McMaster University | HEALTH FORUM

COVID-END COVID-19 Evidence Network to support Decision-making ... in Canada

Appendices for COVID-19 Living Evidence Profile #1

(Version 4: 26 February 2021)

Appendix 1: Methodological details

We use a standard protocol for preparing living evidence profiles (LEP) to ensure that our approach to identifying research evidence as well as experiences from other countries and from Canadian provinces and territories are as systematic and transparent as possible in the time we were given to prepare the profile.

Identifying research evidence

For each LEP, we search our continually updated inventory of best evidence syntheses and guide to key COVID-19 evidence sources for:

1) guidelines developed using a robust process (e.g., GRADE);
2) full systematic reviews;
3) rapid reviews;
4) guidelines developed using some type of evidence synthesis and/or expert opinion;
5) protocols for reviews or rapid reviews that are underway;
6) titles/questions for reviews that are being planned; and
7) single studies (when no guidelines, systematic reviews or rapid reviews are identified).

For the first version of this LEP, we also searched Health Systems Evidence (www.healthsystemsevidence.org) and HealthEvidence (www.healthevidence.org), to identify any relevant evidence documents that might have relevance to the COVID-19 vaccine roll-out, but were produced before the pandemic, given that the other sources searched were specific to COVID-19. In Health Systems Evidence, we searched for overviews of systematic reviews, systematic reviews of effects, systematic reviews addressing other questions, and protocols for systematic reviews, that may provide insights about vaccine-delivery systems by searching for 'vaccine' using the filters for 'public health' (under health-system sectors). In HealthEvidence, we searched using the categories for 'Immunization' and 'Policy and Legislation' under the intervention strategy filter combined with 'Communicable Disease/Infection' category under the topic filter.

Each source for these documents is assigned to one team member who conducts hand searches (when a source contains a smaller number of documents) or keyword searches to identify potentially relevant documents. A final inclusion assessment is performed both by the person who did the initial screening and the lead author of the rapid evidence profile, with disagreements resolved by consensus or with the input of a third reviewer on the team. The team uses a dedicated virtual channel to discuss and iteratively refine inclusion/exclusion criteria throughout the process, which provides a running list of considerations that all members can consult during the first stages of assessment.

During this process we include published, pre-print and grey literature. We do not exclude documents based on the language of a document. However, we are not able to extract key findings from documents that are written in languages other than Chinese, English, French or Spanish. We provide any documents that do not have content available in these languages in an appendix containing documents excluded at the final stages of reviewing.

Identifying experiences from other countries and from Canadian provinces and territories

For each LEP, we collectively decide on what countries to examine based on the question posed. For other countries we search relevant sources included in our continually updated guide to key COVID-19 evidence sources. These sources include government-response trackers that document national responses to the pandemic. In addition, we conduct searches of relevant government and ministry websites. In Canada, we search websites from relevant federal and provincial governments, ministries and agencies (e.g., Public Health Agency of Canada).

While we do not exclude countries based on language, where information is not available through the government-response trackers, we are unable to extract information about countries that do not use English, Chinese, French or Spanish as an official language.

Assessing relevance and quality of evidence

We assess the relevance of each included evidence document as being of high, moderate or low relevance to the question. We then use a colour gradient to reflect high (darkest blue) to low (lightest blue) relevance.

Two reviewers independently appraise the methodological quality of systematic reviews and rapid reviews that are deemed to be highly relevant. Disagreements are resolved by consensus with a third reviewer if needed. AMSTAR rates overall methodological quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. High-quality reviews are those with scores of eight or higher out of a possible 11, medium-quality reviews are those with scores between four and seven, and low-quality reviews are those with scores less than four. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to health-system arrangements or to economic and social responses to COVID-19. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered 'high scores.' A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8.

Preparing the profile

Each included document is hyperlinked to its original source to facilitate easy retrieval. For all included guidelines, systematic reviews, rapid reviews and single studies (when included), we prepare a small number of bullet points that provide a brief summary of the key findings, which are used to summarize key messages in the text. Protocols and titles/questions have their titles hyperlinked given that findings are not yet available. We then draft a brief summary that highlights the total number of different types of highly relevant documents identified (organized by document), as well as their key findings, date of last search (or date last updated or published), and methodological quality.

Appendix 2a: Key findings from new evidence documents that address the question, organized by document type and sorted by relevance to the question and COVID-19

Type of document	Relevance to question	Key findings	Recency or status

Guidelines developed using a robust process (e.g., GRADE)	• Securing and distributing a reliable supply of vaccines and ancillary supplies
	  ○ National purchasing
	  ○ Delivery to country
	  ○ Distribution within country and to administration sites
	  ○ Storage and handling within country
		• The COVID-19 vaccine introduction and deployment costing tool (CVIC tool) is intended to help governments, partners, and other stakeholders estimate the introductory and deployment cost of COVID-19 vaccine procurement and service delivery, before detailed planning can take place
		  ○ These costs include central activities, international and domestic logistics, service delivery, and demand generation and communications
		  ○ The tool focuses on operational costs and selected capital expenditures
		• Countries can also use the tool to prepare budgets for vaccination beyond 2021 as COVID-19 vaccine is deployed
		Source (World Health Organization)
			Published 20 February 2021

	• Surveillance, monitoring and evaluation, and reporting
	  ○ Documenting vaccine-related opinions
	  ○ Identifying sources of vaccine hesitancy
		• This guidebook provides four tools to understand intentions for receiving the COVID-19 vaccine for prioritized groups in the population, based on the WHO Strategic Advisory Group of Experts on Immunization (SAGE) Roadmap for prioritizing uses of COVID-19 vaccines in the context of limited supply that includes surveys and qualitative interviews of adults and health workers
		• Intended users of this guidebook are immunization programme managers, researchers, and others involved in collecting, analyzing and using data for COVID-19 vaccine programme planning and evaluation
		• There are three processes outlined in the guidebook that look at planning, investigating and
			Published 3 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		acting of methods and best practices to support implementation of the surveys, interview guides, and the data collection and analysis • Regional and national vaccine roll-out plans should use this guidebook to routinely gather and use data that will offer insights into how to continually improve implementation strategies and tailor communication approaches Source (World Health Organization)	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Delivery of the intervention ▪ By whom ▪ Modality of delivery o Content of messaging ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 (including duration of protection) and protection against transmission (and other factors that may contribute to vaccine acceptance and hesitancy) ▪ Myths and misinformation about vaccines	• This interim guidance provides an overview of key activities and considerations to achieve high acceptance and uptake of COVID-19 vaccines and it includes the following aspects: o coordination and planning o implementation of mass media plan o social media monitoring and misinformation management o crisis communications o advocacy and stakeholder engagement o community engagement and social mobilization o capacity building o monitoring, learning and evaluation Source (World Health Organization)	Published 31 January 2021
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Target of intervention ▪ General public	• The document provides tips and discussion points for service providers, health and community workers, volunteers and community networks to discuss vaccine delivery with the general public living within communities • Specific details on communicating with older adults aged 65 years and older and people with comorbidities are provided Source (World Health Organization)	Published 31 January 2021
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Target of intervention	• The communication planning template provides countries with an outline of communication activities that should be considered when introducing COVID-19 vaccines, with relevant	Published 31 January 2021

Type of document	Relevance to question	Key findings	Recency or status
	▪ General public	categories such as target audience, budget breakdown, timelines, and responsibilities Source (World Health Organization)	
	• Securing and distributing a reliable supply of vaccines and ancillary supplies o Delivery to country o Inventory management within country o Distribution within country and to administration sites o Storage and handling within country • Surveillance, monitoring and evaluation, and reporting o Documenting vaccine status o Documenting adverse events and follow-up	• This guideline outlines the step-by-step process for National Deployment and Vaccination Plan for COVID-19 vaccines (NDVP) development, submission and review, which is a helpful resource for countries as they prepare and submit their NDVPs to the Partners Platform • This guideline should be used in conjunction with: o the Standard Review Form for NDVP, which enables countries to prepare their NDVPs for the review process and supports regions in conducting a consistent and uniform assessment of the submitted NDVPs o the Considerations for forming a regional COVID-19 review committee (RRC), which provides insight on how these committees can be established and conduct the review process for NDVPs Source (World Health Organization)	Published 29 January 2021
	• Securing and distributing a reliable supply of vaccines and ancillary supplies o Distribution within country and to administration sites • Allocating vaccines and ancillary supplies equitably o Allocation rules ▪ Residents in long-term care homes and other congregate-care settings ▪ Essential workers (beyond front-line healthcare workers) and/or those in work environments that put them at elevated risk	• This interim guidance is to provide guidance on infection prevention and control (IPC) in long-term care facilities (LTCFs) in the context of COVID-19 • WHO recommends that LTCFs should be a high priority for COVID-19 vaccine deployment, and clear plans should be made in advance o The initial high-priority targets for immunization should be health workers (including those working in LTCFs and the private sector), older people and those with underlying health conditions • Timely communications and plans between LTCFs and the local health authorities to determine the logistics of how the COVID-19	Published 8 January 2021

Type of document	Relevance to question	Key findings	Recency or status
		vaccines will be deployed in their jurisdictions are important o Considerations should include communications with residents and next of kin, consent needs, storage, administration, disposable supplies, waste management, management of side-effects, maintaining data and ensuring timely provision of second doses Source (World Health Organization)	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Delivery of the intervention ▪ By whom o Content of messaging ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 (including duration of protection) and protection against transmission (and other factors that may contribute to vaccine acceptance and hesitancy) • Surveillance, monitoring and evaluation and reporting o Documenting adverse events and follow-up o Infrastructure to enable surveillance, monitoring and evaluation	• The manual provides an overview of safety implications and immunization strategies, how to identify all relevant stakeholders, provide guidance on safety data collection, data elements of pharmacovigilance preparedness, developing surveillance systems, evidence-based programmatic decisions, and provide support for vaccine safety communication Source (World Health Organization)	Published 22 December 2020
	• Allocating vaccines and ancillary supplies equitably o Allocation rules ▪ Children (school aged) ▪ People who have already had confirmed COVID-19 • Administering vaccines in ways that optimize timely uptake o With what broader, complementary health interventions	• At its October 2020 meeting, the Advisory Committee on Immunization Practices (ACIP) approved the 2021 Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger o ACIP issued an interim recommendation for use of Pfizer-BioNTech COVID-19 vaccine in persons aged ≥16 years at its December 12, 2020, emergency meeting	Published 12 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		○ ACIP approved an amendment to include COVID-19 vaccine recommendations in the child and adolescent immunization schedule Source (Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention)	
	• Allocating vaccines and ancillary supplies equitably ○ Allocation rules ▪ Mass public • Administering vaccines in ways that optimize timely uptake ○ With what broader, complementary health interventions	• At its October 2020 meeting, the ACIP approved the 2021 Recommended Immunization Schedule for Adults Aged 19 Years or Older ○ ACIP issued an interim recommendation for use of Pfizer-BioNTech COVID-19 vaccine in persons aged ≥16 years at its December 12, 2020, emergency meeting ○ ACIP issued an interim recommendation for use of Moderna COVID-19 vaccine in persons aged ≥18 years at its December 19, 2020, emergency meeting Source (Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention)	Published 12 February 2021
Rapid reviews	• Allocating vaccines and ancillary supplies equitably ○ Approaches to developing and adjusting allocation rules (e.g., citizen- and stakeholder-engagement processes) ○ Allocation rules (to priority populations, including those listed below, as well as to 'lower levels' in a federation and/or to providers who can reach priority populations) ▪ People at increased risk of severe COVID-19 (e.g., older and/or frail adults, those with chronic health conditions)	• Belgium, Canada, Finland, Germany, Sweden, Switzerland, and Wales only have a single category for vulnerable people, whereas other jurisdictions (such as Australia, England and Northern Island) have categorized vulnerable people according to who is at higher risk ○ Denmark has stratified its vulnerable population based on age • Across multiple jurisdictions, people with who are older, have chronic conditions and/or are immunosuppressed are listed as vulnerable groups and given priority for vaccination ○ Adults older than 18 years of age with Down's syndrome are considered a high-risk group	Last update 18 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		○ Other jurisdictions have also defined risk and vulnerability according to ethnicity, smoking status, BMI and pregnancy ○ In Denmark, vaccines can be made available to caregivers if they care for someone in a high-risk group • Within the context of vaccine policy development, Belgium has hosted a citizen participation project to define the national vaccine strategy Source (Health Information Quality and Authority)	
Guidance developed using some type of evidence synthesis and/or expert opinion	• Securing and distributing a reliable supply of vaccines and ancillary supplies ○ Inventory management within country • Allocating vaccines and ancillary supplies equitably ○ Allocation rules • Administering vaccines in ways that optimize timely uptake ○ With what explicit effort to leverage existing health-system arrangements • Surveillance, monitoring and evaluation, and reporting ○ Infrastructure to enable surveillance, monitoring and evaluation	• All 30 EU/EEA countries have initiated national vaccination campaigns, with 26 countries declaring that vaccination is not mandatory • Most of the EU/EEA countries are administering Pfizer-BioNTech, Cormirnaty, and Moderna • Most countries will not extend the time between the first and second dose (14 countries), while other countries are still undecided • As of 29 January 2021, 21.5 to 100% of doses distributed have been administered across the EU countries • All EU/EEA countries prioritized population groups with a higher chance of developing severe disease (e.g., healthcare and front-line workers, elderly people, residents and personnel in long-term care facilities, persons with multiple chronic conditions, social care personnel), with some including other essential public workers such as police, firefighters, and teachers • Most of the countries have adequate storage and management of vaccines, with 20 countries stating that health authorities are leading and coordinating the deployment of vaccines	Last updated 1 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		• Electronic immunization registries to monitor both individual and population-level vaccine uptake are used in 21 countries, with five countries utilizing an ad-hoc electronic system, four countries using electronic immunization cards, and one country recording them manually • Information on which vaccine product and when it was administered are important data elements, in addition to recording any adverse event following immunization • Challenges to roll-out include: shortage of equipment (e.g., needles and syringes), misinformation, monitoring systems with consolidating data, logistical challenges, and limited vaccine supply • Extensive coordination between national and local authorities and multidisciplinary participation is required Source (European Centre for Disease Prevention and Control)	
	• Surveillance, monitoring and evaluation, and reporting ○ Infrastructure to enable surveillance, monitoring and evaluation	• The report provides an update on vaccine distribution within EU/EEA countries as of 21 February 2021 • Germany and France have highest number of doses distributed by manufacturers • Malta, Denmark, and Finland have the highest percentage of vaccine uptake of the first dose among their populations (6.3 to 10.6%), with an overall median of 5.2% from 29 reported EU/EEA countries • Full vaccination of EU/EEA countries range from 0.5 to 4.5%, with an overall median of 2.5% from 29 reported EU/EEA countries	Last updated 21 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		• Uptake of the first dose among individuals aged 80 years or older is at a median of 25.1% (range: 0.4 to 77.2%) Source (European Centre for Disease Prevention and Control)	
	• Surveillance, monitoring and evaluation, and reporting ○ Infrastructure to enable surveillance, monitoring and evaluation	• EU/EEA countries described their deployment plans albeit they are all in various stages of vaccine administration • Most of the countries described that cross-government arrangements were made, such as establishing a task force and electronic systems for logistics management and vaccine registries • Vaccination communication campaigns are in progress or launched, which includes the use of social media to support roll-out • Countries had the opportunity to compare their vaccination roll-out with an ideal vaccine deployment ('stress test') in order to identify gaps and the robustness of their current efforts Source (European Centre for Disease Prevention and Control)	Published 3 February 2021

	• Surveillance, monitoring and evaluation and reporting
	  ○ Documenting adverse events and follow-up
		• This guideline proposed a pragmatic management approach based on clinical presentation, vaccination delivery, and imaging findings, aiming to mitigate the impact of coronavirus disease (COVID-19) vaccinations on patients undergoing breast imaging examination
		  ○ In the settings of screening mammography, screening MRI, and diagnostic imaging work-up of breast symptoms, with no imaging findings beyond unilateral axillary adenopathy ipsilateral to recent (prior six weeks) vaccination, we report the adenopathy as benign with no further imaging indicated if no nodes are palpable six weeks after the last dose
			Published 22 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		○ For patients with palpable axillary adenopathy in the setting of ipsilateral recent vaccination, clinical follow-up of the axilla is recommended ○ In all these scenarios, axillary ultrasound is recommended if clinical concern persists six weeks after vaccination ○ In patients with recent breast cancer diagnosis in the pre- or peri-treatment setting, prompt recommended imaging is encouraged as well as vaccination (in the thigh or contralateral arm) • Source (Harvard Medical School, Massachusetts General Hospital Department of Radiology)	
	• Administering vaccines in ways that optimize timely uptake ○ With what safety monitoring requirements (e.g., adverse events) • Allocating vaccines and ancillary supplies equitably ○ People for whom vaccine safety and effectiveness has not yet been established ○ People at significant risk for severe allergic reaction	• While vaccine clinical trials are in the process of including children, one clinical trial found that the vaccine is safe for children between 3-17 years of age • The WHO and American Academy of Pediatrics recommend providing pregnant women in priority groups with the choice to be vaccinated • It is unclear when a booster shot for COVID-19 will be needed again after fully vaccinating individuals • The CDC recommends that immunocompromised people only receive the COVID-19 vaccine if they have no contraindications. ○ It is also suggested that immunocompromised individuals receive information about the unknown profile of the COVID-19 vaccine, it's risks and effectiveness in immunocompromised groups ○ The CDC suggests that all individuals, regardless of previous infections with COVID-19, be vaccinated ○ For individuals receiving passive antibody therapy, the CDC recommends deferring	Published 10 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		vaccination until more information on the vaccine safety is made available Source (Knowledge to Policy Center)	

	• Surveillance, monitoring and evaluation and reporting
	  ○ Identifying sources of vaccine hesitancy
		• This document is produced for the World Economic Forum Davos 21 virtual meeting
		• Vaccine hesitancy was not being driven by the public buying into conspiracy theories, it was more likely to be reasonable, thoughtful people being hesitant because they did not know what they needed to know to make the right decision
		  ○ Many of the world's citizens reported they were worried about the speed at which new vaccines have been approved and their potential health risks, both immediate and longer-term
		• Unmet demand threatens to increase public anxiety and the emerging challenge will be convincing large segments of the public it is reasonable and acceptable to patiently wait their turn
		• Using a behavioural model that looks at motivation, ability, processing (information) and social context, this research explored which messages are most strongly related to willingness to get vaccinated
		  ○ Messages that focus on safety and efficacy of these 'new' vaccine technologies
		  ○ Creating momentum around vaccines as 'normal behaviour'/ acceptability and consistency with past actions
		  ○ Addressing regret
		  ○ Build positive social identities and play to moral obligation
		  ○ Confidence in decision versus needing more information
		Source (Ipsos)
			Published 25 January 2021

Type of document	Relevance to question	Key findings	Recency or status
Protocols for reviews that are underway	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	• Examining factors influencing COVID-19 vaccine acceptance Source	Anticipated completion date 15 March 2021
	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	• Perceptions of vaccinations among older adults from minority ethnic populations Source	Anticipated completion date 31 March 2021
	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	• Examining factors of COVID-19 vaccine hesitancy among healthcare workers Source	Anticipated completion date 19 April 2021
	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	• Evaluating COVID-19 vaccine hesitancy Source	Anticipated completion date 31 May 2021
	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	• Examining vaccine hesitancy in Ireland Source	Anticipated completion date 1 June 2021
	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	Exploring attitudes and views towards COVID-19 vaccines Source	Anticipated completion date 15 August 2021
	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	• Exploring COVID-19 vaccine hesitancy and in ethnic minority populations Source	Anticipated completion date 30 September 2021
	• Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions	• Examining COVID-19 vaccine hesitancy in low and middle-income countries Source	Anticipated completion date 31 October 2021

Single studies in areas where no reviews were identified	• Securing and distributing a reliable supply of vaccines and ancillary supplies
	  ○ National purchasing
	  ○ Delivery to country
	  ○ Inventory management within country
	  ○ Storage and handling within country
	• Allocating vaccines and ancillary supplies equitably
	  ○ Ensuring equity
		• The study describes key characteristics of 26 candidate COVID-19 vaccines, including efficacy levels, dosing regimens, storage requirements, prices, production capacities in 2021, and stocks reserved for LMIC countries
		• The four dimensions of effective global immunization include development and production, affordability, allocation, and deployment
			Published 21 February 2021

Type of document	Relevance to question	Key findings	Recency or status

	• Surveillance, monitoring and evaluation and reporting
	  ○ Documenting vaccine-related opinions
	  ○ Identifying sources of vaccine hesitancy
		• The vaccines produced by Johnson & Johnson are likely easier to deploy in LMIC countries and resource-restrained settings given that it only needs to be refrigerated and is one-dose only
		• The diverse options of vaccines are likely needed to control the pandemic
		Source	

	• Surveillance, monitoring and evaluation, and reporting
	  ○ Documenting vaccine-related opinions
	  ○ Identifying sources of vaccine hesitancy
		• Initial vaccination of health care workers is essential because of their high-risk of exposure, and their potential to act as role models however, many health care workers are reluctant to receive the COVID-19 vaccine.
		• A survey of 8,634 non-physician health care workers in Ontario, Canada measured intention to vaccinate, beliefs and sources of influence related to the COVID-19 vaccine.
		• The survey found that sociodemographic factors associated with unwillingness to vaccinate included younger age (<40 years) and attainment of less than a high school diploma.
		• Vaccination non-intent was found to be associated with beliefs that vaccination was not required because of one's own good health, lower confidence that the COVID-19 vaccine would protect their family and friends and that getting vaccinated was not a professional responsibility.
		• Vaccination non-intent was also found to be not associated with mistrust of how fast the vaccines were developed and safety concerns.
		• Public health websites and other health care providers were found to be trusted sources of COVID-19 vaccination information.
		• Vaccination intent was found to be associated with direct financial supports, such as paid sick days).
			Last edited 23 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		• Efforts should be directed towards the identified factors associated with vaccination non-intent to increase uptake among non-physician health care workers. Source	
	• Surveillance, monitoring and evaluation, and reporting o Documenting vaccine-related opinions o Identifying sources of vaccine hesitancy	• In the United States, underserved communities, which include Blacks and Latinx, are disproportionately affected by COVID-19, making widespread vaccination essential for curbing the pandemic. • This cross-sectional survey of 948 participants aimed to estimate the prevalence of COVID-19 vaccine hesitancy, describe attitudes related to vaccination and identify correlates among racial minority and marginalized populations in North Carolina, United States. • The survey found that the prevalence of vaccine hesitancy was 68.9% including 62.7%, 74% and 59.5% among Whites, Blacks and Latinx, respectively. • Vaccine hesitancy was found to decline over time, but remained high for Blacks. • 51.2% of respondents reported that they were concerned about vaccine safety, and only 23.7% of respondents reported that they would trust health care providers with information about the COVID-19 vaccine. • Factors associated with vaccine hesitancy were found to include being female, being black, calendar month, safety concerns and government distrust. • In summary, vaccine hesitancy was found to occur predominantly in minority communities of North Carolina. This must be addressed to	Last edited 21 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		successfully implement successful mass immunization programs. Source	

