jurisdictions can redistribute refrigerated vaccines

Country	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)

	U.S. jurisdictions will need to enroll in the federal government to receive these supplies)
	• In terms of performance indicators and monitoring, the U.S. government aims to develop an immunization information system to be used by entities (such as states and territories) that will deliver public vaccinations (with private entities using existing record systems and electronic health records), with the following required data elements:
	  ○ administration (facility, type, address, date)
	  ○ vaccine (product, dose number, lot number, expiration, series completion, route of administration)
	  ○ recipient characteristics (race, ethnicity, IIS ID number, event ID, address, date of birth, name, sex, comorbidity status, missed appointment, serology results, vaccination refusal)
	  ○ vaccine administration (provider, site)
	• In terms of communication efforts, CDC is collaborating with other HHS counterparts to start an effective vaccination campaign with the framework "Vaccinate with Confidence"
	• In terms of vaccine injury-compensation programs, COVID-19 vaccines are covered under the Countermeasures Injury Compensation Program (CICP)
	• The Declaration Under the Public Readiness and Emergency Preparedness Act (PREP Act) for Medical Countermeasures Against COVID-19 will provide liability immunity (under specific requirements) to manufacturers, distributors, program planners, prescribers, administers, and State-licensed pharmacists and interns	

Table 4: COVID-19 Vaccine-Delivery Program Elements in Select Unitary States[6]

Country	Program Elements (and rationale if provided)

France	• On 5 June 2020, the Government of France announced an inclusive vaccine alliance with Germany, Italy, and the Netherlands.
	  ○ Support vaccine development
	  ○ Gather supplies
	  ○ Secure mass production agreements with pharmaceutical companies (e.g. a total of 400 million vaccine doses produced by AstraZeneca)
	  ○ Distribute doses based on the participating countries' population
	• As a leading contributor in the Access to COVID-19 Tools Accelerator, the Government of France has announced an investment of €500 million to help support the development and production of COVID-19 vaccines

Japan	• The government of Japan is involved with Coalitions for Epidemic Preparedness Innovation (CEPI), which is designed to promote international cooperation in the development of a COVID-19 vaccine • The government of Japan submitted a commitment agreement to the COVAX Facility, which is an international initiative to provide equitable access and distribution of COVID-19 vaccines

New Zealand	• The government of New Zealand released a COVID-19 Vaccine Strategy that involves engaging national partners (Vaccine Alliance Aotearoa New Zealand – Ohu Kaupare Huaketo and Biocell) and international collaboration (COVAX Facility, CEPI) for research, development, and production
	  ○ NZ$5 million was allocated to support local production of a potential COVID-19 vaccine candidate
	• Implementation of the strategy is led by the COVID-19 Vaccine Strategy Task Force including the Ministry of Business, Innovation and Employment, Ministry of Health, MedSafe, PHARMAC, and the Ministry of Foreign Affairs and Trade
	The Ministry of Health is developing a COVID-19 immunization program guided by experts at WHO and expert groups within New Zealand
	  ○ Vaccines are prioritized to achieve population immunity and protect groups such as Māori, Pacific peoples, and population groups at risk of COVID-19
	  ○ Development will entail considerations such as delivery, distribution, and supply chain management (no further details provided)
	• An agreement with Pfizer was secured to supply 1.5 million doses of vaccine (that will cover 750,000 people in New Zealand)

Table 5: COVID-19 Vaccine-Delivery Program Elements in Canada[6]

Province/territory	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)
Pan-Canadian	• The federal public health response plan stated that once a safe and efficacious vaccine is available it will be distributed in a targeted manner • The Public Health Agency of Canada and the National Advisory Committee of Immunization have worked to develop an equitable, ethical and accessible framework outlining COVID-19 vaccine distribution principles to optimize public health benefits • The preliminary guidance on key populations for early COVID-19 immunization report stated that sequencing of populations and sub-prioritization within populations will be based on a population-based risk-benefit analysis of vaccine supply and COVID-19 epidemic conditions when the vaccine becomes available ○ Key populations will include: those at high risk of severe illness and death from COVID-19; those most likely to transmit COVID-19 to those at high risk of severe illness and death and workers essential to maintaining the COVID-19 response; those contributing to the maintenance of other essential services for the functioning of society; and those whose living or working conditions places them at a greater risk of infection and where infection may have disproportionate consequences • The preliminary guidance report also states that jurisdictions should begin planning for the implementation of a COVID-19 vaccination program, including monitoring of safety, effectiveness and coverage of the vaccine, and effective immunization of populations in remote and/or isolated communities	• No additional information about a COVID-19 vaccine-delivery program in at the pan-Canadian level was identified
British Columbia	• No information about a COVID-19 vaccine-delivery program in British Columbia was identified	• No information about a COVID-19 vaccine-delivery program in British Columbia was identified
Alberta	• No information about a COVID-19 vaccine-delivery program in Alberta was identified	• No information about a COVID-19 vaccine-delivery program in Alberta was identified
Saskatchewan	• No information about a COVID-19 vaccine-delivery program in Saskatchewan was identified	• No information about a COVID-19 vaccine-delivery program in Saskatchewan was identified
Manitoba	• Manitoba participates in the Public Health Agency of Canada's Canadian Adverse Events Following Immunization Surveillance System Through this system, data for adverse events are reviewed by Manitoba Health, Seniors and Active Living and then forwarded to the Public Health Agency of Canada	No additional information about a COVID-19 vaccine-delivery program in Manitoba was identified

Province/territory	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)
	Reports of adverse events following immunization are received by regional Medical Officers of Health from providers and the provincial pediatric hospital-based Immunization Monitoring Program ACTive (IMPACT) Regional Medical Officers of Health make recommendations based on these reports and forward them to the vaccine recipient's immunization provider and Manitoba Health, Seniors and Active Living.	
Ontario	• Ontario participates in the Public Health Agency of Canada's Canadian Adverse Events Following Immunization Surveillance System • Public Health Ontario forwards data on adverse events following immunization to the national system once a month • Local public-health units receive initial reports on adverse events from healthcare providers, patients, and the provincial pediatric hospital-based IMPACT • Local public health units process reports and upload information into the provincial integrated Public Health Information System • Public Health Ontario conducts provincial surveillance of adverse event reports and supports local public-health units in their investigations	• Ontario has a Vaccine Storage and Handling Protocol from 2018 that outlines duties and responsibilities for managing provincial vaccine inventories, however, it is unclear if/how this protocol may apply or be modified for a potential COVID-19 vaccine
Quebec	No additional information about a COVID-19 vaccine-delivery program in Quebec was identified	• The Ministry of Health and Social Services developed an intervention plan for municipalities in the case of an epidemic or pandemic • This plan states that the Ministry of Health and Social Services will be in charge of the distribution of a vaccine when it becomes available, and a priority hierarchy will be developed based on the severity of the pandemic, the vulnerability of the population, and the number of people judged to be in priority groups in any region • The Ministry's plan of action for a second wave includes a mention of expanding the pool of professionals that can contribute towards vaccinating the population • In preparation for the COVID-19 vaccine, Quebec's Health Ministry is requesting additional assistance from other health professionals (such as psychologists, social workers, and dental hygienists) to administer vaccines.
New Brunswick	• No additional information about a COVID-19 vaccine-delivery program in New Brunswick was identified	• The New Brunswick Provincial Pandemic Coordination Plan, outlines that priority groups will be identified to receive vaccines
Nova Scotia	• No information about a COVID-19 vaccine-delivery program in Nova Scotia was identified	• No information about a COVID-19 vaccine-delivery program in Nova Scotia was identified
Prince Edward Island	• No additional information beyond the content in the adjacent cell about a COVID-19 vaccine-delivery program in Prince Edward Island was identified	• No additional information beyond the content in the adjacent cell about a COVID-19 vaccine-delivery program in Prince Edward Island was identified

Province/territory	Program elements that are being harmonized across constituent units of federations (and rationale if provided)	Program elements that are not being harmonized across constituent units of federations (and rationale if provided)
Newfoundland and Labrador	• No information about a COVID-19 vaccine-delivery program in Newfoundland and Labrador was identified	• No information about a COVID-19 vaccine-delivery program in Newfoundland and Labrador was identified
Yukon	• On 9 September 2020, Yukon's Chief Medical Officer of Health stated that discussions on early planning for COVID-19 vaccine implementation had begun with his counterparts around the country, as well as with the Public Health Agency of Canada	• On 9 September 2020, Yukon's Chief Medical Officer stated that the local influenza vaccine campaign (October 2020) would be used as a template for the COVID-19 vaccine • Much of the increased safety measures introduced for the dissemination of the influenza vaccine, including appointment logistics and social distancing measures, will be similar when the COVID-19 vaccine is available
Northwest Territories	• No additional information about a COVID-19 vaccine-delivery program in Northwest Territories was identified	• It is unclear whether a specific COVID-19 vaccine delivery program has been developed in the Northwest Territories • Under the Government of NWT response to COVID-19, The Relaxing Phase 4 Plan states that COVID-19 vaccines for seniors, people who are immunocompromised due to comorbidities and people with long-term illnesses must be prioritized before lifting public health restrictions
Nunavut	• No information about a COVID-19 vaccine-delivery program in Nunavut was identified	• No information about a COVID-19 vaccine-delivery program in Nunavut was identified

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