	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
		• The purpose of this study was to determine the demographic distribution of individuals in the US that are currently prioritized for the COVID-19 vaccine
		• Results demonstrated that the majority of individuals currently prioritized for the COVID-19 vaccine are "woman, non-Hispanic Black, and young-middle aged adults"
		  ○ That said, we must recognize that there is a demographic gap between those who have actually received the vaccine and those who are prioritized to receive it
		• The authors stressed the importance of investing in strategies that address barriers to vaccine access, as well as communication strategies to reduce vaccine hesitancy so we may effectively deliver vaccines to priority populations
		Source
			Preprint (Posted 07 February 2021)

	• Allocating vaccines and ancillary supplies equitably
	  ○ Approaches to developing and adjusting allocation rules
	  ○ Allocation rules
	  ▪ Front-line healthcare workers
	  ▪ Residents in long-term care homes and other congregate-care settings
	  ▪ Essential workers (beyond front-line healthcare workers) and/or those in work environments that put them at elevated risk
	  ▪ Children (school aged)
	  ▪ Mass public
	  ▪ People for whom vaccine safety and effectiveness has not yet been established
		• This study is to define the key target populations, their size, and priority for a COVID-19 vaccination program in the context of China
		  ○ Essential workers, including staff in the healthcare, law enforcement, security, nursing homes, social welfare institutes, community services, energy, food and transportation sectors, and overseas workers/students (49.7 million) could be prioritized for vaccination to maintain essential services in the early phase of a vaccination program
		  ○ Subsequently, older adults, individuals with underlying health conditions and pregnant women (563.6 million) could be targeted for
			Published 10 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		vaccination to reduce the number of individuals with severe COVID-19 outcomes ○ In later stages, the vaccination program could be further extended to target adults without underlying health conditions and children (784.8 million), in order to reduce symptomatic infections and/or to stop virus transmission • A general framework is proposed to assist Chinese policymakers in the design of a vaccination program and to inform other national and regional strategies for use of COVID-19 vaccines, especially in low- and middle-income countries Source	
	• Surveillance, monitoring and evaluation and reporting ○ Identifying sources of vaccine hesitancy	• From September to December 2020, intent to receive COVID-19 vaccination in the United States increased from 39.4% to 49.1% among adults and across all priority groups, and non-intent decreased from 38.1% to 32.1% ○ Younger adults, women, non-Hispanic Black adults, adults living in nonmetropolitan areas, and adults with less education and income, and without health insurance continue to have the highest estimates of non-intent to receive COVID-19 vaccination • The main reasons most frequently cited were concerns about side effects and safety of the COVID-19 vaccine (29.8%), planning to wait to see if the vaccine is safe and consider receiving it later (14.5%), lack of trust in the government (12.5%), and concern that COVID-19 vaccines were developed too quickly (10.4%) Source	Published 12 February 2021
	• Administering vaccines in ways that optimize timely uptake ○ With what broader, complementary health interventions	• Medicare beneficiaries exhibited decreased rates of vaccinations for the following four vaccines during the COVID-19 pandemic: ○ pneumococcal conjugate vaccine;	Published 19 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		○ pneumococcal polysaccharide vaccine; ○ tetanus-diphtheria-acellular pertussis vaccine; and ○ recombinant zoster vaccine • When compared to its corresponding week(s) in 2019, vaccination rates decreased between: 1) 25% and 62% among beneficiaries aged 65 years and older in March 2020; and 2) 70% and 89% April 2020 • Vaccination rates incrementally increased between the period of May and July 2020 Source	
	• Administering vaccines in ways that optimize timely uptake ○ With what broader, complementary health interventions	• The overall use of vaccine services in Lebanon declined by 31% since the start of the COVID-19 pandemic ○ The private sector experienced decreases of 46.9%, with the majority of this reduction occurring between the months of February and April 2020 ○ The public sector experienced decreases of 20% in the number of vaccine doses administered • Substantial decreases in vaccination rate were observed in oral poliovirus, hepatitis A, measles, and pneumococcal conjugate vaccines respectively Source	Published 17 February 2021
	• Administering vaccines in ways that optimize timely uptake ○ With what explicit effort to leverage existing health-system arrangements	• This study is to summarize the results of a strategic planning meeting held in 2017 that focused on operationalizing pandemic influenza vaccinations at a regional supermarket chain pharmacy • Topics addressed included: establishing a memorandum of understanding with the state, developing an internal emergency response plan, scaling the pandemic response, considerations for pharmacy locations, staffing for pandemic	Published 16 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		response, pandemic vaccine-specific training, pharmacy workflow, billing considerations, documentation, supplies and equipment, vaccine supply chain, communications, and security and crowd control o Information from this planning session may be valuable to community pharmacies across the nation that seek to participate in COVID-19 pandemic vaccinations Source	
	• Surveillance, monitoring and evaluation, and reporting o Documenting vaccine-related opinions o Identifying sources of vaccine hesitancy ▪	• COVID-19 has disproportionately affected the black community, and hesitancy of the vaccine in the black community threatens vaccine uptake • Focus groups (24 participants total) were completed with black barbershop and salon owners living in zip codes of elevated COVID-19 prevalence to assess their attitudes and beliefs around COVID-19 vaccine uptake • Hesitancy against the COVID-19 vaccine was found to be high due to mistrust in the medical establishment, concerns with the fast timeline of vaccine development, the limited available data on vaccine side effects and the political environment promoting racial injustice • It was also found that participants were willing to consider the vaccine once the safety profile was robust and reassuring or if they were recommended to receive the vaccine by a trusted health care provider • In summary, it was found that COVID-19 vaccine hesitancy was high amongst blacks but health care provider recommendation and transparency around the safety of the vaccines may help to reduce COVID-19 vaccine hesitancy Source	Published 09 February 2021

Type of document	Relevance to question	Key findings	Recency or status

	• Surveillance, monitoring and evaluation, and reporting
	  ○ Documenting vaccine-related opinions
	  ○ Identifying sources of vaccine hesitancy
	  ▪
		• The purpose of this study was to assess the "frequency of vaccine hesitancy, characteristics of those reporting vaccine hesitancy, specific concerns, and communication preferences" through a survey administered to all staff employed at the Ann & Robert H. Lurie Children's Hospital
		  ○ 2-weeks prior to the administration of this survey, a virtual town hall was held for staff to relay information regarding the COVID-19 vaccine. Responses to commonly asked questions were also communicated to staff via email to provide more information on the vaccine
		• The survey received responses from 4448 individuals. Nearly 60% of respondents reported that they intend to receive the vaccine. 8.6% responded that they had already been vaccinated
		• Only 18.9% of the study population was deemed "vaccine hesitant" based on their responses
		  ○ Notably, the authors stated, "vaccine hesitancy was more prevalent among members of our workforce who identify as female, Black, and/or Hispanic / Latinx"
		  ○ More information regarding the demographics of these individuals, their concerns, and potential communication strategies to reach out to vaccine hesitant populations can be found in the study tables and supplementary materials, respectively
		• The authors stress the need for vaccine education and advocacy strategies as a means of promoting vaccination among the population
		  ○ Using the results gleaned from this analysis, the authors also outlined a plan for their workforce to improve knowledge surrounding
			Published 09 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		the COVID-19 vaccine. Details regarding this plan can be found in the Discussion section of the study • Source	
	• Surveillance, monitoring and evaluation, and reporting o Documenting vaccine-related opinions o Identifying sources of vaccine hesitancy ▪	• The purpose of this study was to assess the intentions of "student nurses, full-time faculty and clinical adjunct faculty" to receive the COVID-19 vaccine • A cross-sectional survey of nursing faculty as well as student nurses at the University College of Nursing was conducted • Findings demonstrated that "60% of full-time faculty" were in support of receiving the COVID-19 vaccine, whereas only "45% of clinical adjunct faculty and students" intended on receiving the vaccine o The most common concerns expressed by the participants were those related to vaccine side-effects as well as the impact of the speed of the development process on vaccine safety o Nursing leaders must work towards delivering educational programs to faculty and students to address the aforementioned concerns and promote vaccination. This is critical both for nursing faculty to ensure they are good role models for their patients and students, but also for students as they begin working with patients • The study authors also reported that, "nursing students, clinical adjunct faculty and full-time faculty" varied with respect to their opinions as to whether or not heath care organizations "should require the COVID-19 vaccine as a condition of employment or clinical engagement" o Given this result, the authors did not express their support towards mandatory vaccination	Published 04 February 2021

Type of document	Relevance to question	Key findings	Recency or status
		policies. Rather, they stressed the importance of campaigns and outreach strategies to educating the healthcare workforce and general public Source	

Appendix 2b: Key findings from highly relevant evidence documents identified in previous LEP versions that address the question, organized by document type and sorted by relevance to the question and COVID-19

Type of document	Relevance to question	Key findings	Recency or status

Guidelines developed using a robust process (e.g., GRADE)	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
	  ▪ People who have already had confirmed COVID-19
	  ▪ People for whom vaccine safety and effectiveness has not yet been established
	  ▪ People at significant risk for severe allergic reaction
	• Administering vaccines in ways that optimize timely uptake
	  ○ With what post-vaccination observation period and what physical distancing, personal protective equipment, sanitation and other public-health measures
	  ○ With what second-dose provisions
		• The Strategic Advisory Group of Experts (SAGE) provided recommendations on the use of Moderna mRNA-1273 vaccine against COVID-19
		• Detailed information is provided on administration, considerations for modifications, co-administration with other vaccines, contraindications, vaccinations for specific populations, prioritizations, and other recommendations related to surveillance
		• There is no evidence for the need of a booster dose after the two-dose vaccine and interchangeability of this vaccine with other mRNA vaccines
		• Individuals with a history of anaphylaxis to any component of the vaccine should not be administered the initial dose, and if anaphylaxis happens after the first dose, they should not receive the second dose
		• WHO recommends against the use of mRNA-1273 in pregnancy (unless the benefit outweighs the risk), children and adolescents below the age of 18 years
			Last update 25 January 2021

Type of document	Relevance to question	Key findings	Recency or status
		• WHO recommends risk-benefit assessments for: extremely frail older adults, those over the age of 95, individuals who are immunocompromised or have autoimmune conditions • WHO recommends vaccinations groups to include for lactating women, persons living with HIV, and persons with history of Bell's palsy (unless there is a contraindication to vaccination) • WHO recommends delayed vaccination for individuals who currently or previously had SARS-CoV-2 infection, or received antibody therapy • Source (World Health Organization's Strategic Advisory Group of Experts (SAGE))	

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ▪ High-risk groups
	• Individuals who are hesitant about or opposed to vaccination
		• The risk communication and community engagement (RCCE) strategy was updated to cover COVID-19 related events from December 2020 to May 2021
		• The four objectives aim for people-centred and community-led approaches to improve trust, social cohesion, and reduce negative impacts of COVID-19, such as: 1) be community-led (reduce stigma, coordinate the management of the infodemic); 2) be data-driven (enhance social media monitoring, advocate for community priorities); 3) reinforce capacity and local solutions (facilitate capacity needs assessments); and 4) be collaborative (include joint assessments and monitoring)
		• Anticipated challenges for the next six months include uncertainty, vaccines distribution and administration, pandemic fatigue, mistrust, increased economic pressure, increased stigma, and increased politicization
		• Source (World Health Organization)
			Last update 23 December 2020

	• Allocating vaccines and ancillary supplies equitably	• The priorities for the COVID-19 vaccination program should be the prevention of COVID-19	Published 6 January 2021

Type of document	Relevance to question	Key findings	Recency or status
	○ Allocation rules (to priority populations, including those listed below, as well as to 'lower levels' in a federation and/or to providers who can reach priority populations) ▪ Front-line healthcare workers ▪ Residents in long-term care homes and other congregate-care settings ▪ People at increased risk of severe COVID-19 (e.g., older and/or frail adults, those with chronic health conditions) ▪ Essential workers (beyond front-line healthcare workers) and/or those in work environments that put them at elevated risk (e.g., food processing and transit) • Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ High-risk groups	mortality and the protection of health and social-care staff and systems • Secondary priorities should include vaccination of individuals at increased risk of hospitalization and increased risk of exposure, and to maintain resilience in essential services • Based on the proposed guidelines, the order of priority of COVID-19 vaccinations are as follows: ○ Residents in a care home for older adults and their carers ○ All those 80 years of age and over and front-line health and social-care workers ○ All those 75 years of age or over ○ All those 70 years of age and over and clinically extremely vulnerable individuals ○ All those 65 years of age and over ○ All individuals aged 16 years to 64 years with underlying health conditions which put them at higher risk of serious disease and mortality ○ All those 60 years of age and over ○ All those 55 years of age and over ○ All those 50 years of age and over • Immunization advice and communication programs should be tailored to mitigate inequalities. Specifically, programs should be tailored to Black, Asian and minority ethnic groups who have higher rates of infection, morbidity and mortality Source (Department of Health & Social Care, Government of UK)	
	• Allocating vaccines and ancillary supplies equitably ○ Allocation rules ▪ Front-line healthcare workers ▪ Residents in long-term care homes and other congregate-care settings	• On December 1, the Advisory Committee on Immunization Practices (ACIP) in the U.S. recommended that healthcare personnel and long-term care facility residents be offered COVID-19 vaccination first (Phase 1a) • On December 20, ACIP updated interim vaccine allocation recommendations	Last update 1 January 2021

Type of document	Relevance to question	Key findings	Recency or status
	▪ People at increased risk of severe COVID-19 ▪ Essential workers and/or those in work environments that put them at elevated risk	○ In Phase 1b, COVID-19 vaccine should be offered to persons aged ≥75 years and non–healthcare frontline essential workers ○ In Phase 1c, COVID-19 vaccine should be offered to persons aged 65–74 years, persons aged 16–64 years with high-risk medical conditions, and essential workers not included in Phase 1b • Federal, state and local jurisdictions should use this guidance for COVID-19 vaccination program planning and implementation Source (Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention)	
	• Securing and distributing a reliable supply of vaccines and ancillary supplies (e.g., needles, diluents) ○ National purchasing ○ Delivery to country ○ Inventory management within country • Administering vaccines in ways that optimize timely uptake ○ With what second-dose provisions	• This guideline describes the rationale and recommendations from the Advisory Committee on Immunization Practices (ACIP) on the use of Moderna COVID-19 vaccine for U.S. adults aged 18 years or older for the prevention of COVID-19 • Engagement with community leaders and organizations will be needed to reduce barriers specific to vaccination uptake • ACIP states that adults should complete their second vaccination with the same vaccine product as the first dose Source (Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention)	Last update 20 December 2020
	• Securing and distributing a reliable supply of vaccines and ancillary supplies ○ Inventory management within country ○ Distribution within country and to administration sites • Allocating vaccines and ancillary supplies equitably ○ Allocation rules • Communicating vaccine-allocation plans and the safety and effectiveness of vaccines	• This guidance document outlined key elements and themes from vaccine strategy and deployment plans in the United Kingdom and countries within the European Union and European Economic Area • Within the interim recommendations of European countries, the top priority group for COVID-19 vaccines included older adults, healthcare workers, and individuals with select comorbidities ○ Due to the limited supply of vaccines, certain countries may be further prioritizing from within this group	Published 2 December 2020

Type of document	Relevance to question	Key findings	Recency or status
	○ Target of intervention ▪ General public • Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine-related opinions ○ Documenting vaccine status ○ Documenting adverse events and follow-up • Infrastructure to enable surveillance, monitoring and evaluation	• Three key themes have been noted across the European countries: 1) the COVID-19 vaccine will be free of charge; 2) models will use pre-existing vaccination structures and delivery services for the roll-out of COVID-19 vaccines; and 3) electronic immunization registries will be used to help monitor vaccine safety, efficacy, coverage, and acceptance Source (European Centre for Disease Prevention and Control)	
	• Allocating vaccines and ancillary supplies equitably ○ Allocation rules	• This report follows the process of an expert group established by the Norwegian Institute of Public Health in determining the order in which vaccines should be allocated during the first stage of the Norwegian Coronavirus Immunization Programme • Core values were established by the group for the first stage of the program and included, "equal respect, welfare, equity, trust, and legitimacy" • These five core values were then translated to the following key goals: "1) reduce the risk of death, 2) reduce the risk of severe illness, 3) maintain essential services and critical infrastructure, 4) protect employment and the economy, 5) re-open society" • Through defining the aforementioned key values and goals, the following categories of prioritization were established: ○ "Risk factors for severe illness and death ○ The infection situation ○ Occupation" • The group recommends a dynamic approach to prioritization in accordance with a model published by the Norwegian government illustrating four possible scenarios for the COVID-19 pandemic. Each scenario varies based on severity of infection and is accompanied by recommendations for possible response measures. As an example, "Scenario 1a:	Published 15 November 2020

Type of document	Relevance to question	Key findings	Recency or status
		Control" represents mild infection rates whereas "Scenario 2b: Widespread Transmission" represents more severe infection rates and societal closures are recommended ○ The group recommends that risk groups and healthcare workers be given priority in pandemic scenarios 1-2a ○ In pandemic scenario 2b, in which there is widespread transmission, the order of priority should be amended to: "1) health care workers, 2) risk groups, and 3) critical societal functions" Source (Norwegian Institute of Public Health)	
	• Allocating vaccines and ancillary supplies equitably ○ Distribution within country and to administration sites • Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ General public ▪ Individuals who are hesitant about or opposed to vaccination • Surveillance, monitoring and evaluation, and reporting	• This report published by the Health Information and Quality Authority was written with the purpose of advising the National Public Health and Emergency Team in Ireland on various factors which influence vaccine uptake as well as possible interventions and communication strategies that can combat these barriers • The influenza vaccine was used as a surrogate for the COVID-19 vaccine, and a rapid review was conducted to identify factors (barriers and facilitators) that influence vaccine uptake ○ As a result of this rapid review, the following themes were identified as either barriers or facilitators to vaccine uptake, varying based on context: "perceived risks and benefits, knowledge, social influences, and patient-specific factors." ○ Additionally, "perceived benefits from vaccination" and "recommendations from healthcare professionals" were reported as factors which typically improve vaccine uptake ○ The rapid review also concluded that multi-component interventions involving both individual- and system-level components are	Published 16 December 2020

Type of document	Relevance to question	Key findings	Recency or status
		successful towards improving vaccine uptake in a variety of groups • The group stressed the importance of ensuring equitable access to the vaccine by varying populations (i.e., taking into account the location of immunization centres, vaccination costs, etc.) as a means of improving uptake • The following parties should be educated on the COVID-19 vaccine to ensure evidence-based information is being relayed to the general public: o Healthcare professionals (who should be educated on the vaccine prior to the initiation of any vaccination program) o Community opinion leaders • A communication campaign with the purpose of combatting misconceptions about the COVID-19 vaccine should include the following key pieces of information: o The mechanism of action of the vaccine o Evidence related to the safety and efficacy of the vaccine o The rigour of the scientific process used to evaluate the safety and effectiveness of the vaccine, as well as the fact that it is undergoing continuous evaluation • Finally, the team stressed that a vaccination campaign based on knowledge and consensus would be a more effective approach than making vaccination compulsory for citizens in Ireland • To maintain a relationship of trust with the public, all surveillance information related to the safety and effectiveness of the vaccine should be made openly available Source (Health Informant and Quality Authority)	

Type of document	Relevance to question	Key findings	Recency or status

	• Securing and distributing a reliable supply of vaccines and ancillary supplies (e.g., needles, diluents)
	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules (to priority populations, including those listed below, as well as to 'lower levels' in a federation and/or to providers who can reach priority populations)
	  ○ Ensuring equity (including whether and how access through private means can be achieved by those not initially prioritized)
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	• Administering vaccines in ways that optimize timely uptake
	• Surveillance, monitoring and evaluation, and reporting
		• This document provides guidance on developing COVID-19 national deployment and vaccination plans
		• Aspects of this plan include:
		  ○ Regulatory preparedness
		  ○ Planning and coordination
		  ○ Costing and funding
		  ○ Identification of target populations
		  ○ Vaccine-delivery strategies
		  ○ Preparation of supply chain and management of healthcare waste
		  ○ Human-resource management and training
		  ○ Vaccine acceptance and uptake (demand)
		  ○ Vaccine-safety monitoring, management of adverse effects following immunization (AEFI) and injection safety
		  ○ Immunization monitoring systems
		  ○ COVID-19 surveillance
		  ○ Evaluation of COVID-19 vaccine
		Source (World Health Organization)
			Last update 16 November 2020

	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
		• This document provides guidance on prioritizing limited supply of COVID-19 vaccines
		• It provides a roadmap for priority uses of COVID-19 vaccines including:
		  ○ Staging priority groups in relation to group size and supply
		  ○ Gender considerations
		  ○ Addressing pregnant women
		  ○ Addressing lactating women
		  ○ Addressing children
		  ○ Considering comorbidities in vaccine prioritization
		Source (World Health Organization)
			Last update 13 November 2020

	• Allocating vaccines and ancillary supplies equitably	• The MMWR describes the Advisory Committee on Immunization Practices' ethical principles for the allocation of COVID-19 vaccine in the U.S.	Last update November 2020

Type of document	Relevance to question	Key findings	Recency or status
	○ Approaches to developing and adjusting allocation rules ○ Ensuring equity (including whether and how access through private means can be achieved by those not initially prioritized)	• The recommended approach for national, state, tribal, local and territorial levels is guided by four ethical principles: 1) maximize benefits and minimize harms; 2) promote justice; 3) mitigate health inequities; 4) promote transparency • Additional considerations include decisions based on science (e.g., safety and efficacy) and feasibility of implementation (e.g., storage and handling) Source (Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention)	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ General public ▪ Individuals who are hesitant about or opposed to vaccination ○ Delivery of the intervention ▪ By whom (e.g., health worker, research expert, teacher, business leader, government leader, community leader, citizen champion, media) ▪ Frequency (e.g., daily, weekly) ▪ Duration (i.e., how much or for how long) ▪ Modality of delivery (e.g., social media, text, email, telephone, radio, television, face-to-face by video, face-to-face in person) ○ Content of messaging ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 (including duration of protection) and protection against transmission (and other factors that may contribute to vaccine acceptance and hesitancy) ▪ Information about novel vaccine platforms (e.g., mRNA), current vaccine options (e.g.,	• This guideline discusses behavioural insights related to drivers of vaccine acceptance and uptake • It provides a framework of drivers of vaccine uptake including: 1) an enabling environment, 2) social influences and 3) motivation Source (World Health Organization)	Last update 15 October 2020

Type of document	Relevance to question	Key findings	Recency or status
	number of vaccines available in a country, number of doses required of any given vaccine), prioritized populations, and behaviours after vaccination ▪ Information (for health workers) about vaccine-administration protocols ▪ Myths and misinformation about vaccines ▪ Risk-mitigation efforts (including complementary public-health measures used at time of vaccination) ▪ Anticipated timing of when all those who want a vaccine will have been vaccinated		
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Target of intervention ▪ General public ▪ Individuals who are hesitant about or opposed to vaccination	• This guideline highlights how countries can begin pre-planning for the introduction of COVID-19 vaccines by conducting a series of activities, including activities that focus on demand generation and communication o Design a demand plan (includes advocacy, communications, social mobilization, risk and safety communications, community engagement, and training) to generate confidence, acceptance and demand for COVID-19 vaccines o The plan must include crisis-communications preparedness planning Source (World Health Organization)	Last update 21 September 2020
	• Securing and distributing a reliable supply of vaccines and ancillary supplies o National purchasing • Allocating vaccines and ancillary supplies equitably o Distribution within country and to administration sites o Distribution procedures • Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Target of intervention	• 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 • It also offers a structured framework 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	Last update 21 September 2020

Type of document	Relevance to question	Key findings	Recency or status
	▪ General public ▪ Individuals who are hesitant about or opposed to vaccination • Administering vaccines in ways that optimize timely uptake o With what partnerships to reach early populations of focus o With what reporting requirements, supporting immunization information systems, and broader healthcare information systems o With what safety-monitoring requirements • Surveillance, monitoring and evaluation, and reporting	• COVID-19 Vaccine Introduction Readiness Assessment Tool proposes additional activities that focus on demand generation and communication o Design a demand plan (includes advocacy, communications, social mobilization, risk and safety communications, community engagement, and training) to generate confidence, acceptance and demand for COVID-19 vaccines. The plan must include crisis-communications preparedness planning o Establish data-collection systems, including: 1) social media listening and rumour management; and 2) assessing behavioural and social data o Develop key messages and materials for public communications and advocacy that are aligned with the demand plan Source (World Health Organization)	
	• Allocating vaccines and ancillary supplies equitably o Allocation rules	• This guidance document provides a values framework for COVID-19 vaccine allocation and prioritization • The values framework consists of six core principles: o Human well-being o Equal respect o Global equity o National equity o Reciprocity o Legitimacy Source (World Health Organization)	Last update 13 September 2020
	• Allocating vaccines and ancillary supplies equitably o Allocation rules	• This document describes the WHO Secretariat's proposal for the allocation of COVID-19 vaccines among countries, specifically in the context of the COVID-19 Vaccines Global Access (COVAX) Facility access mechanism, including: o An initial proportional allocation of doses to countries until all countries have enough doses to cover 20% of their population	Last update 9 September 2020

Type of document	Relevance to question	Key findings	Recency or status
		○ A follow-up phase to expand coverage to other populations; if severe supply constraints persist, a weighted allocation approach would be adopted, taking account of a country's COVID threat and vulnerability Source (WHO technical guidance)	
	• Securing and distributing a reliable supply of vaccines and ancillary supplies ○ Distribution within country and to administration sites	• In the context of the COVID-19 pandemic, this document outlines the decision-making framework for implementing mass-vaccination campaigns for the prevention of vaccine-preventable diseases and high-impact diseases (VPD/HID), including: ○ Step 1: assessing the potential impact of the VPD/HID outbreak using key epidemiological criteria ○ Step 2: assessing the potential benefits of a mass-vaccination campaign and the country capacity to implement it safely and effectively ○ Step 3: considering the potential risk of increased COVID-19 transmission associated with the mass-vaccination campaign ○ Step 4: determining the most appropriate actions considering the COVID-19 epidemiological situation ○ Step 5: if a decision is made to proceed with a mass-vaccination campaign, implementing best practice Source (WHO technical guidance)	Last update 22 May 2020
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Delivery of the intervention ▪ By whom (e.g., health worker) ▪ Modality of delivery (e.g., social media, text, email, telephone, face-to-face in person) ○ Content of messaging ▪ Myths and misinformation about vaccines	• This guideline indicates that people in eligible groups who understand why flu vaccination is particularly important for them are more likely to be vaccinated ○ Thus, professionals need to explain the benefits of vaccination and address people's misconceptions about it • The guideline proposes a multi-component approach to develop and deliver programs to increase flu-vaccination uptake, including raising awareness	Last update 22 August 2018

Type of document	Relevance to question	Key findings	Recency or status
		among health and social-care staff, and among eligible groups Source (National Institute for Health and Care Excellence)	

Full systematic reviews	• Administering vaccines in ways that optimize timely uptake
	  ○ By whom and with what changes to remuneration
		• This review aimed to estimate the effect of pharmacists administering vaccinations for influenza on overall vaccination rates, and to assess whether there is a difference in effect for at-risk sub-groups compared to the general population
		• Findings revealed that:
		  ○ There appeared to be a small positive effect associated with allowing pharmacists to administer influenza vaccinations
		  ○ The largest increase in overall population vaccination rates associated with pharmacists vaccinating for influenza was 10%
		  ○ There was a graduated effect in that pharmacists with the most autonomy had the largest vaccination rate increases
		Source (AMSTAR rating 5/10)
			Literature last searched July 2019

	• Administering vaccines in ways that optimize timely uptake
	  ○ Where
	  ▪ Other community settings
		• School and childcare centre-located vaccination programs are effective in increasing vaccination rates, and decreasing rates of vaccine-preventable morbidity and mortality
		• Key components of effective school and childcare centre-located vaccination programs include:
		  ○ Vaccinations provided on site
		  ○ Administration of programs by a wide range of providers including school health personnel, health-department staff, and other vaccination providers
		  ○ Delivery in a variety of different school and organized childcare settings
		  ○ Delivery of one or more of a range of vaccines recommended for children and adolescents
			Literature last searched February 2012

Type of document	Relevance to question	Key findings	Recency or status
		○ Inclusion of additional components such as education, reduced out-of-pocket costs, enhanced access to vaccination services • School and childcare centre-located programs may be most useful for improving immunization rates among children and adolescents for new vaccines, where background rates are likely to be very low Source (AMSTAR rating 6/9)	
	• Administering vaccines in ways that optimize timely uptake ○ Where ▪ Other community settings (e.g., schools)	• There is strong evidence on the effectiveness of vaccination requirements for childcare, school, and college attendance in increasing vaccination rates and decreasing rates of vaccine-preventable disease and associated morbidity and mortality • Vaccination requirements could be: ○ Laws created by states, with the specific vaccines required established by the legislature and embodied in statutes or adopted as administrative rules by health or education departments ○ Additional vaccination policies established by institutions (such as colleges and private schools) for attendance or residence ○ Varied across jurisdictions Source (AMSTAR rating 3/10)	Literature last searched 2015
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Delivery of the intervention ▪ Modality of delivery (e.g., social media, text, and email)	• Vaccine uptake and coverage can be improved by implementing interventions that apply new media such as text messaging, internet promotions, and computerized standing orders and reminders for healthcare providers • Computer-generated text messaging sent to parents of newborns and school-aged children were effective at increasing vaccination in these groups • Immunization campaign websites and computerized reminders for patients have some influence on uptake of vaccine information, and patient attitudes and behaviours about vaccination	Date of literature search not reported (published January 2015)

Type of document	Relevance to question	Key findings	Recency or status
		• There is uncertainty about how effective social-media networks, email communications and smartphone applications are on influencing vaccine uptake • Vaccination rates are higher when computerized reminders to encourage providers to recommend vaccination and computer-based standing orders are in use Source (AMSTAR rating 7/10)	

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ▪ High-risk groups
	  ▪ Individuals who are hesitant about or opposed to vaccination
	  ○ Delivery of the intervention
	  ▪ By whom (e.g., citizen champion)
	  ▪ Modality of delivery (e.g., face-to-face in person)
	  ○ Content of messaging
	  ▪ Myths and misinformation about vaccines
	  ▪ Risk-mitigation efforts
		• Findings about the structure of interventions revealed that:
		  ○ Engaging religious and other community leaders was a commonly used strategy to address contextual influences (e.g., religion, culture and gender)
		  ○ Across all regions, most interventions were multi-component
		• Findings about the success (defined as either increase in vaccine uptake, or increase in knowledge and awareness) of interventions revealed that:
		  ○ Few interventions were found to have been evaluated for their success in vaccine uptake or their influence in increasing knowledge and awareness
		  ○ Interventions to increase uptake that have multiple components and/or have a focus on dialogue-based approaches tend to be more effective
		  ○ Interventions that resulted in the largest increases in vaccine uptake were those which directly targeted unvaccinated or under- vaccinated populations, improved convenience and access to vaccination, aimed to increase vaccination knowledge and awareness, targeted specific populations (e.g., healthcare workers), mandated vaccinations, and engaged religious or other influential leaders
			Literature last searched 2013

Type of document	Relevance to question	Key findings	Recency or status
		○ Interventions that resulted in the greatest increases in knowledge and awareness were education initiatives, especially where new knowledge was embedded into routine processes Source (AMSTAR rating 7/10)	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ General public ○ Delivery of the intervention ▪ Modality of delivery (e.g., text and telephone) ○ Content of messaging ▪ Risk-mitigation efforts	• This systematic review aimed to investigate whether interventions that present risk messages are able to increase risk appraisal, vaccine intention and vaccine uptake • The findings from this review indicate that interventions involving risk messages had no effect on the intention of participants to vaccinate, their behaviour towards vaccines, and their perception of the severity of the disease • This review identified very few behaviour-change techniques, though the additional inclusion of studies focusing on efficacy appraisal may increase intervention effectiveness Source (AMSTAR rating 8/11)	Literature last searched September 2017
	• Administering vaccines in ways that optimize timely uptake ○ With what broader, complementary health interventions (e.g., flu vaccination and routine immunization, ongoing public-health measures)	• This review examined the effectiveness of process interventions (e.g., education for clinicians, parent presence, education of parents before and on day of vaccination, and education of patients on day of vaccination) on reducing vaccination pain, fear, and distress and increasing the use of interventions during vaccination • Findings revealed that: ○ Clinicians should be educated about vaccine-injection pain management ○ Parents should be present ○ Parents should be educated before the vaccination day ○ Parents should be educated on the vaccination day ○ Individuals three years of age and above should be educated on the day-of-vaccination fear Source (AMSTAR rating 6/10)	Date of literature search not reported (published in 2015)

Type of document	Relevance to question	Key findings	Recency or status

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ High-risk groups
	  ▪ Individuals who are hesitant about or opposed to vaccination
		• Combinations of interventions should be used in efforts to increase vaccination rates in targeted populations
		• At least one of the interventions should be focused on increasing demand using approaches found to be most effective, including client reminder and recall systems, clinic-based client education, and manual outreach and tracking
		• One or more of the interventions should address either or both of the following:
		  ○ Enhancing access to vaccinations (e.g., through effective interventions such as expanded access in healthcare settings, reducing out-of-pocket costs, or home visits)
		  ○ Ensuring vaccination providers are reminded and supported to deliver vaccinations (e.g., through effective interventions such as reminders, standing orders and assessment and feedback)
		Source (AMSTAR rating 6/9)
			Literature last searched February 2012

	• Administering vaccines in ways that optimize timely uptake
	  ○ Where
	  ▪ With what reporting requirements and supporting immunization information systems and broader healthcare information systems
		• Use of an immunization information system (IIS) was an effective intervention to increase vaccination rates, and studies with benefit information focused on administrative efficiency of clinical vaccination activities and savings resulting from decreased over-vaccination
		Source (AMSTAR rating 4/9)
			Literature last searched March 2012

Rapid reviews	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
	  ▪ People for whom vaccine safety and effectiveness has not yet been established
		• Existing guidelines note the lack of clinical evidence on the safety or effectiveness of COVID-19 vaccines in women who are pregnant, breastfeeding, or attempting to conceive
		• Two major U.S. specialty societies recommend shared decision-making to best balance the risks of vaccination with the risks of remaining unvaccinated, and they do not consider pregnancy or breastfeeding
			Date of literature search not stated (published 24 December 2020)

Type of document	Relevance to question	Key findings	Recency or status
		to be an absolute contraindication to COVID-19 vaccination ○ Most U.S. medical centres that have taken a position on COVID-19 vaccination endorse the U.S societies' recommendations for shared decision-making and will offer vaccination to women who are pregnant or breastfeeding • Organizations in the United Kingdom consider pregnancy and breastfeeding to be contraindications to COVID-19 vaccination Source (AMSTAR rating 1/9)	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ General public ▪ Individuals who are hesitant about or opposed to vaccination ○ Delivery of the intervention ▪ By whom ○ Content of messaging ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 (including duration of protection) and protection against transmission (and other factors that may contribute to vaccine acceptance and hesitancy)	• This rapid review of over 100 surveys focused on comparing trends in public reception to COVID-19 vaccines over time, and analyzing factors related to vaccine perceptions, concerns and intentions during the COVID-19 pandemic • Study results show that vaccine hesitancy is universal across countries and is typically manifested in the preference to wait to be vaccinated or to reject vaccination altogether • The most cited reasons for vaccine hesitancy or refusal included fear of side effects, safety and effectiveness, as well as the expedited development of the COVID-19 vaccines, perceived political interference, and misinformation • Survey participants from the U.S. and U.K. with higher skepticism had a lower perceived risk of trust in government or professionals, and therefore had more doubts and objections to being vaccinated • The authors recommend that confidence in the COVID-19 vaccines can be improved by emphasizing transparency and compliance with scientific standards throughout the vaccine-development and approval processes • Communication strategies could use positive cues to vaccinate through engagement with loved ones and	Last search 20 October 2020

Type of document	Relevance to question	Key findings	Recency or status
		family members, and trusted figures like doctors and religious leaders. Confidence can also be instilled through transparency in access and equitable distribution of the vaccines Source (AMSTAR rating 7/9)	
	• Administering vaccines in ways that optimize timely uptake ○ With what broader, complementary health interventions	• There are three models for vaccination delivery in non-healthcare settings: social-distancing immunization clinics, drive-through clinics, and small mobile-team clinics • Social-distancing clinics were found to be effective, although monitoring social distancing was challenging • Drive-through immunization clinics allowed for greater social distancing, but with less efficiency and with greater risk of use of an improper vaccine-administration technique • Mini-mobile teams increase ability to monitor social distancing and decrease the risk of exposure, but have significant logistical challenges • Strict protocols for vaccination sites to manage patient flow and duration of time at site must be established • Staff must be screened and appropriately trained to manage the vaccination site Source (AMSTAR rating 3/9)	Date of literature search not reported (published 27 August 2020)

	• Administering vaccines in ways that optimize timely uptake
	  ○ With what explicit effort to leverage existing health-system arrangements (e.g., vaccination systems and primary-care practices/community health centres)
	  ○ With what partnerships to reach early populations of focus
		• Hard-to-reach groups may be reached by vaccine-delivery programs by setting up vaccination sites in familiar and accessible population-specific spaces
		• Community-based teaching methods and community partnerships may be leveraged to enable greater vaccination uptake by hard-to-reach populations
		• Additional considerations must also be made to overcome language and cultural barriers
		Source (AMSTAR rating 3/9)
			Date of literature search not reported (published 27 August 2020)

Type of document	Relevance to question	Key findings	Recency or status
	• Administering vaccines in ways that optimize timely uptake ○ By whom and with what changes to remuneration	• Individuals with or without backgrounds in medicine can be recruited to deliver vaccinations through several avenues • In-person immunization trainings and just-in-time trainings were not found to be more effective than distant or traditional training methods, respectively Source (AMSTAR rating 3/9)	Date of literature search not reported (published 27 August 2020)
	• Surveillance, monitoring and evaluation, and reporting ○ Identifying sources of vaccine hesitancy	• This rapid review includes 18 surveys on individuals' willingness to receive a COVID-19 vaccine • The percentage of respondents inclined towards receiving a vaccine ranged from 58% in a U.S.-based sample to 93% in an Indonesian sample • Greater perceived risk of COVID-19, characteristics such as being older, male, more educated and having higher income, and valuing healthcare providers' recommendations, were positively associated with willingness to receive a COVID-19 vaccine • Willingness to receive a COVID-19 vaccine was negatively associated with being of Latino or Black racial/ethnic background, and concerns about vaccine safety • Communication strategies to improve willingness to receive a COVID-19 vaccine might consider behaviour-change techniques such as information about health consequences, prompts and cues, and support or encouragement Source – not yet available online (AMSTAR rating 3/9)	Literature last searched December 2020

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ▪ Individuals who are hesitant about or opposed to vaccination
	  ○ Content of messaging
		• This brief aimed to support decision-makers in planning and implementing vaccine-communication strategies
		• Communication strategies with the public about vaccines should aim to:
		  ○ Identify concerns and misconceptions about the vaccine
			Date of literature search not stated (published October 2020)

Type of document	Relevance to question	Key findings	Recency or status
	▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission ▪ Information about novel vaccine platforms, current vaccine options, prioritized populations, and behaviours after vaccination ▪ Myths and misinformation about vaccines ▪ Risk-mitigation efforts • Anticipated timing of when all those who want a vaccine will have been vaccinated	○ Provide information that is perceived to be trustworthy ○ Make information about how the vaccine was developed, what it contains, its effects and safety, and the background for its recommendation easily accessible ○ Provide transparent, timely, consistent, accessible and easily understandable information, including to hard-to-reach groups ○ Include practical information about where to get the vaccine and what the procedure is Source (AMSTAR rating 4/9)	
	• Allocating vaccines and ancillary supplies equitably ○ Allocation rules ○ Ensuring equity (including whether and how access through private means can be achieved by those not initially prioritized) • Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Content of messaging ▪ Anticipated timing of when all those who want a vaccine will have been vaccinated	• To maintain public support among non-priority groups, it is critical that key stakeholders effectively communicate all evidence-informed decisions clearly • To uphold ethical integrity, COVID-19 vaccines must be administered in accordance with the priority groups that have been established Source (AMSTAR rating 4/9)	Date of literature search not reported (published 27 August 2020)
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ High-risk groups ▪ Individuals who are hesitant about or opposed to vaccination ○ Delivery of the intervention ▪ By whom (e.g., health worker, research expert, teacher, business leader, government leader, community leader, citizen champion, media)	• This review provides an overview of implementation considerations related to communication between healthcare workers and older adults about vaccines • Communicating the aim of vaccine communication with older adults and their role in the decision-making process in relation to patient rights legislation or other standards and policies in the local setting • Planners and implementers should consider healthcare workers' views and attitudes about communication and decision-making in terms of ○ Older adults' rights and preferences ○ Communication training	Date of last search or publication not stated (listed as forthcoming)

Type of document	Relevance to question	Key findings	Recency or status
		○ Awareness around influence ○ Healthcare workers' vaccine uptake • Additional considerations related to the relationships healthcare workers have with older adults ○ Do healthcare workers view communication about vaccination as part of their role? ○ Is it their responsibility to initiate the conversation about vaccination? ○ Do healthcare workers receive support and guidance to facilitate communication with older adults who do not have the capacity to make their own decisions? ○ Do healthcare workers receive support and guidance when communicating with older adults who speak a minority language? • Practical issues encountered by healthcare workers related to communicating with older adults about vaccination include: ○ Sufficient time ○ Lack of appropriate context and preparation to facilitate informed decision-making ○ Limited knowledge of disease vaccine aims to prevent ○ Unable to provide information to address questions, concerns and fears about vaccines ○ Limited or no access to patient data necessary to discuss vaccines with older adults ○ Lack of agreement with current recommendations Source (AMSTAR rating 1/9)	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Delivery of the intervention ▪ Modality of delivery (e.g., social media, text, email, telephone, radio, television, face-to-face by video, face-to-face in person)	• This brief provides policy- and decision-makers and operational staff insights about how digital interventions can promote vaccine uptake • Evidence on the effectiveness of digital interventions to promote vaccine uptake is mixed and fragmented • Mobile reminders may encourage people to vaccinate; online prompts from health providers make little or	Date of literature search not stated (published October 2020)

Type of document	Relevance to question	Key findings	Recency or status
		no difference to adolescent vaccine uptake; the effects of vaccination reminders via online patient portal systems or of educational videos for parents are uncertain • Start-up and ongoing costs, acceptability and feasibility of digital interventions should be considered before implementing an intervention in a specific setting • Given the limited evidence available, large scale implementation of digital interventions for vaccine uptake should be carefully evaluated, including for unintended consequences and equity impacts • Operational staff and decision-makers should consider context, including health-system arrangements, constraints and on-the-ground realities that might shape the feasibility and acceptability of digital interventions Source (AMSTAR rating 4/9)	
	• Administering vaccines in ways that optimize timely uptake o With what appointment/scheduling and screening support, changes to physical spaces and patient flows through these spaces, and changes to hours of operation o With what post-vaccination observation period and what physical distancing, personal protective equipment, sanitation and other public-health measures o With what safety monitoring requirements	• A separate waiting area must be established to allow patients to be monitored post-vaccination for 15 minutes • 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 • Ensuring patients are aware of how to get help in drive-through clinic models (i.e., through honking) and administering vaccines in-clinic for patients with a known history of adverse reactions are also critical to safety • For in-clinic vaccine administration, patient flow and clinic layout must be strictly monitored Source (AMSTAR rating 3/9)	Date of literature search not reported (published 27 August 2020)
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines	• Barriers to the uptake of vaccinations include: limited trust in vaccine effectiveness; limited knowledge;	Date of literature

Type of document	Relevance to question	Key findings	Recency or status
	○ Target of intervention ▪ Individuals who are hesitant about or opposed to vaccination ○ Delivery of the intervention ▪ By whom	unhealthy lifestyle; low concern about disease; and safety concerns about immunizations • Reliable, frequent and tailored information about vaccines must be shared with community members through multiple platforms, including social media, traditional media and providers • Providers must be educated about vaccines and provided with appropriate training to increase provider vaccine recommendations to patients Source (AMSTAR rating 4/9)	search not reported (published 27 August 2020)
	• Administering vaccines in ways that optimize timely uptake ○ With what explicit effort to leverage existing health-system arrangements ○ With what partnerships to reach early populations of focus ○ With what broader, complementary health interventions ○ With what reporting requirements and supporting immunization information systems and broader healthcare information systems	• The Global Routine Immunization Strategic Plan (GRISP) is a useful framework for operationalizing programs to increase vaccine coverage in countries where early COVID-19 mitigation measures have had an impact • To maximize reach, services should be designed to reach all equitably, vaccinator capacity and training should be increased, and immunization services should be re-integrated as synergistically as possible • Efforts should be made to engage communities and create demand for immunization through culturally specific education campaigns and engagement of stakeholders and community partners • Vaccination progress should be continuously monitored to ensure availability of vaccine stock and plan for catch-up vaccination Source (AMSTAR rating 3/9)	Literature last searched June 2020
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ General public ○ Delivery of the intervention ▪ Modality of delivery (e.g., social media, text, email, telephone, radio, television,	• This rapid review focuses on understanding how the public responds to vaccination messages during a pandemic or epidemic, to inform messaging campaigns that encourage the uptake of new vaccines • Messages found to improve vaccine uptake include those that provide information about virus risks and vaccine safety, address vaccine misunderstandings, offer vaccination reminders (including vaccination	Literature last searched May 2020

Type of document	Relevance to question	Key findings	Recency or status
	face-to-face by video, face-to-face in person) ○ Content of messaging ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 (including duration of protection) and protection against transmission (and other factors that may contribute to vaccine acceptance and hesitancy) ▪ Anticipated timing of when all those who want a vaccine will have been vaccinated	clinic details), and deliver mixed-media campaigns in communities and hospitals • Behavioural influences were improved when shorter risk-framing messages were used, concerns among target populations were addressed, and the benefits of vaccination were described • Higher acceptability was found to be associated with clear, credible messages that incorporated personal accounts of people who were previously vaccinated • Future messaging campaigns should ensure that communication is clear about vaccine eligibility and availability, and that target groups are involved in the campaign planning, information dissemination and relationship building Source (AMSTAR rating 8/10)	
Guidance developed using some type of evidence synthesis and/or expert opinion	• Administering vaccines in ways that optimize timely uptake ○ With what safety monitoring requirements • Surveillance, monitoring and evaluation and reporting ○ Documenting adverse events and follow-up	• The guideline from the allergy centres in Germany provides guidance on allergological risk assessment regarding COVID-19 vaccination and suggests a standardized, resource-oriented diagnostic and therapeutic procedure ○ The allergological diagnostic work-up includes, after a thorough history, the determination of basal tryptase, total IgE, and sIgE (depending on the history e.g. of latex, ethylene oxide, α-Gal or gelatine, CCD) ○ If all tests are negative, vaccination can be provided under controlled conditions (e.g., with emergency medication and trained personnel available, and monitoring for at least 30 minutes after vaccination) ○ If a positive result is received (e.g., if polyethylene glycol is found in the skin test), another vaccine can be considered for vaccination, provided that the vaccine is available (within a reasonable time)	Last update 26 January 2021

Type of document	Relevance to question	Key findings	Recency or status
		• Reports of severe allergic reactions in the context of COVID-19 vaccination can be made via www.anaphylaxie.net using an online questionnaire Source (Allergy centres in Germany)	

	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
	  ▪ People for whom vaccine safety and effectiveness has not yet been established
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ High-risk groups
	  ○ Delivery of the intervention
	  ▪ By whom
	  ▪ Modality of delivery
	  ○ Content of messaging
	  ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission
	  ▪ Risk-mitigation efforts
	• Administering vaccines in ways that optimize timely uptake
	  ○ Where
	  ▪ Community-based health settings
	  ▪ Other community settings
	  ▪ Primary-care settings
		• ACOG recommends that COVID-19 vaccines should not be withheld from pregnant individuals who meet criteria for vaccination based on ACIP (the Advisory Committee on Immunization Practices)-recommended priority groups
		• ACOG recommends that COVID-19 vaccines should be offered to lactating individuals similar to non-lactating individuals when they meet criteria for receipt of the vaccine based on prioritization groups outlined by the ACIP
		• A conversation between the patient and their clinical team may assist with decisions regarding the use of vaccines approved under Emergency Use Authorization (EUA) for the prevention of COVID-19 by pregnant patients, and the important considerations include:
		  ○ The level of activity of the virus in the community
		  ○ The potential efficacy of the vaccine
		  ○ The risk and potential severity of maternal disease, including the effects of disease on the fetus and newborn
		  ○ The safety of the vaccine for the pregnant patient and the fetus
		• A conversation with a clinician should not be required prior to vaccination, as this may cause unnecessary barriers to access
		• Regardless of their decision to receive or not receive the vaccine, these conversations provide an opportunity to remind patients about the importance of other prevention measures such as hand washing, physical distancing, and wearing a mask
			Last update 27 January 2021

Type of document	Relevance to question	Key findings	Recency or status
		• Vaccination of pregnant individuals with a COVID-19 mRNA vaccine may occur in any clinical setting and non-clinical community-based vaccination sites such as schools, community centres, and other mass-vaccination locations, and pregnancy testing should not be a requirement prior to receiving any EUA-approved COVID-19 vaccine Source (The American College of Obstetricians and Gynecologists, ACOG)	
	• Allocating vaccines and ancillary supplies equitably ○ People at significant risk for severe allergic reaction	• The European Academy of Allergy and Clinical Immunology (EAACI) recommends the administering of COVID-19 vaccines to patients with allergies who do not have a history of allergic reactions to vaccine components • The EAACI highlights that anaphylaxis after vaccination can occur in the absence of a history of allergic reaction and recommends that an observation time of 15 minutes is allotted after vaccination • Patients who had a severe allergic reaction to the first dose of COVID-19 vaccine should be referred to allergist to determine the cause of the allergic reaction (if it is due to the COVID-19 vaccine, they should not receive the second dose) • Source (The European Academy of Allergy and Clinical Immunology)	Published 16 January 2021

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ▪ High-risk groups
	  ▪ Individuals who are hesitant about or opposed to vaccination
	• Delivery of the intervention
	  ▪ By whom
	  ○ Content of messaging
		• A 23-person *Working Group on Readying Populations for COVID-19 Vaccine* released a set of recommendations and best practices for improving COVID-19 vaccine acceptance and addressing hesitancy
		  ○ Value social science (involve research funding to include social, behavioural and communication science, and develop active partnerships)
		  ○ Inform public expectations about COVID-19 vaccination benefits, risks and supply (forecast range of scenarios, temper expectations, provide
			Published 20 October 2020

Type of document	Relevance to question	Key findings	Recency or status
	▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission ▪ Risk-mitigation efforts ▪ Myths or misinformation about vaccines • Administering vaccines in ways that optimize timely uptake o Where o With what broader, complementary health interventions	transparency of vaccine safety systems, seek input from marginalized populations) o Communicate in meaningful ways (public well-being at the centre of communication, reject political tensions, conduct qualitative studies to understand local and community needs and concerns, conduct surveys on attitudes and beliefs across sub-groups, engage network of trusted champions and spokespersons to deliver a unified message) o Earn public trust and confidence in allocation and distribution (develop strategies that take marginalized populations into consideration, implement guidelines that are consistent across providers and locations) o Make vaccination available in safe, familiar places (use schools, pharmacies, places of worship, workplaces, grocery stores, health departments, senior centres, home visits; prepare educational materials and train individuals tasked with vaccination; develop hesitancy campaign plans; foster partnerships with government, health departments, media) o Establish an independent body to instil public ownership (establish public committees to review and report on public understanding, access and acceptance) Source (Johns Hopkins Center for Health Security and Texas State University Department of Anthropology)	
	• Surveillance, monitoring and evaluation, and reporting o Documenting adverse events and follow-up o Identifying and measuring performance indicators o Infrastructure to enable surveillance, monitoring, and evaluation	• This guideline describes the post-implementation surveillance strategy that Public Health England (PHE) will be implementing to monitor and evaluate the COVID-19 vaccination program • PHE aims to identify any safety signals of potential adverse events from COVID-19 vaccination by using specified sequential testing methods and by	Last update 11 January 2021

Type of document	Relevance to question	Key findings	Recency or status
		comparing the number of signal reports to the expected number of signals for the specific condition absent of vaccination ● PHE has established vaccination in pregnancy (VIP) surveillance for COVID-19 vaccination of pregnant women (inadvertently or intentional) that includes collecting background information on the pregnant woman's medical history, and follow-up information 10 weeks post estimated delivery date and at the baby's first birthday ● The effectiveness of COVID-19 vaccines will be monitored by PHE against several outcomes ○ The Second Generation Surveillance System (SGSS), which collects routine COVID-19 testing data, will be linked to vaccination data from the National Immunisation Management System (NIMS) to provide a dataset for monitoring vaccine effectiveness against symptomatic disease by sub-group (e.g., age and clinical risk group) ○ Routine reporting of vaccine effectiveness against symptomatic disease, hospitalization with COVID-19, and COVID-19 mortality will be conducted by the Royal College of General Practitioners Research and Surveillance Centre (RCGP RSC) in collaboration with academic partners ○ To monitor vaccine effectiveness against infection, the data from a number of studies involving repeat asymptomatic PCR testing or antibody testing of healthcare workers, care-home residents and staff, and the population at large will be evaluated by the PHE on an ongoing basis	

Type of document	Relevance to question	Key findings	Recency or status
		○ A sample of cases from these studies will also be recruited to monitor the effect of vaccination on their risk of onward transmission • Possible vaccine failure assessments will include viral whole genome sequencing, identifying patient and program delivery factors, and monitoring disease outcomes • It is expected that the earliest estimates of vaccine effectiveness will be reported in the first quarter of 2021 Source	
	• Allocating vaccines and ancillary supplies equitably ○ Allocation rules • Administering vaccines in ways that optimize timely uptake ○ By whom (e.g., nurses, public-health workers, retired health workers) and with what changes to remuneration (e.g., increased vaccine-administration fee code) • Surveillance, monitoring and evaluation, and reporting ○ Documenting adverse events and follow-up	• Vaccines should be provided to individuals in accordance with the government-identified priority groups • Adverse events and safety concerns following COVID-19 vaccine administration should be reported using the established Coronavirus Yellow Card reporting scheme • To ensure that there is a sufficient workforce to deliver the vaccination program, changes to the Human Medicines Regulations now permit non-registered healthcare professionals to administer the COVID-19 vaccine • All individuals administering COVID-19 vaccines are required to complete assigned training Source (Public Health England)	Last update 11 January 2021
	• Securing and distributing a reliable supply of vaccines and ancillary supplies ○ National purchasing ○ Ordering within country ○ Storage and handling within country • Administering vaccines in ways that optimize timely uptake ○ With what post-vaccination observation period and what physical distancing, personal	• This guidance is for the administration of COVID-19 Vaccine AstraZeneca (ChAdOx1-S [recombinant]) to individuals in accordance with the national COVID-19 vaccination program • This guidance is separated into the four operational stages of vaccination activity (assessment, preparation, administration and record-keeping), and defines the criteria and required characteristics of persons undertaking the assigned stage(s)	Last update 10 January 2021

Type of document	Relevance to question	Key findings	Recency or status
	protective equipment, sanitation and other public-health measures ○ By whom and with what changes to remuneration ○ With what reporting requirements and supporting immunization information systems and broader healthcare information systems ○ With what safety monitoring requirements • Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine status ○ Documenting adverse events and follow-up ○ Monitoring supply safety	• In the assessment stage, the staff should assess the individual presenting for vaccination against the inclusion and exclusion criteria; consider any relevant cautions, interactions or adverse drug reactions; provide advice to the individual; obtain and record patient-informed consent; and ensure vaccinator, if another person, is informed of the vaccine product to be administered • In relation to the stage of vaccine preparation, the guidance focuses on vaccine presentation, supplies, preparation and disposal • In relation to the stage of vaccine administration, the staff should ensure individual assessment and consent before administering the vaccine, administer COVID-19 Vaccine AstraZeneca, and provide any post-vaccination advice • The staff should complete a vaccination record, including individual information, vaccinator and related professionals, name and brand of vaccine, date of administration, dose, form and route of administration of vaccine, quantity administered, batch number and expiry date, anatomical site of vaccination, advice given, and details of any adverse drug reactions and actions taken Source (Public Health England)	
	• Securing and distributing a reliable supply of vaccines and ancillary supplies ○ National purchasing ○ Ordering within country ○ Storage and handling within country • Administering vaccines in ways that optimize timely uptake ○ With what post-vaccination observation period and what physical distancing, personal protective equipment, sanitation and other public-health measures	• This guidance is for the administration of COVID-19 mRNA vaccine BNT162b2 to individuals in accordance with the national COVID-19 vaccination program • This guidance is separated into four operational stages of vaccination activity (assessment, preparation, administration and record-keeping), and defines the criteria and required characteristics of persons undertaking the assigned stage(s)	Last update 10 January 2021

Type of document	Relevance to question	Key findings	Recency or status
	○ By whom and with what changes to remuneration ○ With what reporting requirements and supporting immunization information systems and broader healthcare information systems ○ With what safety monitoring requirements • Surveillance, monitoring and evaluation, and reporting ○ Documenting vaccine status ○ Documenting adverse events and follow-up ○ Monitoring supply safety	• In the assessment stage, the staff should assess the individual presenting for vaccination against the inclusion and exclusion criteria, consider any relevant cautions, interactions or adverse drug reactions, provide advice to the individual, obtain and record patient-informed consent, and ensure vaccinator, if another person, is informed of the vaccine product to be administered • In relation to the stage of vaccine preparation, the guidance focuses on vaccine presentation, supplies, preparation and disposal • In relation to the stage of vaccine administration, the staff should ensure individual assessment and consent before administering the vaccine, administer CCOVID-19 mRNA Vaccine BNT162b2, and provide any post-vaccination advice • The staff should complete a vaccination record, including individual information, vaccinator and related professionals, name and brand of vaccine, date of administration, dose, form and route of administration of vaccine, quantity administered, batch number and expiry date, anatomical site of vaccination, advice given, and details of any adverse drug reactions and actions taken Source (Public Health England)	
	• Allocating vaccines and ancillary supplies equitably ○ Allocation rules • Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Content of messaging ▪ Data and evidence about safety and about effectiveness ▪ Myths and misinformation about vaccines	• The equitable allocation of vaccines where there is limited supply needs to take into account who is most at risk of exposure and severe outcomes, feasibility and acceptability of the vaccine and ethical considerations, and should also ensure flexibility in vaccine-delivery methods • Efforts to maintain trust in government throughout the pandemic are key to ensuring vaccine uptake, as well as proper communication to counter misinformation and disinformation related to vaccines, through the development of tailored	Published October 2020

Type of document	Relevance to question	Key findings	Recency or status
		messages for specific contexts and groups, working with community leaders, media-literacy experts, community organizations and other key influencers Source (The Chief Public Health Officer of Canada, Government of Canada)	
Protocols for reviews that are underway	• Surveillance, monitoring and evaluation and reporting ○ Identifying sources of vaccine hesitancy	• Pooled hesitancy rate for COVID 19 vaccine uptake globally Source	Anticipated completion date 31 March 2021
	• Surveillance, monitoring and evaluation and reporting ○ Identifying sources of vaccine hesitancy	• Factors associated with the uptake of COVID-19 vaccines among the general population Source	Anticipated completion date 1 April 2021
	• Surveillance, monitoring and evaluation and reporting ○ Identifying sources of vaccine hesitancy	• Exploring the barriers to vaccine acceptance in racial and ethnic minorities Source	Anticipated completion date 28 March 2021
Titles/questions for reviews that are being planned	*No highly relevant titles/questions found*		
Single studies that provide additional insight	• Allocating vaccines and ancillary supplies equitably ○ Approaches to developing and adjusting allocation rules	• This study employed a large-scale online public opinion survey in 13 countries (Australia, Brazil, Canada, Chile, China, Colombia, France, India, Italy, Spain, Uganda, UK and US) to identify and understand preferences and opinions regarding the allocation of a COVID-19 vaccine • 15,536 survey respondents made binary choices on hypothetical vaccine recipients that varied on five attributes that included occupation, age, transmission status, risk of death from COVID-19, and income • It was found that the respondents prioritized people based on factors that were directly related to contracting COVID-19 or developing severe symptoms, such as age, vulnerability and risk of transmission	Preprint (last edited 2 February 2021)

Type of document	Relevance to question	Key findings	Recency or status
		• Prioritization was also identified for factors related to socioeconomic statuses, such as low-income groups and non-health related key occupations and workers • Source	

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ High-risk groups
		• A national cross-sectional survey on COVID-19 vaccine uptake of 1,058 healthcare workers showed that only 33.3% had either registered or received the vaccine within three weeks of its availability in Saudi Arabia
		• The low vaccine uptake reported in this study, together with earlier studies reporting healthcare workers preference to delay getting vaccinated, should warrant scaling up public health communication efforts targeted towards healthcare workers to enhance vaccine confidence and acceptance
		• Source
			Preprint (last edited 1 February 2021)

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
		• A cross-sectional longitudinal study of 9,000 respondents to explore changes in COVID-19 vaccine hesitancy, attitudes to the priorities of U.K. government administration, and the emergence of new variants shows that there is a reduction in COVID-19 vaccine hesitancy, particularly attributable to an increased willingness for vaccination upon news of a variant strain.
		• Findings showed that there was a 15% increase in vaccine acceptance in the critical 50 days of case escalation leading to the UK government-mandated new year lockdown, but not enough to achieve herd immunity
		• Respondents raised concerns for the priority list of vaccine allocation, referencing the lack of representation for Black, Asian, and Minority Ethnic groups
			Preprint (last edited 1 February 2021)

Type of document	Relevance to question	Key findings	Recency or status
		• Considering preferences and concerns raised by the public could help build trust and community engagement in wider public health strategies • Source	

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ○ Content of messaging
	  ▪ Myths and misinformation about vaccines
		• A study exploring exposure to online misinformation around COVID-19 vaccines and its effects on intent to get vaccinated in the UK and USA showed that the treatment of misinformation led to a greater decrease in the number of respondents who had previously reported that they would definitely accept the vaccine relative to those who had received factual information
		• The exposure to misinformation had reduced the respondents' intent to accept a vaccine relative to exposure to factually correct information
		• Before treatment, 54.1% of 3000 U.K. respondents and 42.5% of 3001 U.S. respondents reported that they would definitely accept the COVID-19 vaccine
		• Exposure to misinformation resulted in a decrease in the number of respondents who had previously reported that they would definitely accept the vaccine relative to the control group by 6.2% in the U.K. and 6.4% in the U.S.
		• Effective public-health communication strategies should be tailored to counter vaccine misinformation
		• Source
			Published 5 February 2021

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
		• This study explored Chinese adults' attitudes and intention to get the COVID-19 vaccine and showed that components of persuasive messaging such as message framing, outcome uncertainty and number formats have no significant effects on vaccination attitudes and intention
		• Messaging framing involves gain- and loss-framing, in which when the perceived risk is low, gain-framed messaging has the potential to result in better
			Published 27 January 2021

Type of document	Relevance to question	Key findings	Recency or status
		persuasive outcomes, whereas loss-framed messaging is more effective when the perceived risk is high • Perceived low risk is considered certain and perceived high risk is considered uncertain • Number format to communicate risk and uncertainty was used through proportions, usually through a percentage format that is more understandable for people • Findings showed that age, education and situational factors were more positively correlated with attitudes and intention • Source	
	• Securing and distributing a reliable supply of vaccines and ancillary supplies o National purchasing o Distribution within country and to administration sites o Storage and handling within country • Allocating vaccines and ancillary supplies equitably o Approaches to developing and adjusting allocation rules • Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Delivery of the intervention ▪ Modality of delivery • Administering vaccines in ways that optimize timely uptake o With what explicit effort to leverage existing health-system arrangements o By whom	• Israel's vaccination campaign had achieved a great deal both in absolute terms and relative to other countries and the study identified and analyzed the factors contributing to the success of Israel's vaccine rollout in its initial phase, which can be divided into three major groups o The first group of factors consists of long-standing characteristics of Israel which are extrinsic to health care, including: ▪ Israel's small size, in terms of both area and population, its relatively young population, and its relatively warm weather in December 2020 ▪ Israel's centralized national system of government (as opposed to a federal system of government) ▪ Israel's experience in, and infrastructure for, planning and implementing prompt responses to large-scale national emergencies o The second group of factors relates to long-standing health-system features, including: ▪ The organizational, IT and logistic capacities of Israel's community-based healthcare providers (the four health plans), which are all large and national in scope	Published 26 January 2021

Type of document	Relevance to question	Key findings	Recency or status
		▪ The availability of a cadre of well-trained, salaried, community-based nurses who are employed directly by the health plans ▪ The tradition of effective cooperation between government, health plans, hospitals, and emergency care providers (particularly during national emergencies) and the frameworks for facilitating that cooperation ▪ The existence of well-functioning frameworks for making decisions about vaccinations and support tools for assisting in the implementation of vaccination campaigns ○ The third group consists of factors that are more recent and are specific to the COVID-19 vaccination effort, including: ▪ The rapid mobilization of special government funding for vaccine purchase and distribution ▪ Timely contracting for a large amount of vaccines relative to Israel's population ▪ The use of simple, clear and easily implementable criteria for determining who had priority for receiving vaccines in the early phases of the distribution process ▪ A creative technical response that addressed the demanding cold storage requirements of the Pfizer-BioNTech COVID-19 vaccine ▪ Well-tailored outreach efforts to encourage the population to sign up for vaccinations • While many of these facilitating factors are not unique to Israel, part of what made the Israeli rollout successful was its combination of facilitating factors (as opposed to each factor being unique separately) and the synergies it created among them • Source	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines	• A cross-sectional online survey of 2,650 people showed that the majority of respondents (86%) are	Published 20 January 2021

Type of document	Relevance to question	Key findings	Recency or status
	○ Target of intervention ▪ General public ○ Delivery of the intervention ▪ Modality of delivery ○ Content of messaging ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission ▪ Myths and misinformation about vaccines	using traditional media to obtain information on the COVID-19 vaccine and that the use of traditional media sources (both local and national television, national newspaper sources) was found to increase the likelihood of vaccination • The survey also showed that those who are less likely to get the vaccine are exclusively using social media as their source of information • There appeared to be no significant effects of interaction between the type of media or source of information and trust, and this level of analysis was conducted to determine if trust in a source was a potential mediator of the relationship between the channel of information and vaccine hesitancy • Perceived credibility of the sources being cited in traditional media to public-health expertise could be a driving force of these channels for vaccine acceptability • There is an opportunity for social-media platforms to consider how to contribute positively to vaccine hesitancy Source	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines ○ Target of intervention ▪ General public ▪ Individuals who are hesitant about or opposed to vaccination ○ Content of messaging • Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission	• The study examined the casual effect of exposure to distinct pro- and anti-vaccination message frames on individuals' intentions to get vaccinated ○ Several types of message content were focused on the safety and efficacy of the vaccine itself, the likelihood that others will take the vaccine, and the possible role of politics in promoting the vaccine • Respondents who received information about the safety/efficacy of the vaccine were more likely to report that they would take the vaccine • Respondents who received information that others were reluctant to take the vaccine were more likely to	Pre-print (last edited 6 January 2021)

Type of document	Relevance to question	Key findings	Recency or status
		report that they themselves would not take it, that other Americans would not take it, and that it was not important to get the vaccine • Respondents who received information about political influences on vaccine development expressed hesitancy to take the vaccine • Source	

	• Securing and distributing a reliable supply of vaccines and ancillary supplies
	  ○ National purchasing
	  ○ Delivery to country
	
	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
	  ▪ Front-line healthcare workers
	  ▪ Residents in long-term care homes and other congregate-care settings
	  ▪ People at increased risk of severe COVID-19 (e.g., older and/or frail adults, those with chronic health conditions)
	  ▪ Essential workers (beyond front-line healthcare workers) and/or those in work environments that put them at elevated risk (e.g., food processing and transit)
	  ○ Ensuring equity
		• This study provided estimates of global, regional and national target population sizes for COVID-19 vaccination to inform immunization strategies on a global scale
		• A strategy for vaccine allocation is proposed based on three main goals:
		  ○ To maintain core societal functions during the pandemic
		  ○ To protect people from irreversible and devastating harm (e.g., people over 65 years old or with high-risk health conditions)
		  ○ To control community transmission to return to a pre-pandemic baseline of economic and social activities
		• The size of target populations varies significantly by region with a considerable proportion of those needed to maintain essential functions of societies and of those over 80 years of age living in Europe and North America
		Study estimates reveal that it would take about six to seven months to produce enough vaccines to inoculate 60-80% of the world population in order to achieve herd immunity
		  ○ In countries with sufficient local capacity to produce vaccines, vaccination of a significant proportion of the population can be achieved within months. However, in lower- and middle-income countries that have much less capacity to
			Published 15 December 2020

Type of document	Relevance to question	Key findings	Recency or status
		secure and deliver vaccines, the vaccination process can last much longer • The strengthening of national and international supply chains to guarantee the distribution of vaccines to remote communities in developing countries will call for international institutions, national governments, and manufacturers to plan for vaccine allocation and negotiate affordable vaccine prices • When designing vaccination programs, each country should consider local epidemiology, underlying population health, the effectiveness of different vaccines, and projections of available vaccine doses Source	
	• Securing and distributing a reliable supply of vaccines and ancillary supplies ○ National purchasing • Allocating vaccines and ancillary supplies equitably ○ Ensuring equity	• This cross-sectional analysis describes the premarket purchase commitments for COVID-19 vaccines from manufacturers to recipient countries • As of November 15, 2020, premarket purchase commitments of 7.48 billion doses of COVID-19 vaccines from 13 manufacturers have been made ○ High-income countries have secured 51% of these doses even though they represent only 14% of the world's population ○ Only six manufacturers have sold premarket vaccines to low- and middle-income countries, with the majority of vaccines being provided by AstraZeneca/Oxford University, Novavax, the Gamaleya Research Institute of Russia, and the Chinese firms, SinoVac and CanSino ○ At least 500 million doses, or 250 courses, have been secured to ensure access to COVID-19 vaccines for developing countries through the COVAX facility of the WHO's ACT Accelerator, along with financing for half of its 2 billion dose-target by the end 2021	Published 15 December 2020

Type of document	Relevance to question	Key findings	Recency or status
		• Vaccine prices vary substantially – from US$6.00 per course to $74.00 per course • There has been limited transparency about purchasing contracts between manufacturers, countries and COVAX facility, which can lead to increased concerns about vaccine nationalism and access to vaccines • It is unknown how many countries will follow the WHO's proposed equitable allocations scheme for population-based distribution of vaccines, as several countries participating in the COVAX facility have bilateral agreements with manufacturers • Global collective action is needed to pool procurement and share COVID-19 vaccines in an equitable way so that there is fair access to populations around the world Source	

	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
	  ▪ Front-line healthcare workers
	  ▪ Essential workers and/or those in work environments that put them at elevated risk
	  ▪ Children (school aged)
	  ▪ Migrant workers
	  ▪ People in social environments that put them at elevated risk for COVID-19
	  ○ Ensuring equity
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ▪ Individuals who are hesitant about or opposed to vaccination
		• Among 9,122 respondents in the U.K. (49.4% response rate), 71.5% indicated wanting COVID-19 vaccination, and 9.6% would refuse
		  ○ Age and female gender were, respectively, strongly positively and negatively associated with wanting a vaccine
		• Although 2,068 respondents (22.7%) disagreed with the government's order of priority, 6,416 (70.3%) were against being able to expedite vaccination through payment
		  ○ Teachers, Black, Asian and Minority Ethnic (BAME) groups, general key workers, children, and university students were most cited by respondents for prioritization
		  ○ 32.6% of respondents were concerned that the priority list makes no reference to BAME groups
		Source
			Pre-print (last edited 8 December 2020)

Type of document	Relevance to question	Key findings	Recency or status

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ○ Delivery of the intervention
	  ▪ By whom
		• The study examined how timing and elite endorsement affect public opinion about COVID-19 vaccines in the United States
		• Approval before the election reduced willingness to vaccinate and confidence in COVID-19 vaccinations
		• A positive statement by President Donald Trump and Dr. Anthony Fauci had significant positive effects on public reactions towards COVID-19 vaccine
		  ○ The effect was found to be four times larger amongst Democrats than Republicans
		  ○ If President Trump endorsed the COVID-19 vaccine, confidence was raised about as much as Dr. Fauci's statement amongst Republicans, but confidence among Democrats was lowered
		• These studies demonstrated that the public opinion toward COVID-19 vaccinations may be responsive to political motivation and support
		• Further research should be directed towards developing strategies to accurately disseminate information and gain public support within future COVID-19 vaccination campaigns
		Source
			Pre-print (last edited 28 October 2020)

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ○ Delivery of the intervention
	  ▪ By whom
		• A global survey (13,426 people in 19 countries) showed respondents reporting higher levels of trust in information from government sources were more likely to accept a vaccine and take their employer's vaccine advice
		• Differences in COVID-19 vaccine acceptance rates ranged from almost 90% (in China) to less than 55% (in Russia)
		Source
			Published 20 October 2020

	• Allocating vaccines and ancillary supplies equitably ○ Allocation rules	• This study aimed to evaluate the optimal allocation of COVID-19 vaccines in the U.S. based on age and occupational status (i.e., essential worker or non-essential worker)	Published 6 October 2020

Type of document	Relevance to question	Key findings	Recency or status
	▪ Essential workers and/or those in work environments that put them at elevated risk	• The optimal allocation of COVID-19 vaccines is reported to prioritize the treatment of older-aged essential workers • Younger essential workers should be prioritized when trying to control the spread of the disease, while prioritization should be given to seniors when trying to control mortality • With the developed model, approximately 15,000 deaths are predicted to be prevented Source	
	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines o Target of intervention ▪ General public o Delivery of the intervention ▪ Modality of delivery o Content of messaging ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission • Administering vaccines in ways that optimize timely uptake o With what broader, complementary health interventions	• The main objectives of this study were to examine the attitude of participants towards a COVID-19 vaccine and highlight any challenges that may pose a barrier to vaccine uptake • The findings from this study reported that an estimated 68% of participants would be open to receiving a COVID-19 vaccine • The survey also found that longer vaccine-testing periods, increased efficacy and vaccines that would be developed in the U.S. were found to be significantly associated with increased COVID-19 vaccine acceptance • Based on the findings of this study, it was determined that targeted messages that promote COVID-19 vaccination and that alleviate concerns of individuals who are hesitant to receive vaccines should be disseminated, and that sufficient amount of time should be dedicated to these efforts prior to COVID-19 vaccine release to ensure maximum vaccine uptake • The indicator that can best predict COVID-19 vaccine acceptance was found to be previous vaccine history; the authors note that interventions (e.g., messages) that relay information regarding the safety of vaccines should help to improve COVID-19 vaccine acceptance	Published 3 October 2020

Type of document	Relevance to question	Key findings	Recency or status
		Source	

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ General public
	  ○ Delivery of the intervention
	  ▪ By whom
	  ○ Content of messaging
	  ▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission
	  ▪ Myths and misinformation about vaccines
		• A survey randomly assigned 7,064 respondents in the United States to read pro-vaccine communication materials with information emphasizing personal-health risks, economic costs or collective public-health consequences of not vaccinating, that had the message source (ordinary people or medical experts) also randomly assigned
		• Messages that emphasize personal-health risks and collective health consequences of not vaccinating were found to significantly increase intentions to vaccinate, and the effects were similar regardless of the message source and efforts to pre-emptively debunk concerns about safety of expedited clinical trials
		• Economic cost frames were found to have no discernible effect on vaccine intentions
		Source
			Last updated 8 September 2020 (pre-print)

	• Allocating vaccines and ancillary supplies equitably
	  ○ Allocation rules
	  ▪ People in social environments that put them at elevated risk for COVID-19
	• Administering vaccines in ways that optimize timely uptake
	  ○ Where
	  ▪ Other community settings
		• A heavy lift UAV quadcopter can expand COVID-19 vaccine delivery to Indigenous people living in villages impeded by rugged terrain
		• The travel time to a village normally accessible via walking a 2km trail that takes almost one hour took an estimated 1.23-1.38 minutes, 1.57-1.66 minutes, and an average of 3.13 minutes, for drones with 100, 250 and 500 vial loads, respectively
		Source
			Last updated 12 January 2021 (pre-print)

	• Communicating vaccine-allocation plans and the safety and effectiveness of vaccines
	  ○ Target of intervention
	  ▪ High-risk groups
	  ○ Delivery of the intervention
	  ▪ By whom
	  ○ Content of messaging
		• A survey of 311 older adults and 216 chronic respiratory patients in the U.K, showed 86% are willing to receive a future vaccine for COVID-19
		• The willingness to receive a COVID-19 vaccination was:
		  ○ Positively associated with the belief that COVID-19 will persist over time
			Published 5 September 2020

Type of document	Relevance to question	Key findings	Recency or status
	▪ Data and evidence about safety and about effectiveness in terms of both protection against COVID-19 and protection against transmission	○ Negatively associated with the perception that the media has over-exaggerated the risks of catching the virus • Perceived facilitators to the COVID-19 vaccination uptake included perceptions of risk to personal health, severity of COVID-19, and health consequences to others from COVID-19 • Concerns about vaccine safety acted as a barrier to COVID-19-vaccination uptake • Content of mass-media interventions to improve vaccine uptake should focus on the behaviour-change techniques (BCTs) of information about health, emotional, social and environmental consequences, and salience of consequences Source	

Appendix 3: COVID-19 vaccine roll-out elements from other countries

Country	Securing and distributing a reliable supply of vaccines and ancillary supplies	Allocating vaccines and ancillary supplies equitably	Communicating vaccine-allocation plans and the safety and effectiveness of vaccines	Administering vaccines in ways that optimize timely uptake	Surveillance, monitoring and evaluation, and reporting
Australia	• On 7 January 2021, the Australian Government released its COVID-19 Vaccine National Rollout Strategy, which outlines the targeted number of doses to be administered during each phase: ○ Phase 1A: 1.4 million ○ Phase 1B: 14.8 million ○ Phase 2A: 15.8 million ○ Phase 2B: 16 million ○ Phase 3: 13.6 million • Australia has partnered with the University of Oxford-AstraZeneca, Novavax, Pfizer-BioNTech, and COVAX Facility to secure a range of COVID-19 vaccine supply ○ Australia has secured an estimated 53.8 million doses of the University of Oxford-AstraZeneca vaccine – 3.8 million doses will be imported, while the remaining 50 million will be manufactured domestically by CSL Behring	• The COVID-19 Vaccine National Rollout Strategy highlights the priority populations for each of the five phases: ○ Phase 1A: quarantine and border workers, front-line healthcare workers, and aged-care and disability staff/residents ○ Phase 1B: older adults aged 70 years and over, other health care workers, adults with pre-existing conditions, high-risk workers (e.g., fire, police, and meat processing staff), and Aboriginal and Torres Strait Islander people ○ Phase 2A: Adults between 50-69 years of age, Aboriginal and Torres Strait Islander people, and other high-risk workers ○ Phase 2B: the remaining adult population	• To inform residents, the Government of Australia will be promoting an educational campaign on its COVID-19 vaccination program ○ This campaign will include medical experts discussing vaccine roll-out, priority populations, and projected timelines ○ This will be aimed towards priority groups, culturally diverse groups, and Aboriginal and Torres Strait Islander people • The Australian Government's Department of Health released a series of campaign materials to inform citizens on the COVID-19 vaccine, using television ads, videos, posters and social-media graphics	• In addition to residential disability and aged-care facilities, a total of 30-50 hospital sites will serve as centres (i.e., Pfizer Hubs) for vaccine administration, including: ○ Three in New South Wales; ○ Four in Victoria; ○ Three in Queensland; ○ Two in South Australia; and ○ One in each of Western Australia, Tasmania, Australian Capital Territory, and Northern Territory • Pfizer-BioNTech vaccines will only be administered at Hospital/Pfizer Hubs ○ General practices will provide vaccines to individuals aged 70	• All successfully administered COVID-19 vaccinations will be documented into reporting and monitoring systems (e.g., Australian Immunisation Register) ○ This will include personal information such as name, date of birth, contact details, gender, and if applicable, healthcare number and Medicare identifier ○ Information from the Australian Immunisation Register is routinely uploaded to the Enterprise Data Warehouse (EDW) ○ De-identified data from the EDW will be transferred to the Vaccine Data Solution, a software

	○ The government has secured 51 million doses of the Novavax vaccine, which will be manufactured and imported internationally from Europe ○ Australia has secured 10 million Pfizer-BioNTech vaccine doses, which will be manufactured and imported from the United States, Belgium, and Germany ○ On 4 February 2021, the Department of Health announced that Australia will receive an additional 10 million doses of the Pfizer-BioNTech vaccine in the second half of 2021, resulting in a total of 20 million secured doses • On 24 December 2020, the government announced that DHL Supply Chain and Linfox will lead the COVID-19 vaccine distribution in Australia, which will be required to track the temperature of the vaccines and manage ancillary supplies (e.g., needles, syringes, and personal protective equipment)	○ Phase 3: residents younger than 18 years of age and those younger than 16 years of age for the Pfizer vaccine only	○ Educational material (e.g., videos) with translated subtitles are now available in multiple languages, such as Arabic, Korean, Italian, Hindi, Spanish, and Russian ○ The Government of Australia invested a total of $23.9 million into the development of this vaccine information campaign	and over, individuals with pre-existing conditions, and in Phase 1B, Aboriginal and Torres Strait Islander people ○ The Oxford-AstraZeneca vaccine will be administered at general practitioner-led respiratory clinics, select general practices, state-run vaccination clinics, and Aboriginal Controlled Community Health Centres • Vaccines will be administered to long-term care home residents in an estimated 240 aged care facilities in over 190 regions across all states and territories in Australia • On 2 February 2021, an investment of $1.9 billion was announced to boost the national COVID-19 vaccine roll-out plan	that helps to monitor the coverage and logistics of the COVID-19 vaccine roll-out • The Australian Government has partnered with Accenture to develop a monitoring program for COVID-19 vaccines

	• On 25 January 2021, the Therapeutic Goods Administration (TGA) provisionally approved the use of the Pfizer-BioNTech COVID-19 vaccine in Australia
	• On 15 February 2021, Australia received its first shipment of over 142,000 doses of the vaccine
	  ○ Vaccine rollout commenced as scheduled on 22 February 2021
	• On 16 February 2021, the TGA provisionally approved the use of the Oxford-AstraZeneca COVID-19 vaccines for citizens aged 18 years and older
	  ○ Vaccine delivery will commence in March 2021
	• Delivery of the Pfizer-BioNTech vaccine will consist of:
	  ○ verifying dispatched batches at the border
	  ○ distributing imported doses to vaccination sites
	• In order to safely store and handle the Pfizer-BioNTech vaccine, the Government of Australia is preparing to secure cold-
				• The Government of Australia has called upon the following four providers to help support the vaccine workforce with increased staff and training initiatives:
				  ○ Aspen Medical
				  ○ Healthcare Australia
				  ○ International SOS
				  ○ Sonic Clinical Services
				• In partnership with the Australian College of Nursing, the federal government of Australia is creating fully funded, accredited training modules for vaccination providers, and non-clinical and administrative staff; training will be available to:
				  ○ Health professionals in hospitals
				  ○ General practices
				  ○ State and Commonwealth clinics
				  ○ Aboriginal Community Controlled Health Organizations	

	chain storage, staff training, and regular management of equipment and monitoring systems			○ Pharmacies • The subset of "Core" modules will cover: ○ Handling and storage ○ Communication and purpose ○ Multi-dose vial training ○ Documentation and reporting ○ Safety and surveillance • The second/ "additional" subset of training modules will cover detailed topics pertaining to the Pfizer-BioNTech, Novavax, and Oxford-AstraZeneca vaccines	
China	• China has established and implemented whole-process traceability systems for COVID-19 vaccines, including in-out inventory registration, production, transportation, storage and administration, and to ensure the supply of vaccines through various methods such as precise deployment, accelerated turnover, and matching demand according to the	• China implemented a two-step strategy for COVID-19 vaccination ○ The first step is the vaccination of priority populations, including the workers in the cold-chain industry, port inspection and quarantine, ship piloting, aviation, public transport, fresh markets, healthcare settings, and those who plan to work or study	• On 7 January 2021, China CDC issued the 30 questions and answers about COVID-19 vaccines, covering the vaccine-allocation plans, vaccination mechanism, effectiveness and safety, current vaccine options, vaccination locations, vaccine-administration protocols,	• The administration of COVID-19 vaccines is carried out in vaccination sites that are approved by local health-administration departments ○ Generally, the vaccination sites are set up in the health service centres, township health centres or general hospitals in the jurisdictions	• The Vaccine Administration Law of the People's Republic of China indicates that the state shall implement whole process electronic traceability systems for vaccines • After vaccine marketing, the vaccine production, transportation, storage and administration shall be recorded and

	vaccine plan of each province
	• The pricing of COVID-19 vaccines is developed by the vaccine industry based on the attributes of public products and the related costs, and
	  ○ The government of China will provide COVID-19 vaccines to the public for free
	• As COVID-19 vaccines are put into use in China, the government will make the vaccine a global public product and supply the vaccines to the world at a fair and reasonable price
	• Until 5 January 2021, the Ministry of Industry and Information Technology (MIIT) has moved to facilitate corporate cooperation along industrial chains to accelerate the industrialization of COVID-19 vaccines and expand production capacity to ensure the supply of vaccines
	  ○ With 18 Chinese enterprises starting to build production capacity for COVID-19 vaccines so far, further improvement of the
		in countries and regions with medium or high risk of COVID-19 infection
		  ○ With COVID-19 vaccines officially approved to enter the market or the yield of vaccines improving steadily, the second step is to put more vaccines into use, inoculating the eligible population as widely as possible, with priority for the elderly and high-risk populations with underlying diseases
		• Given the availability and affordability of COVID-19 vaccines in developing countries, the government of China will consider providing vaccines in a variety of ways, including donations and unpaid assistance, based on specific circumstances
		• According to the National Health Commission (NHC), China aims to vaccinate the eligible population as widely as possible and gradually build an immune barrier within the whole
			contraindications, adverse events following immunization, transportation and storage, monitoring and documentary, behaviours after vaccination, and risk-mitigation efforts
			• On 3 February 2021, The Ministry of Public Security of China has deployed a national campaign to combat vaccine-related crimes, including manufacture and sale of fake vaccines, illegal operations, and smuggling of vaccines, illegal medical practice and related fraud activities
			• China's State Council Joint Prevention and Control Mechanism against COVID-19 holds regular press conferences that include information about COVID-19 vaccines
			• The government of China disseminates information about COVID-19 vaccines
				○ For the enterprises and organizations where the priority populations are concentrated, the temporary vaccination sites will be set up
				  ○ Information on vaccination sites will be made available to the public
				  ○ As of 9 January 2021, China has set up a total of 25,392 vaccination sites
				• During the vaccination process, the recipients should pay attention to and cooperate with the following aspects:
				  ○ Recipients need to bring identification documents, and wear personal protection equipment according to local prevention and control requirements, and truthfully provide information such as health status and vaccination contraindications
					the whole process traceability information, including vaccine types, manufacturers, dosage forms, formulation, batch numbers, expiration dates, and vaccination case records, shall be integrated into the electronic information system
					• The related vaccine laws have clear regulations on the monitoring, reporting and handling of adverse events following immunization
					• As of 31 January 2021, the surveillance analysis showed that the incidence of severe abnormal reactions caused by the COVID-19 vaccines currently used in China was no higher than that of the influenza vaccines, and the surveillance of adverse events related to COVID-19 vaccination in different places will be ongoing and dynamic

	manufacturing capacity of the inactivated vaccines will allow China to meet its huge vaccination demand ○ China National Biotec Group will implement a plan to expand production capacity and to ensure that more than one billion doses of inactivated COVID-19 vaccines are produced in 2021 ○ The Hong Kong Special Administrative Region (HKSAR) government has secured a total of 22.5 million doses of COVID-19 vaccines, enough to cover Hong Kong's 7.5-million population, as each person needs to take two jabs ○ As of 23 February 2021, China has granted conditional market approval to two domestically developed vaccines and now has 16 COVID-19 vaccines undergoing clinical trials, six of which have entered phase-3 clinical trials • On 25 January 2021, the Ministry of Transport of	population to control the epidemic ○ The vaccination is being administered first to key groups, then to high-risk groups and then to the general population, as the vaccine's production capacity increases • In Hong Kong, the priority groups include medical workers and the aged, nursing home staff, public-service providers such as street cleaners, postmen and discipline force members, and workers in cross-border transport, including truck drivers and crews • Hong Kong will begin to give the COVID-19 vaccine to its residents for free on 26 February 2021 as the first 1 million doses from Sinovac Biotech will arrive on that afternoon • In Macao, the priority was given to certain groups of people, including those engaged in front-line work for epidemic control and those who are at high risk in terms of occupational exposure ○ On 22 February 2021, the Macao Special	through popular social media, such as WeChat • On 17 February 2021, State Councilor and Foreign Minister Wang Yi attended a virtual UN Security Council Ministerial Open Briefing on COVID-19 Vaccine Issues in Beijing, and delivered a speech entitled "Strengthening Global Anti-pandemic Cooperation with a People-centered Approach"	○ After vaccination, recipients should stay for 30 minutes; if there is a suspected adverse reaction, immediately report to the vaccination institution and seek medical advice ○ After vaccination, wearing masks is recommended; other protective measures such as hand hygiene, ventilation, and social distancing need to be maintained • Different areas explored different administration methods, for example, setting up temporary vaccination locations and establishing online vaccination appointments for priority populations • On 24 January 2021, China CDC issued the technical recommendations on environmental specimen monitoring in vaccination sites,	• On 6 February 2021, a mobile application "Health Kit" was developed for checking the vaccination status, including four types of status: "no inoculation history", "having applied for and yet to receive vaccination", "first dose administered" and "immunization series completed", and this application could be in Chinese or English language • As of 9 February 2021, 40.52 million doses of COVID-19 vaccine have been administered in China

	China, the National Health Commission, the General Administration of Customs and the National Medical Products Administration issued the technical guideline about road transportation of COVID-19 vaccines and related products ○ The vehicles transporting COVID-19 vaccines will be exempted from tolls before 31 December 2021 • As of 9 February 2021, 40.52 million doses of COVID-19 vaccine have been administered in China • As of 8 February 2021, China is providing COVID-19 vaccine aid to 53 developing countries including Pakistan, and has exported or is in the process of exporting vaccines to 22 countries ○ On 3 February 2021, China decided to provide 10 million COVID-19 vaccine doses to COVAX to meet the urgent needs of developing countries ○ As of 22 February 2021, China has provided COVID-19 vaccine aid	Administrative Region (SAR) started inoculating local residents who are not in prioritized groups with mainland-made COVID-19 vaccines ○ As of 22 February 2021, about 15,000 residents in Macao had made reservations for inoculation and over 3,000 in prioritized groups had completed the inoculation		including the disinfection recommendations	

	to Equatorial Guinea and Zimbabwe, and will aid 19 more African countries as part of its commitment to make vaccines for global public good				
France	• As of 19 February 2021, France has administered over 3,668,000 vaccines, with 2,535,436 individuals having received their first dose and 1,132,918 having been administered the second dose • France has been allocated a total of 200 million vaccine doses through partnerships secured by the European Commission • Distribution of Pfizer-BioNTech vaccines to administration sites follows one of the following processes: ○ Delivery from the production plant to one of 11 private platforms capable of storing the vaccine at -80°C. Vaccines are then transported to pharmacies and institutional care facilities (e.g., long-term care) for use, or	• Based on the recommendations set forth by the French National Authority for Health, the Ministry for Solidarity and Health announced its vaccine strategy, which outlines a three-phase approach for vaccine allocation: ○ Priority groups in phase one include older adults, residents with disabilities, at-risk staff members in institutional care and healthcare workers ○ Phase two includes individuals aged 65 to 74 years ○ Phase three consists of other at-risk groups from within the population that have yet to be targeted (e.g., teachers and retail staff) • As of 18 January 2021, individuals aged 75 and older living at home and those under the age of 75	• On 9 November 2020, the French National Authority for Health issued a press release which stressed the importance of transparency among the general public in the vaccination-campaign process • In partnership with the Economic, Social and Environmental Council, a citizen collective was announced on 16 January 2021 to help support the COVID-19 vaccination campaign ○ This panel consists of a total of 35 citizens ○ The aim of this panel will be to collate the concerns and queries posed by the public and present them to the federal government	• The two-dose Pfizer-BioNTech vaccine is only to be administered by nurses and physicians, and the second dose will be administered after 21 days • COVID-19 vaccinations require an appointment to be made at a select vaccination centre • Pharmacies are expected to be vaccination administration sites in Phase 3 of the vaccine roll-out plan	• Public Health France has stated that the vaccination campaign will be coupled with publicly available surveillance, monitoring and evaluation indicators ○ Surveillance systems will be updated to help track the percentage of individuals that have been vaccinated ○ Additional indicators, such as vaccine efficacy, vaccine-related opinions (e.g., vaccine intentions), and vaccine adherence will also be documented ○ Supervised by both the National Health Insurance Fund and the General Directorate of Health, the "SI

	○ Direct delivery to one of 100 hospitals in the country that can safely store and administer them • Ancillary supplies were mass ordered prior to the arrival of the COVID-19 vaccine ○ Pharmacies and hospitals are responsible for delivering these supplies to institutional care facilities (e.g., long-term care homes) • On 29 January 2021, the Oxford-AstraZeneca vaccine was approved for use in France	but who have a high risk of contracting COVID-19 will now be included in Phase 1 of the vaccine campaign • According to the French National Authority for Health, the Ministry for Solidarity and Health recommends that the Pfizer-BioNTech and Moderna vaccines be administered to individuals aged 65 years and older and those with comorbidities, while the Oxford-AstraZeneca vaccine be delivered to at-risk individuals aged 50 to 64 and professionals in the health and social sectors aged 18 to 64 years old • As of 6 February 2021, the priority groups eligible to receive a COVID-19 vaccine consist of: ○ The elderly aged 75 and older ○ Long-term care home residents and staff ○ High-risk individuals (e.g., Trisomy 21, cancer, transplant patients, and rare diseases)			Vaccin Covid" system will be used for surveillance, monitoring, evaluation, and reporting of COVID-19 vaccine data • As of 19 February 2021, France has administered over 3,668,000 vaccines, with 2,535,436 individuals having received their first dose and 1,132,918 having been administered the second dose ○ To date, 3.8% of the total French population has been vaccinated ○ 41.4% of all doses have been administered to individuals aged 80 and older

		○ Older adults in healthcare facilities and serviced residences ○ Disability care resident ○ Healthcare professionals over the age of 18 with comorbidities • The Ministry for Solidarity and Health recommends that patients who have previously contracted COVID-19 wait at least three months, and preferably six months, prior to receiving a single dose of the COVID-19 vaccine			
Germany	• As of 21 February 2021, Germany has administered over 5.3 million COVID-19 vaccine doses • If all vaccine candidates are approved for use, Germany will have secured a total of 300 million vaccine doses ○ 85 million doses of the Pfizer-BioNTech COVID-19 vaccine are expected to be available by the end of the year ○ Two million doses of the Moderna vaccine are expected to be received by the end of the first quarter ○ Within the first quarter of 2021, Germany is	• Group 1, the highest priority group, is eligible to receive vaccines in the first stage: ○ Individuals aged 80 and older ○ Healthcare workers in intensive care, accident, and emergency units, and ambulatory services ○ Staff/residents of pension, care and nursing homes ○ Nurses who care for at-risk patients • Group 2 follows second and consists of: ○ Individuals between 70 and 80 years of age	• A Communications Management Committee has been established on the federal level to help disseminate information relating to vaccine development, roll-out, and timelines ○ This committee will primarily be targeting priority groups including healthcare workers, vulnerable populations, and the general public	• Vaccines are administered in vaccination centres and in care facilities by mobile teams during the centralized vaccination phases ○ Federal states are responsible for managing the operations of vaccination centres and ensuring safe management of vaccines • When Germany transitions into a decentralized vaccination phase, administration sites	• According to the National COVID-19 Vaccination Strategy, the Robert Koch Institute will collate non-personal data from vaccinated individuals (e.g., age, sex, residence, place and date of vaccination, and vaccine details) into a web-based data portal • The Robert Koch Institute and Paul Ehrlich Institute will lead the surveillance and evaluation of COVID-19 vaccines

	expected to receive between 11 and 13 million doses of the Pfizer-BioNTech vaccine and two million Moderna vaccine doses
	• Distribution of the Pfizer-BioNTech vaccine to federal states is based on the proportion of the population that reside in those regions
	  ○ Pfizer-BioNTech will deliver the vaccine to one of the designated delivery centres, from where it will then be distributed to regional vaccination centres for administration
	• A statement by Pfizer-BioNTech on 10 February 2021, announced a new production plant has been created in Marburg, Germany, with the initial manufacturing process of the COVID-19 vaccine having commenced
	  ○ It is projected that 250 million vaccine doses will be manufactured at this facility in the first half of 2021
	  ○ The estimated timeline for the distribution of the first batch of vaccines is April 2021
		○ At-risk individuals who may suffer a severe outcome (e.g., transplant patients, individuals with Trisomy 21, and dementia)
		○ Close contacts of long-term care home residents
		○ Public order units in law enforcement
		○ Pregnant women
		○ Individuals living in homeless shelters
		• Group 3, which is the third-highest priority group, includes:
		○ Individuals between the ages of 60 and 70 years
		○ At-risk individuals with pre-existing medical conditions (e.g., obesity, liver disease or autoimmune condition)
		○ Emergency medical-services staff (e.g., police officers and firefighters)
		○ Staff in the education and judiciary sector
		○ Staff in retail, the meat-processing industry and seasonal workers
		• According to the Permanent Vaccination Commission in Germany, individuals aged 65 years
				may expand to include medical institutions and general-practitioner clinics
				• An individual who suffers damage from the COVID-19 vaccine will receive care in accordance with the Federal Supply Act
					• This will include monitoring:
					○ Vaccination rates by conducting online surveys
					○ Vaccine safety through routine pharmacovigilance, surveillance of pregnant women, short-term app-based cohort studies, and long-term hospital-based case-control studies
					○ Vaccine efficacy by using case reports
					○ Digital health data
					• As of 21 February 2021, Germany has administered over 5.3 million vaccine doses
					○ To date, an estimated 4.2% of the entire population of Germany has been vaccinated
					○ Over 3.5 million primary doses and 1.8 million second doses have been administered
					○ Healthcare workers currently account for 45.3% of all administered doses

	• The Oxford-AstraZeneca vaccine was approved for use on 29 January 2021	and younger should initially be vaccinated with the Oxford-AstraZeneca vaccine			○ Nursing home residents account for a total of 24.6 % of all administered doses
Israel	• Distribution of Pfizer-BioNTech COVID-19 vaccine started in December 2020, where the government received permission from the manufacturers to repackage doses into tens or hundreds per shipment (instead of 1,000 per shipment) in order to avoid waste and create safer mobilization of doses to remote areas • According to Health Minister, Yuli Edelstein, Israel entered vaccine procurement negotiations early in the pandemic • Administration of second doses started on 10 January 2021 • Hospitals and medical facilities follow the distribution processes ascribed by their central health maintenance organizations (HMO) • Vaccines are repackaged to contain 300 doses or 60 doses, which are sent to national centres and	• To simplify the implementation process, the Ministry of Health revised the vaccination allocation to include all Israeli residents aged 60 or older and all health workers from December 2020 to February 2021, with vaccines available to all Israeli residents after this phase • As of 19 January 2021, vaccination roll-out was expanded to Israeli residents aged 40 and older • As of 23 January 2021, select HMOs started vaccination roll-out to Israeli residents aged 17 or 18 in order for them to return to school and write their final exams • Additional doses due to overstock were communicated and administered to local individuals	• Current priority and eligible population groups receive text messages from their health maintenance organizations (HMO) (health services that are provided to every citizen through a universal, compulsory medical insurance plan) about information on booking an appointment (either by phone or through the HMO online portal) • The Ministry of Health's website provides information to the general public on vaccine roll-out, priority groups for vaccine, and safety and efficacy • The Ministry of Health focused on tailored messaging to the general population on daily updates on the number of vaccinated individuals and	• Roles and responsibilities for administering vaccines are organized according to the following: ○ four HMOs for vaccinating older adults aged 60 or older and individuals with chronic conditions ○ national emergency services organizations for vaccinating nursing home residents ○ hospitals and health insurers for vaccinating front-line health workers • Vaccination sites and portable immunization stations in remote areas are designated by the Ministry of Health with assistance from the military and local authorities	• Israel has a single electronic medical record system that is shared and accessed by the four HMOs, which provided health data information to identify priority groups among all insured citizens • As of 17 January 2021, the Ministry of Health and Pfizer-BioNTech signed an agreement to share anonymized medical-record data between hospitals or health plans and research entities in order to measure vaccine roll-out, immunity • With the agreement, the Ministry of Health will receive weekly epidemiological reports on confirmed cases (total, by age, and other stratifications), hospitalizations, severe cases, ventilator use, number of deaths,

	subsequently repackaged in small boxes to ship three times a week to communities		addressing anti-vaccination messages on social media • Endorsements from political and religious leaders encouraged the general population, and religious Orthodox Jewish and Muslim populations to get vaccinated respectively	• The Ministry of Health plans to provide vaccinations 24/7, with health plans responding by recruiting nurses for vaccine administration • The Ministry of Health recruited community-based nurses, physicians, paramedics and EMTs to administer the vaccine • Adverse-event reporting was conducted electronically, with individuals monitored for at least 15 minutes after vaccination or 30 minutes for individuals with history of anaphylaxis • Professionals have access to a 24/7 call centre to ask for guidance and shipment information	symptomatic cases, and weekly number of vaccinations (total, by age, and other stratifications) • As of 22 February 2021, 51.5% of the population have received at least one dose of COVID-19 vaccine (which includes 89.9% of adults aged 60 and older) • The Ministry of Health stated that for Israelis who received both doses of vaccine, 14 days after the second dose, vaccines were 98.9% effective at preventing death and hospitalizations caused by COVID-19, 99.2% effective against serious illness, and reduced morbidity by 95.8%, • As restrictions continue to ease, the Ministry of Health unveiled a "Green Pass" system that allows fully vaccinated or those recovered from COVID-19 to enter specific businesses

New Zealand	• The New Zealand government has secured four pre-purchase agreements for COIVD-19 vaccines
	  ○ 750,000 courses from Pfizer-BioNTech
	  ○ Five million courses from Janssen
	  ○ 3.8 million courses from the University of Oxford-AstraZeneca
	  ○ 5.36 million courses from Novavax
	• The government has secured enough vaccine doses to vaccinate the entire population of New Zealand as well as the Pacific Islanders
	• An inventory management system is being developed for COVID-19 vaccines that will store data on where vaccines are allocated, their volumes, temperatures, and expiration dates to minimize wastage
	• The Ministry of Health has purchased nine freezers to store more than 1.5 million doses of the Pfizer-BioNTech vaccine
	• Pfizer-BioNTech will be responsible for delivering the vaccines to New Zealand
		• New Zealand has prepared three different scenarios for vaccine roll-out based on the level of transmission present within country at the time of the roll-out
		• The allocation plan illustrates that the higher the rate of transmission present, the more the allocation focus will be on close contacts of the infected and people most vulnerable to exposure
		• The Ministry of Health is working in partnership with the Māori and Pacific neighbours to plan for their rollout programs
		• First priority for vaccination are border workers, the COVID-19 front-line healthcare workers and their household contacts, with the expected timeline for vaccination of this group being the second quarter of 2021
		• New Zealand expects to have the vaccination of its border workers completed within two to three weeks of initial vaccinations
		• The aim of New Zealand's government is to start vaccinating the
			• Information on the COVID-19 vaccine roll-out, procedures for getting a vaccine, and the safety and effectiveness of the vaccines are posted on the New Zealand government's official COVID-19 vaccine website
			• The Minister for COVID-19 Response said in a 27 January 2021 press conference that preparation is underway for a public awareness and reassurance campaign centred around vaccine safety that will include paid advertising
				• There are over 12,000 health professionals ready to administer vaccines
				• New Zealand is planning for an extra 2,000-3,000 full-time vaccinators to be trained and available throughout New Zealand during its vaccination campaign
				• Vaccinators will be sourced from non-practising nurses, doctors or pharmacists, final-year medical, nursing or pharmacy students, and other health professionals who have vaccinations within their scope
				• The Ministry of Health has contracted the Immunisation Advisory Centre to begin training health professionals in February 2021 on COVID-19 vaccine administration
				• Medsafe has recommended a dose interval of at least 21 days between the first and second doses of
					• New Zealand's National Immunisation Register is being replaced by the National Immunisation Solution to allow health workers to record vaccinations anywhere, anytime, and to fully support the COVID-19 roll-out
					• According to the Prime Minister, New Zealand is starting with a gradual roll-out to test its distributions systems and logistical arrangements for transporting the Pfizer-BioNTech vaccine

	• The Minister of COVID Response indicated at a press conference on 4 February 2021 that New Zealand's delivery agreement with Pfizer is that it would receive 225,000 courses (450,000 doses) of vaccines in the first quarter of 2021 • New Zealand is reportedly due to receive 249,600 doses of Oxford-AstraZeneca vaccine through the COVAX facility, including a few doses in quarter one of 2021 • Following the provisional approval of the Pfizer-BioNTech vaccine by Medsafe on 3 February 2021, the first doses arrived in Auckland on 15 February 2021 • Over $66 million has been allocated by the New Zealand government to support the roll-out of COVID-19 vaccines, including purchasing supplies to vaccinate the population and providing support to the Pacific countries	general public in the second half of 2021 • Everyone in the country will have access to COVID-19 vaccines free of charge • At the press conference on 4 February 2021, the Minister of COVID Response said that they had been advised that Olympic athletes would need vaccination towards the middle of 2021 and it is anticipated that vaccines will be widely available in New Zealand by that time for athletes to get vaccinated according to the vaccination timetable		the Pfizer-BioNTech vaccine • A small group of vaccinators received their first doses of the Pfizer-BioNTech vaccine on 19 February 2021 as part of New Zealand's trial run for the roll-out of its vaccination program • New Zealand began vaccinating its border workers in Aotearoa on 20 February 2021 and in Wellington on 22 February 2021	
U.K.	• A U.K. Government Vaccination Taskforce was established in April 2020,	• In December 2020, the United Kingdom Government released	• The U.K. government released a vaccine-delivery plan that	• Three types of vaccination sites have been established: 1)	• Adverse events and safety concerns following COVID-19

	and the task force signed deals to buy vaccines from multiple developers and suppliers • The task force also expanded the U.K.'s vaccine manufacturing capability to further increase vaccine production • According to a news report, the U.K. has ordered 100 million doses of the Oxford-AstraZeneca vaccine and 40 million doses of the Pfizer-BioNTech vaccine, which together is enough to vaccinate the entire population • As of 24 February 2021, more than 17.9 million people have had a first vaccine dose – equivalent to one in three adults in the U.K. – and more than 642,000 have had a second dose • The number of first vaccine doses administered each day has been increasing since December, reaching more than 400,000 a day by mid-February • As of 24 February 2021, all English regions except London have given the	advice on priority groups for COVID-19 vaccination, which reported that vaccination priorities should be the prevention of COVID-19 mortality, and the protection of health and social-care staff and systems • Secondary priorities should include vaccination of individuals at increased risk of hospitalization and increased risk of exposure, and to maintain resilience in essential services • The order of priority of COVID-19 vaccination is: ○ 1) residents in a care home for older adults and their carers; ○ 2) all those aged 80 and over and front-line health and social-care workers; ○ 3) all those 75 years of age and over; ○ 4) all those 70 years of age and over and clinically extremely vulnerable; ○ 5) all those 65 years of age and over; ○ 6) all individuals aged 16 to 64 with underlying health conditions which put	stated that they are working at the national, regional and local levels to establish partnerships with authorities, communities, healthcare staff and patients to ensure that accessible information is available to the public ○ It is also working to ensure that local implementation plans are tailored to support all individuals • The Mosques and Imams National Advisory Board is leading a campaign to reassure its faithful are among those publicly advocating that COVID-19 vaccinations are safe and compatible with Islamic practices	vaccination centres using large-scale venues such as football stadiums; 2) hospital hubs; and 3) local vaccination services, using primary-care services and pharmacy teams • In largely rural areas, vaccination centres will be a mobile unit • To ensure that there is a sufficient workforce to deliver the vaccination program, changes to the Human Medicines Regulations now permit non-registered healthcare professionals to administer the COVID-19 vaccine • Local vaccination service sites are being run by a mixture of primary-care networks and community pharmacies • The vaccination campaign to reach as many people as possible was boosted by a shift in policy in early January, which prioritized the first	vaccine administration should be reported to the Medicines and Healthcare Products Regulatory Agency using the established Coronavirus Yellow Card reporting scheme • As of 24 February 2021, more than 17.9 million people have had a first vaccine dose – equivalent to one in three adults in the U.K. – and more than 642,000 have had a second dose • The number of first vaccine doses administered each day has been increasing since December, reaching more than 400,000 a day by mid-February • As of 24 February 2021, all English regions except London have given the first dose of a vaccine to more than 90% of people aged 70 or over, which is a total of 7.1 million people

	first dose of a vaccine to more than 90% of people aged 70 or over, which is a total of 7.1 million people	them at a higher risk of serious disease and mortality; ○ 7) all those 60 years of age and over; ○ 8) all those 55 years of age and over; and ○ 9) all those 50 years of age and over		dose of a vaccine, with a second dose up to 12 weeks later	
U.S.	• The Department of Health and Human Services (HHS) and the Department of Defense (DoD) jointly lead a vaccine production and distribution strategy called Operation Warp Speed (OWS) ○ Its main goal is to deliver 300 million doses of safe and effective vaccines ○ Actions supporting OWS include HHS funding development and manufacturing of vaccine candidates, securing agreements to acquire vaccine doses, and building manufacturing capacity for successful vaccine candidates ○ DoD is partnering with the Centers for Disease Control and Prevention (CDC) and other parts of HHS to coordinate	• The CDC provided recommendations to federal, state and local governments about who should receive COVID-19 vaccines first based on recommendations from the Advisory Committee on Immunization Practices (ACIP) ○ On 1 December 2020, ACIP recommended that healthcare personnel and long-term care facility residents be vaccinated first (Phase 1a) • A subsequent update on 20 December 2020 recommended that Phase 1b include persons aged 75 or older and non-healthcare front-line essential workers, and that Phase 1c, include persons aged 65-74 years, persons aged 16-64 with high-risk medical conditions, and	• CDC updates and disseminates information about vaccine safety, effectiveness, allocation strategy and distribution process for the general public, as well as additional information for healthcare professionals	• OWS's COVID-19 vaccine distribution process utilizes existing networks, partnerships and processes to provide access to vaccines across the United States as safely and quickly as possible • The Pfizer-BioNTech and the Moderna COVID-19 vaccines are being allocated across states and jurisdictions, that follow procedures for ordering first- and second-dose allocations	• The CDC, FDA and other federal partners have many existing systems and data sources to facilitate continuous safety monitoring of vaccines • The CDC and FDA have also expanded safety monitoring systems and strategies have been developed as an additional layer of safety monitoring to evaluate COVID-19 vaccine safety in real time • These additional strategies include a smartphone-based, post-vaccine health checker for those who have received COVID-19 vaccines called V-safe, which uses text messaging and web surveys from CDC to check in with vaccine recipients as

	supply, production and distribution of vaccines • On 12 February 2021, Pfizer-BioNTech announced that the U.S. government exercised its right to purchase an additional 100 million doses of the Pfizer-BioNTech COVID-19 Vaccine, bringing the total to 300 million • On 16 February 2021, Moderna provided a vaccine-supply update for the U.S., stating that it expects to deliver 100 million doses by March 2021 and an additional 100 million doses by the end of May 2021 • As of 22 February 2021, CDC reports that 75.2 million doses of COVID-19 vaccinations have been distributed and 64.2 million doses have been administered	other essential workers not covered in Phase 1b			well as provide second dose reminders if needed o They also include the CDC's National Healthcare Safety Network (NHSN), an acute and long-term care facility monitoring system, and the FDA monitoring other large insurer/payer databases to facilitate claims-based data • As of 22 February 2021, CDC reports that 75.2 million doses of COVID-19 vaccinations have been distributed and 64.2 million doses have been administered

Appendix 4: COVID-19 vaccine roll-out elements from Canadian provinces and territories

Province/ territory	Securing and distributing a reliable supply of vaccines and ancillary supplies	Allocating vaccines and ancillary supplies equitably	Communicating vaccine-allocation plans and the safety and effectiveness of vaccines	Administering vaccines in ways that optimize timely uptake	Surveillance, monitoring and evaluation, and reporting
Pan-Canadian	• As of 26 February 2021, Canada has recently approved the AstraZeneca COVID-19 vaccine • As of 24 February 2021, Canada has received 2,003,810 vaccines from Pfizer-BioNTech and Moderna manufacturers • As of 24 February 2021, 81.4% of doses delivered to Canada have been administered • As of 24 February 2021, 3.06% of the population has received at least one dose of a COVID-19 vaccine • Through advance purchasing agreements with seven companies developing COVID-19 vaccines, Canada has secured enough doses for all Canadians who wish to be vaccinated ○ The doses were secured on the advice of the COVID-19 Vaccine Task Force	• On 12 January 2021, the National Advisory Committee on Immunization (NACI) issued a statement outlining their most up-to-date recommendations to help guide the COVID-19 vaccine response in Canada • In November 2020, NACI released its initial Preliminary guidance on key populations for early COVID-19 immunization report to inform planning for the efficient, effective and equitable allocation of COVID-19 vaccines upon authorization for use in Canada ○ Key populations identified included those at high risk for severe illness or death, those most likely to transmit to those at high risk, essential workers, and those	• In December 2020, the Public Health Agency of Canada released a report stating that federal, provincial and territorial governments are required to provide ongoing access to comprehensive, accurate and clear information about COVID-19 vaccines and immunization plans in partnership with First Nations, Inuit and Metis leaders, health professionals and other stakeholders • NACI recommends making further communication efforts (e.g., cultural and linguistically diverse educational resources) to help improve the relay of vaccine information and establish transparency with the general public • The Government of Canada's Planning	• The Government of Canada's Planning guidance for administration of COVID-19 vaccine states that all provinces and territories are responsible for developing processes and preparing their health systems and providers to allocate, deliver, store, distribute and administer vaccines	• The Government of Canada's Planning guidance for administration of COVID-19 vaccine states that the safety approach will build upon the systems in place for monitoring other vaccines • Post-marketing surveillance will be undertaken by the Public Health Agency and Health Canada through the following mechanisms: ○ Canada Vigilance Program, which collects and assesses reports of suspected adverse reactions to the vaccines from manufacturers and from healthcare providers,

	• An immunization National Operations Centre within the Public Health Agency of Canada was established as the federal logistical coordination entity for managing COVID-19 vaccine delivery and collaboration with provinces and territories for vaccine distribution ○ The National Operations Centre is supported by a national team of experts and the Canadian Armed Forces ○ The National Operations Centre has 14 vaccine delivery sites across Canada, and FedEx Express Canada and Innomar Strategies are positioned to support the National Operations Centre with vaccine distribution • The Government of Canada is responsible for securing storage facilities and ancillary supplies ○ A total of 75 million immunization supplies have been secured (e.g., syringes, needles, gauze, and sharps containers) ○ A total of 422 freezers have been purchased	living or working in conditions with elevated risk for infection • On 18 December 2020, NACI recommended to further sequence its initial subset of key populations using a stage-based approach ○ Stage 1 includes residents/staff of care facilities, adults aged 70 and older (priority will initially be given to those over 80 years of age until supply increases), front-line healthcare and personal-support workers, and at-risk adults in Indigenous communities ○ Stage 2 includes essential workers, other healthcare professionals, and remaining congregate facility residents/staff (e.g., homeless shelters and correctional facilities) • NACI recommends planning the efficient and equitable distribution of COVID-19 vaccines in accordance with the established sub-	guidance for administration of COVID-19 vaccine states that multiple strategies, such as local and ethnic media and social media, should be used to provide vaccination information, and that tailored approaches are needed for vulnerable populations ○ Indigenous Services Canada (ISC) is developing resources to guide vaccination delivery, messaging and education • The report also states that outreach should be provided to healthcare providers, and the healthcare sector should be involved in vaccine communication efforts • On 20 February 2020, health officials in British Columbia stated that they are working to make the COVID-19 vaccine roll-out a culturally safe experience for Indigenous people		patients and their families ○ Canadian Adverse Events Following Immunization Surveillance System, which is a post-market vaccine safety monitoring system ○ Immunization Monitoring Program ACTive (IMPACT) network, which monitors for adverse effects from vaccines, vaccine failures and vaccine-preventable diseases ○ External networks such as the Canadian Immunization Research Network will also be involved in the COVID-19 vaccine safety initiatives • The Canadian Vaccine Safety Network, which assesses vaccine

	• Canada's vaccine program slowed down between 18 January 2021 and 14 February 2021 when production issues limited shipments to fewer than 350,000 doses
	• After an independent regulatory review, Health Canada has approved that six doses can be extracted from the Pfizer-BioNTech vaccine vials rather than five
	  ○ Canada has ordered 64 million of the special syringes required to extract the additional dose, and one million are expected to arrive the week of 8 February 2021
	• The Public Health Agency of Canada says it expects more than 640,000 doses from Pfizer-BioNTech and Moderna the week of 24 February 2021, which would represent the largest number of deliveries in a single week
		prioritization of key populations
		  ○ Under specific circumstances (e.g., when excess doses remain after immunizing all stage one groups in a facility), NACI acknowledges the benefit in vaccinating on-site stage-two populations in lieu of transporting remaining doses to another facility with stage-one individuals to avoid the risk of wastage during delivery
		• The Government of Canada's Planning guidance for administration of COVID-19 vaccine document stated that vaccines for second doses will be allocated at the same time as the first-dose quantities to ensure sufficient supply for the second dose at the appropriate interval after the first dose.
		• The federal government reported that 36 million Canadians are expected to be vaccinated by the end of September 2021
					safety in various age groups following vaccinations
					• The Special Immunization Clinics Network, which manages patients with adverse events following immunizations
					• As of 24 February 2021, Canada has received 2,003,810 vaccines from Pfizer-BioNTech and Moderna manufacturers
					• As of 24 February 2021, 81.4% of doses delivered to Canada have been administered

		• Most provinces have now completed vaccinations in long-term care, or are close to doing so, and vaccinations will now be expanded to seniors living independently			
British Columbia	• In January 2021, British Columbia's Centre for Disease Control released a plan for vaccine distribution which stated that the province is preparing for a range of COVID-19 vaccines with varying distribution methods • British Columbia is actively preparing for these vaccines by securing freezer capacity • Health Officials in British Columbia reported that a total of 792,695 vaccine doses are expected to be received by the end of March 2021 • Health Officials also reported that between February and March an average of 68,400 doses are expected to be administered per week, between April and June an average of 203,077 doses are expected to be administered per week, and	• The Government of British Columbia reported that it is working closely with the Provincial Health Services Authority, First Nations Health Authority, Health Emergency Management BC, Canadian Red Cross and Canadian Armed Forces to prepare a system that is ready to receive and distribute all vaccine types as they become approved and available • British Columbia's Centre for Disease Control released a plan for vaccine distribution which stated that the first groups to be vaccinated will be residents, staff and essential visitors to long-term care residents; individuals waiting for a long-term care placement; healthcare workers providing care	• ImmunizeBC has provided evidence-based immunization and tools specific to COVID-19 for residents of British Columbia • British Columbia's Centre for Disease Control reported that when the vaccine becomes available for the public, information will be shared widely	• The first phase of COVID-19 vaccine administration, which is of the priority populations, is occurring at public-health clinics • Once the larger public immunization begins, a notice from the British Columbia Pharmacy Association reported that community pharmacists will be involved to ensure timely uptake and administration • On 23 February 2021, the Provincial Health Officer also reported that a public-health order was issued to expand the number of health professions able to administer a COVID-19 vaccine ○ Dentists, paramedics, midwives, pharmacy technicians and retired nurses are now among those who can join	• British Columbia's Centre for Disease Control reported that they will closely monitor COVID-19 vaccine safety, uptake and effectiveness • Vaccine providers in British Columbia are asked to refer to the B.C. Centre for Disease Controls' reporting adverse events following immunization resource • As of 24 February 2021, British Columbia has reported that 224,354 doses have been given and the province has administered doses at a rate of 43.72 per 1,000 population

	early indications suggest that between July and September 471,538 doses will be administered per week • On 8 February 2021 the Provincial Health Officer reported that the province is on track to begin mass immunization clinics in March • As of 24 February 2021, British Columbia has reported that 224,354 doses have been given and the province has administered doses at a rate of 43.72 per 1,000 population • There has been a total of 287,950 doses delivered so far and the province has received enough of the vaccine to give 5.6% of its population a single dose • The province has used 77.91% of its available vaccine supply	for COVID-19 patients; First Nations communities in remote and isolated locations • The vaccination program will then expand to include community-based seniors; individuals experiencing homelessness or using shelters; adults in group homes or mental health residential care; long-term care home support recipients and staff; hospital staff, community physicians and medical specialists; Indigenous communities not vaccinated in the first stage • On 23 February 2021, the Provincial Health Officer stated that details of how seniors 80 and older who live in the community, those who are next on the vaccine priority list, will receive their vaccines, will be released on 1 March 2021		the vaccination work force over the next six months • British Columbia plans on opening 172 vaccination sites across the province as it ramps up to immunize the general population • Provincial Health Officials reported that mobile clinics in self-contained vehicles will be available for some rural communities and for people who are home bound due to mobility issues	
Alberta	• As of 18 February 2021, Alberta has received 205,875 doses of COVID-19 vaccines from the Government of Canada	• Alberta began its vaccination rollout in December 2020 with a phased approach o Phase 1a (started in December 2020)	• Alberta Health Services has a COVID-19 immunization booking webpage and a Frequently-asked Questions page on their	• COVID-19 immunization facilities will be designated by AHS in congregate-care settings	• Alberta's Immunization Regulation requires health practitioners to report immunizations

	○ 153,075 doses of the Pfizer-BioNTech vaccine ○ 52,800 doses of the Moderna vaccine • As of 22 February 2021, Alberta has administered 180,755 doses of COVID-19 vaccines ○ 73,718 Albertans have been fully vaccinated with two doses • Forecasted weekly allocations for the Pfizer-BioNTech and the Moderna vaccines for Alberta are updated regularly on the Government of Canada's website • The Alberta government has a policy describing the requirements for storing and handling the Pfizer-BioNTech and Moderna vaccines, as well as vaccines that require storage between 2C and 8C	focuses on vaccinating workers and residents of acute-care sites in Edmonton and Calgary with the highest COVID-19 concerns (e.g., front-line healthcare workers and residents of long-term care homes) ○ Seniors 75 years and older as well as First Nations, Inuit, Métis, and persons 65 years and older living in a First Nations community or Métis settlement will be prioritized for Phase 1b beginning in February 2021 • Alberta released its plan for Phase 2 vaccinations, targeted to begin in April 2021, to include: ○ Group A: anyone aged 65 to 74, First Nations and Métis people aged 50 to 64, staff of licensed supportive-living facilities not included in Phase 1 ○ Group B: Albertans aged 18 to 64 with high-risk underlying conditions	website that is regularly updated with information on the COVID-19 vaccination rollout and how to book an appointment • The government of Alberta's COVID-19 vaccine program webpage provides information on: ○ The number of vaccines administered in the province ○ Adverse events following immunization reported ○ Access to the appointment portal for booking vaccinations ○ Resources for seniors who need transportation to and from their vaccine appointments ○ Vaccine safety and the vaccine approval process ○ Details on the province's phased vaccine roll-out, including timelines ○ Who should and should not get vaccinated	• The AHS will collaborate with Indigenous Services Canada to designate congregate-care services on reserve • Alberta Health Services has an online booking tool for eligible healthcare workers to book immunization appointments • Eligible healthcare workers will receive an email with a link to book their immunization appointment online • Alberta's guideline for COVID-19 vaccination provides advice for individuals who may experience reactions after immunization, including calling a Health Service hotline • The guideline also describes infection prevention-and-control measures for vaccination venues and healthcare practitioners, including frequent disinfecting and use of PPE • Alberta will be administering second doses of the COVID-19 vaccine within 42 days after the first dose	electronically to Alberta Health within a week, effective 1 January 2021 • As of 18 February 2021, Alberta has received 205,875 doses of COVID-19 vaccines from the Government of Canada ○ 153,075 doses of the Pfizer-BioNTech vaccine ○ 52,800 doses of the Moderna vaccine • As of 22 February 2021, Alberta has administered 180,755 doses of COVID-19 vaccines ○ 73,718 Albertans have been fully vaccinated with two doses • Adverse events following immunization (AEFI) are reported to Alberta Health and Alberta Health Services and posted on Alberta's

		○ Group C: Residents and staff in congregate-living settings, healthcare workers who have a high potential for spread, and caregivers who are most at risk of severe outcomes ○ Group D: Albertans aged 50 to 74 and First Nations and Métis people aged 35 to 49 on and off reserve • Details on Phase 3 of the vaccine roll-out will be provided at a future date	• The province also communicates with Albertans through their social-media handles and regular news conferences and releases	• Starting 19 February 2021, Alberta Health Services (AHS) began vaccinating residents in retirement centres, lodges, supportive living, and other congregate-living facilities with people ages 75 years and older • Starting 24 February 2021, any Albertan born in 1946 or earlier can book an appointment for vaccination through its online booking tool	COVID-19 vaccine distribution website
Saskatchewan	• As of 18 February 2021, Saskatchewan has received 59,395 doses of COVID-19 vaccines from the Government of Canada ○ 43,095 doses of the Pfizer-BioNTech vaccine ○ 16,300 doses of the Moderna vaccine • Forecasted weekly allocations for the Pfizer-BioNTech and the Moderna vaccines for Saskatchewan are updated regularly on the Government of Canada's website	• Saskatchewan is currently in Phase 1 of its COVID-19 immunization plan which prioritizes front-line healthcare workers, long-term care residents and staff, residents over age 70, and residents over age 50 living in remote/northern Saskatchewan ○ These groups began receiving vaccines on 22 December 2020 based on a Pfizer-BioNTech vaccine	• The Saskatchewan government provides weekly press briefings, COVID-19 news releases, and a number of resources on its website about COVID-19 vaccines and distribution • The Saskatchewan plan indicates that the government's communication focuses on vaccine safety, accurate immunization information, prioritization of vaccination groups, and	• As part of its COVID-19 immunization plan, Saskatchewan conducted a pilot of the administration of 1,950 doses of the Pfizer-BioNTech vaccine to healthcare workers on 15 December 2020 ○ Pilot vaccine recipients received their second dose 21 days later during Phase 1 • For the pilot, all vaccine doses were transported to and administered at Regina General Hospital	• Measures have been taken to ensure that Saskatchewan's immunization administration system, Panorama, can record, store and manage COVID-19 vaccination records and enable reminders for second-dose follow-ups • As of 18 February 2021, Saskatchewan has received 59,395 doses of COVID-

	• As of 23 February 2021, 62,342 doses have been administered in Saskatchewan
	  ○ 42,547 first doses
	  ○ 19,795 second doses
	• Efforts have been made to secure COVID-19 vaccine storage equipment (freezers, fridges, power generators) for Saskatchewan First Nations communities
		delivery schedule of 10,725 doses per week
		  ○ The Saskatchewan government announced on 16 February 2021 that the Ministry of Health has added additional healthcare workers to the priority list in Phase 1, including individuals who will be directly involved in delivering COVID-19 vaccinations in Phase 2 of the roll-out
		• Allocations of the Moderna vaccine are now being received and allocated to the Far North Region of Saskatchewan
		• In Phase 2, the general population will be vaccinated in 10-year age increments, with targeted vaccinations being administered in select congregate living and extremely clinically vulnerable populations
		• The goal of the Saskatchewan government is for all residents being vaccinated during Phase 2 to be able to access
			the importance of maintaining existing public-health measures
			  ○ Information will be included in local and social media, direct mail, posters, and news conferences
				• During Phase 1 of the immunization, vaccinations are taking place in long-term care homes, communities in the Far North, and vaccination sites approved by the SHA
				• Saskatchewan requires two doses of vaccine per person and both first and second doses must be of the same vaccine
				  ○ During times of vaccine scarcity, the time between first and second doses will be extended so that more people can receive their first dose
				• Up to 2,200 people will be involved in administering COVID-19 vaccines during Phase 2, and approximately 675 healthcare workers will be redeployed to deliver vaccines
				• The Saskatchewan government intends for vaccines to be administered by physicians, nurse practitioners, and pharmacists in Phase 2
				• A staff scheduling system has been launched to allow all
					19 vaccines from the Government of Canada
					  ○ 43,095 doses of the Pfizer-BioNTech vaccine
					  ○ 16,300 doses of the Moderna vaccine
					• As of 23 February 2021, 62,342 doses have been administered in Saskatchewan
					  ○ 42,547 first doses
					  ○ 19,795 second doses

		vaccines where they live and work • There is no indication that vaccines will be made available through private means		SHA employees to opt-in for alerts on when they will be eligible to receive the COVID-19 vaccine • The province plans to open its first mass immunization clinic in April 2021 in Regina • Plans are underway to open 230 vaccination clinics in 180 communities throughout rural, urban and northern Saskatchewan • Saskatchewan's immunization system, Panorama, will be updated to set reminders for second-dose follow-ups • A scheduling system is being developed for easy online access to vaccine appointments, and a toll-free telephone line will be operational in March 2021 to allow residents to book appointments	
Manitoba	• As of 22 February 2021, Manitoba has received 84,810 vaccine doses and administered 62,365 doses • As of 22 February 2021, 2.3% of Manitobans over the age of 18 have been fully vaccinated	• Manitoba established a trilateral table on vaccine planning, including health experts, senior officials from Indigenous Services Canada, and the Canadian Armed Forces • In addition to the table, the province states there	• Manitoba maintains a constantly updated webpage dedicated to outlining in detail the specific groups of people currently eligible to book an appointment and receive a vaccine	• Manitoba plans for six modular and scalable models of vaccine delivery: a pilot site, supersites, focused immunization teams, pop-up/mobile sites, First Nations sites, and distributed delivery	• As of 22 February 2021, Manitoba has received 84,810 vaccine doses and administered 62,365 doses • As of 22 February 2021, 2.3% of Manitobans over

	• As of 17 February 2021, 19 vaccine shipments have arrived in the province
	• A vaccine delivery schedule has been published, and delivery numbers are confirmed up to the week of 29 March 2021
	  ○ Between the weeks of 22 February 2021 to 29 March 2021, 6,100 doses of the Moderna vaccine and 92,400 doses of the Pfizer-BioNTech vaccine are expected
	• Manitoba directly signed a deal to procure up to two million doses of a vaccine (that is currently in the first phase of human trials) being developed by Providence Therapeutics
	• As of 17 February 2021, the province had the capacity to administer up to 10,199 doses per day, if there were adequate vaccine supplies
	• Manitoba has procured 400 shipping containers for transporting vaccines and 200 specialized freezers and fridges
	• The province has procured more than 80,000 syringes, which enable the
		will be smaller fora established to advance priority issues and ensure dialogue to navigate prioritization for First Nations on- and off-reserve
		• A Vaccine Implementation Task Force and Vaccine Medical Advisory Table have been established
		• Eligibility criteria for vaccination are constantly updated and currently include individuals working in high-risk laboratories, immunization clinics, testing sites, isolation facilities, congregate-living facilities, licensed personal-care homes, healthcare workers (who meet specific eligibility criteria), and community service workers who work in congregate group-care settings
		• The province released detailed eligibility criteria for Stages 1 to 4 of the vaccine roll-out on 27 January 2021
		• The province is targeting to have the capacity to administer 20,000 doses per day by 1 April 2021
			• Manitoba has released clinical practice guidelines for vaccine use in special populations and issued a memo to healthcare providers regarding enhanced consent for special populations
			• The province released an interactive vaccine queue calculator for residents to understand their place in the vaccine priority line
			• The province has released a Supersite operational manual
			• As of 10 February 2021, Manitoba had 225 phone-line agents and plans to expand to 300 agents in March as well as implement online self-service booking
				• The province is targeting to have the capacity to administer 20,000 doses per day by 1 April 2021
				• A 28-day campaign was launched to vaccinate all eligible personal care home residents in 135 sites across Manitoba, using focused immunization teams who visit locations in all regional health authorities. This campaign uses the Moderna and Pfizer-BioNTech vaccines
				• Focused immunization teams will deliver second doses to all personal-care homes by the end of February 2021
				• The next focus for focused immunization teams is congregate-living settings, and vaccination will commence in sites with the most vulnerable residents
				• Staff working in personal-care homes and congregate-living settings are to be vaccinated at fixed vaccination sites
				• As of 3 February 2021, all residents of personal-care homes (estimated
					the age of 18 have been fully vaccinated
					• As of 17 February 2021, 19 vaccine shipments have arrived in the province
					• A vaccine delivery schedule has been published, and delivery numbers are confirmed up to the week of 29 March 2021
					  ○ Between the weeks of 22 February 2021 to 29 March 2021, 6,100 doses of the Moderna vaccine and 92,400 doses of the Pfizer-BioNTech vaccine are expected
					• The province is targeting to have the capacity to administer 20,000 doses per day by 1 April 2020
					• As of 17 February 2021, the province had the capacity to administer up to 10,199 doses per

	extraction of six doses per vial of the Pfizer-BioNTech vaccine • The province is modelling vaccine roll-out and distribution projections under high-supply and low-supply scenarios • The province maintains a complex data set to link vaccine deliveries with inventory levels and known appointments	• The province is collaborating with First Nations groups to use the initial Moderna vaccine doses to address First Nations priorities, including vaccination in northern and remote communities • As of 9 February 2021, 11,800 vaccine doses had been allocated to First Nations communities • A time-limited clinic in Winnipeg was opened to provide vaccination for First Nation health-care workers, Knowledge Keepers and Traditional Healers • Manitoba is currently in Stage 1 of its vaccine roll-out and expects to be in Stage 2 as early as April (dependent on vaccine supply) • The Vaccine Implementation Task Force has four operational planning principles: use the right model, at the right time; minimize the drain on the healthcare system; inject what you get; be ready to pivot • The province is modelling vaccine roll-		8,255) had been vaccinated once with second doses scheduled by the end of February • Based on supply projections as of 17 February 2021, Manitoba was projecting an average of 1,157 injections per day in February • Currently, supersites are in operation in Winnipeg, Brandon, Thompson and Vaxport, and there are plans to expand to up to 13 supersites (including two planned openings in March) • Supersites serve the dual purpose of administering vaccination while also serving as distribution hubs for focused immunization teams and pop-up/mobile clinics • Eligible Manitobans can call a dedicated phone line to book vaccination appointments at supersites or pop-up sites • A distributed model of doctors' offices and pharmacists is expected to administer 25% of daily doses in the second	day, if there were adequate vaccine supplies • The province maintains a complex data set to link vaccine deliveries with inventory levels and known appointments

		out and distribution projections under high-supply and low-supply scenarios		quarter, subject to approval of suitable vaccines ○ Thus far, 131 medical clinics and community pharmacies have signed up to participate in the distributed model • Focused Immunization Teams and Pop-up Clinics will each administer less than 5% of daily doses in the second quarter and will respond to needs • A 'Vaxport' , which is scheduled to open on 1 March 2021 in Thompson, will provide immunization for residents of remote northern First Nations, and municipal and Indigenous and Northern Affairs communities • The province is receiving applications from community pharmacists and physicians interested in providing COVID-19 vaccination, using vaccines that do not need freezing ○ Several eligibility criteria for medical clinics and pharmacies	

				have been outlined, and a Q&A targeted at potential physician and pharmacist partners exists • The province is actively recruiting healthcare and non-healthcare staff to work in immunization clinics and offering a micro-credential course for people to expand their scope of practice to include the administering COVID-19 vaccine • The province has expanded the criteria for who can work as an immunizer and designed various training options for new hires based on their level of experience • As of 17 February 2021, 2,040 full-time equivalent staff were working in vaccination centres; this number is down due to lack of vaccine • In addition to new staff hired, some public servants have been re-deployed to work with the Vaccine Implementation Task Force	
Ontario	• As of 23 February 2021, 585,707 total vaccine doses	• The provincial government's COVID-	• The province has published vaccine	• General guidelines for vaccination sites and	• The Pfizer-BioNTech and

	have been administered and 247,042 people have been fully vaccinated • As of 23 February 2021, 16,252 doses are being administered daily • There is a delivery schedule for the Pfizer-BioNTech and Moderna vaccines which states that the province should receive 1,056,510 total doses between the weeks of 22 February 2021 and 29 March 2021 (the vast majority of which will be doses from Pfizer-BioNTech) • The province states they have the capacity to vaccinate 40,000 per day and can quickly expand • The province has published vaccine storage and handling guidance for the Pfizer-BioNTech and Moderna vaccines including information regarding freezer setup, inspections, monitoring of storage equipment, vaccine transport, temperature excursion, and preparation for immunization clinics • Protocols have been established to move the Pfizer-BioNTech vaccine so it can be used in long-	19 Vaccine Distribution Task Force, with input from the National Advisory Committee on Immunization, recommends vaccination for all individuals in authorized age groups without contradictions but due to limited supply prioritization is initially given to certain groups • The vaccine distribution plan for deployment of the Pfizer-BioNTech and Moderna vaccines is divided into three phases • Phase I prioritizes residents and workers in congregate-living settings that care for seniors; highest, very high and high-priority healthcare workers; adults in First Nations, Métis, and Inuit populations; adults 80 years of age and older; and adult chronic home-care recipients ○ On 9 February 2021, the Ministry of Health released guidance for prioritizing healthcare workers to complement existing sequencing and prioritizes different healthcare workers	administration guidelines and information packets for healthcare providers regarding the Pfizer-BioNTech and Moderna vaccines • The province maintains a website dedicated to COVID-19 vaccine safety • The province has published a 'What you need to know before your COVID-19 vaccine appointment' information sheet • The COVID-19 Vaccine After Care Sheet includes a section to note the time and date of a patient's second dose • The Centre for Effective Practice has developed the PrOTCT PLAN and other resources to aid in having discussions with patients about COVID-19 vaccination • The Centre for Effective Practice has put together resources for understanding vaccine hesitancy in Black and First Nations,	priority populations served are available but the 34 public health units of the province will determine how best to roll-out vaccination • Vaccine delivery began with, and continues at, hospital-site clinics • Public health-led mass-vaccination sites (including continued hospital sites) can provide vaccination with a focus on people eligible for vaccination due to their occupation (such as healthcare workers and essential workers) as well as most adults once eligible • On-site clinics can provide vaccination for remote communities, First Nations reserves, and adult chronic home care recipients • Primary care/pharmacy/public health clinics can provide vaccination for populations prioritized due to biological factors (such as older age) and can provide vaccination to all remaining eligible Ontarians in Phase III	Moderna vaccine administration guidelines for healthcare providers include guidance regarding adverse events following vaccination • Adverse events following immunization are reported to Public Health Ontario and the Public Health Agency of Canada • Public Health Ontario has published a list of adverse events of special interest for COVID-19 vaccination surveillance • In addition, health professionals are required to report adverse events to local public-health units who will investigate and provide support • Guidance has been published for managing healthcare workers with symptoms within 48 hours of receiving

	term care and high-risk retirement home settings	according to risk of exposure, patient populations served, and the incidence of COVID-19 outbreaks • Phase II prioritizes essential workers (such as first responders and teachers); older adults (beginning with those 79 years of age and decreasing in five-year increments); at-risk individuals and their caregivers; those living and working in high-risk congregate settings; populations and communities facing barriers and at greater risk (e.g., Black and other racialized populations); and all adults (in decreasing five-year increments) • In Phase III, all remaining eligible Ontarians can be vaccinated • Phase I is estimated to run from December 2020 to March 2021, phase II from March 2021 to end of July 2021, and phase III from August 2021 onwards • In light of recent vaccine supply disruptions,	Inuit and Métis communities • The Ministry of Health has published "Vaccination recommendations for special populations" which regards people who are pregnant or breastfeeding, those with autoimmune conditions or who are immunocompromised, those with allergies, and children and adolescents	• Mobile sites can deliver vaccination to populations who need prioritization due to social or geographical factors, such as congregate-living settings, urban Indigenous populations, and racialized communities • Toronto Public Health launched a 'proof of concept' immunization clinic to test and adjust non-hospital vaccination plans ahead of mass vaccination • Expanded healthcare professionals (including nurse practitioners, registered nurses, registered practical nurses, pharmacists, pharmacy students and interns, and pharmacy technicians) are able to register and apply to participate in vaccination efforts via Ontario's Matching Portal • The University of Toronto Department of Family and Community Medicine and the Ontario College of Family Physicians developed a self-learning	COVID-19 vaccination

		current vaccination efforts are targeted at those most at risk of morbidity and mortality
		• As of 18 February 2021, most vaccine doses had been given to healthcare workers, long-term care and retirement-home residents, and long-term care and retirement-home staff (in that order)
		• By 18 February 2021, all long-term care residents had been offered their first vaccine dose
		• Operation Remote Immunity, which is led by Ornge, aims to vaccinate adults in 31 fly-in First Nations communities and Moosonee in Northern Ontario
		  ○ As of 17 February 2021, 8,000 doses had been distributed through Operation Remote Immunity
		  ○ The program aims to finish these vaccinations by the end of April 2021
		• The principles underlying the province's Ethical framework for COVID-19 vaccine distribution include minimizing
				series to build capacity amongst primary-care providers to support COVID-19 vaccination
				• For the Pfizer-BioNTech vaccine, Ontario intends to maintain a 21–27 day second-dose interval for residents in long-term care homes, retirement homes, and First Nations elder-care homes
				• Up to a 42-day second dose interval is permitted for all other groups
				• The province is protecting access to second doses of the Pfizer-BioNTech vaccine for those who have already received one dose
				• For the Moderna vaccine, a 28-day interval is being maintained for all who have received first doses
				• The Ministry of Health has published a "Pre-screening assessment tool for health care providers"	

		harms and maximizing benefits; equity; fairness; transparency; legitimacy; and public trust • Several organizations involved in primary care in Ontario have published a document titled "Partnering with primary care for local COVID-19 vaccine rollout in Ontario: A practical guide"			
Quebec	• As of 22 February 2021, 509,325 vaccine doses had been received and 365,978 doses had been administered • As of 22 February 2021, there was an average of 9,683 doses administered per day (over the previous seven days) • The Ministry of Health and Social Services is responsible for the centralized distribution of vaccines • The ministry began with distribution of the Pfizer-BioNTech vaccine to more than 20 sites in December 2020 • Weekly deliveries of Pfizer-BioNTech and/or Moderna vaccines are anticipated from January 2021 onwards	• According to the Quebec Immunization Committee, five values underpin the choices and objectives of the COVID-19 vaccination campaign in the context of limited vaccine supply: beneficence, equity, justice, reciprocity, and non-maleficence • The prioritization of groups for vaccination is based on the following four factors: age, presence of risk factors, profession, and living situation • Ten groups have been preliminarily identified to prioritize vaccine allocation ○ The first priority group includes vulnerable people in	• The provincial government maintains a webpage with information about COVID-19 vaccine safety, development, and role-out plans for Quebec • The Ministry of Health and Social Services published vaccination campaign guidelines for healthcare workers to update workers on the priority-based allocation of vaccines, their responsibilities and roles during the vaccination campaign, and resources available to them • The Ministry of Health maintains a website dedicated to demystifying beliefs	• COVID-19 vaccination distribution is being handled by the Quebec Immunization Program • The Public Health Ethics Committee has published a bulletin stating that mandatory vaccination of healthcare workers is not justifiable ○ The Ministry of Health and Social Services has also confirmed that vaccination will not be mandatory • New groups of healthcare professional have been authorized to administer influence or COVID-19 vaccines during the health emergency period if they have received	• The Quebec Vaccination Registry is an electronic databases that keeps track of all persons receiving vaccines in Quebec and all vaccines received by Quebec residents who may be out of the province • The Quebec Immunization Committee has recommended real-time and continuous monitoring of vaccine efficacy be conducted to make quick changes to plans, if needed • The Quebec Nosocomial

		long-term care and intermediate resources and family-type resources homes ○ The second priority group includes health- and social-care workers who have patient contact ○ The third priority group includes people living in private retirement homes and others in similarly vulnerable living situations ○ The fourth priority group includes rural and remote communities, where people often have chronic illnesses ○ The fifth to seventh priority groups include people aged 80 years of age and over; between 70 and 79 years of age; and between 60 and 69 years of age, respectively ○ The eighth priority group includes adults younger than 60 years of age who have a risk factor ○ The ninth priority group includes adults	regarding the risks of vaccination • The Ministry of Health and Social Services has published a common questions and answers regarding the COVID-19 vaccination campaign document intended for workers in the health- and social-care sectors • The Ministry of Health and Social Services has published an "Aid in clear consent" pamphlet with information about vaccine benefits and side-effects to complement the COVID-19 vaccination campaign	appropriate training from the ministry • The Ministry of Health and Social Services' digital learning environment includes training related to the COVID-19 vaccination campaign • The Quebec Vaccine Injury Compensation Program compensates people who have experienced bodily injury due to vaccination; however, COVID-19 is not currently on the list of diseases involved (but the program details are noted as being updated)	Infections Committee has made recommendations and produced algorithms regarding how to manage patients and healthcare workers with symptoms following COVID-19 vaccination • The Ministry of Health and Social Services published a one-page reminder regarding infection prevention and control measures for vaccinated healthcare workers • Health professionals have been directed to immediately report the following adverse events to their local public health unit if there is any suspicion they may be associated with vaccination: ○ Events requiring medical attention or hospitalization ○ Events leading to permanent disability

		younger than 60 years of age without risk factors but who work in essential services ○ The tenth priority group includes the rest of the adult population • Starting 25 February 2021, the general population aged 85 years or older will be able to start booking appointments for vaccination ○ One companion of a person 85 years of age or older can be vaccinated at the same time if the companion is 70 years of age or older and provides care to their partner at least three days per week • The Quebec Immunization Committee has recommended that, given the limited vaccine supply and high levels of virus circulation, one dose of the vaccine be initially given to all people in the first six priority groups ○ They recommend studying the level of			○ Events that place patients' lives at risk ○ Events that lead to death • Starting 25 February 2021, the general population aged 85 years or older will be able to start booking appointments for vaccination

		lasting protection from one dose and determining if a second dose is to be given or if additional doses are best allocated to other priority groups ○ The Immunization Committee released another report about second-dose administration during a shortage that also reiterated the recommendation to use the available doses to provide one dose to as many people as possible, monitor signs of effectiveness, and provide important second doses as soon as possible ○ On 23 February 2021, an additional analysis of vaccine effectiveness data was published by the Quebec Immunization Committee, and the committee again recommended using initial doses to vaccinate as many people as possible in the first six priority groups, while stressing			

		the importance of eventually distributing second doses and continuously monitoring emerging data • Second-dose administration for those in priority groups 1 and 2 is currently scheduled for March 2021 • The Quebec Immunization Committee released an interim report on 29 January 2021 regarding minimum age for mRNA vaccination; counter-interactions and precautions for vaccination; interchangeability of vaccines; second dose intervals; interactions between mRNA vaccines and other products; vaccination in people with confirmed COVID-19 infection; and side-effects after vaccination • The Ministry of Health and Social Services also issued a directive on 7 January 2021 to use available vaccine doses to immunize the greatest number of people			

		possible and not save second doses • The Quebec Immunization Committee has recommended that close helpers of vulnerable people (residents of long-term care homes) not be included in initial priority groups (unless they belong to these groups for another reason); they recommend including them alongside essential service workers • The Quebec Immunization Committee has issued guidance regarding the following domains to support the COVID-19 vaccination campaign: o Minimum age for administering mRNA vaccines o Counter-indications and precautions for certain groups of people o Interchangeability of COVID-19 vaccines o Second-dose intervals o Interactions between mRNA vaccines and other products			

		○ Vaccination of people with confirmed COVID-19 infection ○ Clinical manifestations following vaccination • The Ministry of Health and Social Services published a directive with a framework for determining the allocation of limited vaccine doses to prioritized remote and Indigenous communities			
New Brunswick	• To ensure optimal storage of the vaccine new ultra-low freezer units have been delivered to regional hospitals • As of 15 February 2021, 21,182 doses have been administered and 7,505 people have been fully vaccinated	• The New Brunswick Ministry of Health created the COVID-19 Vaccine Rollout plan identifying priority groups and the time frame for when each group will receive the vaccine ○ December 2020 – March 2021 prioritizes long-term care residents and staff, healthcare workers with direct COVID-19 patient contact, adults in First Nations communities and older New Brunswick residents ○ Spring 2021 prioritizes residents and staff of other communal settings (homeless	• The New Brunswick Ministry of Health website provides information for the general public on the province's vaccine roll-out plan ○ Information sheets outlining how the Pfizer-BioNTech and Moderna vaccines protect against COVID-19 are linked on the website ○ The website provides links for healthcare workers and the general public to Pfizer's official vaccine information site and Moderna's COVID-19 vaccination site	• The website provides vaccine after-care sheets for the Pfizer-BioNTech and Moderna vaccines offering information on what to do after receiving the vaccine • Immunization clinics follow the protocol set forth by the Government of Canada • For greater efficiency, individuals in priority groups are being contacted directly to register for their appointment • The Paramedics Association of New Brunswick gave its approval to have its members trained on giving vaccines, and paramedics would be	• Vaccinated individuals receive a record of immunization • Chief Medical Officer of Health Dr. Jennifer Russell urged all citizens in the province to download the COVID Alert App to ensure its effectiveness in keeping New Brunswickers safe

		shelters, correctional centres), other healthcare workers including pharmacists and first responders, and critical infrastructure workers (power, water and sewer) ○ In spring or summer 2021 the vaccine will be available to the remainder of the population • At a news conference on 21 January 2021, Premier Blaine Higgs responded to the province's reduced shipment of the Pfizer-BioNTech vaccine stating that vaccine clinics will have to reduce the number of vaccines administered ○ As a precautionary measure the province had set aside a number of vaccines from earlier shipments to ensure that those who received a first dose would receive their second dose within the appropriate time frame • The province has made adjustments to the roll-out timeline pushing	• A press release from the Government of New Brunswick provided a COVID-19 vaccination update detailing the allocation of vaccine clinics. ○ Vaccination clinics were set-up within eight long-term care facilities, as well as clinics in Campbellton, Edmundson, Fredericton and Saint John for healthcare workers at high risk of COVID-19 exposure, including those working within regional health facilities, the Extra-Mural Program, Ambulance New Brunswick, and healthcare workers at First nations communities • In a press conference on 4 February 2021, Chief Medical Officer Dr. Jennifer Russell stated, "Catching COVID-19 is not your fault and no one should be ashamed for catching it", urged citizens not to minimize their	used later in the roll-out when larger quantities of the vaccine are delivered to the province • Due to the Pfizer-BioNTech vaccine delivery delays, vaccinations for some healthcare workers were postponed to ensure there were enough vaccines for residents in long-term care facilities • First Nations health directors and community health nurses will begin working with public health to provide the vaccine in First Nation communities ○ A clinic in the Madawaska Maliseet First Nation will open the first week of March with clinics in other First Nation communities opening shortly after • Individuals 85 years of age and older not living in long-term care facilities will be notified by public health where they can get their vaccination in the coming weeks • Details on how and when to register for	

		back the start of the second phase to the start of April
		• Details on the priority groups for each phase was adjusted
		  ○ Phase 2 will include residents and staff of communal settings, healthcare professionals whp provide direct patient care, first responders, home-support workers for seniors, individuals over the age of 70, volunteers in long-term care facilities, individuals between the ages of 40 and 69 with chronic health conditions, and workers who regularly travel across the boarder
		  ○ Phase 3 will include individuals with two or more chronic health conditions, healthcare workers providing indirect patient care, school staff and high school and post-secondary students aged 16 to 24
			symptoms and asked that everyone get tested and not hesitate if they suspect they may have contracted the virus
			• Chief Medical Officer of Health Dr. Jennifer Russell announced that the province will delay administering the second dose of the vaccine for individuals who are considered to be at a lower risk
			  ○ The goal is to get a greater number of vulnerable people vaccinated with a first dose
			  ○ This approach will help lower the number of hospitalizations and make sure the healthcare system is not overwhelmed
			  ○ Dr. Russell stated that although this approach carries some unknowns, it is being used as an acceptable and manageable option
				vaccinations will be announced publicly closer to the start of phase 2	

Nova Scotia	• Five storage sites have been developed with ultra-	• The Nova Scotia Ministry of Health	• The Government of Nova Scotia website	• As of the week of 8 February 2021, four	• In collaboration with the Dalhousie

	low freezers to store vaccines safely ○ Three more cold storage sites will be operational by the end of January 2021 in Amherst, Antigonish and Bridgewater • To ensure the safe transport of the vaccine Dr. Robert Strang stated that preliminary tests were taken to determine the best possible methods for transporting the vaccine to confirm that it remained at a stable temperature • During the first phase of the vaccination roll-out the province will be testing several distribution methods so that when larger amounts of the vaccine are delivered in phase two, the province will have established an efficient delivery method ○ The objective is to deliver approximately 10,000 doses per day • In addition to the federal government's efforts to secure low headspace syringes, the province is also working independently to procure the syringes	developed a vaccine-distribution strategy prioritizing groups throughout three phases ○ Phase one will run from January to April 2021 and will include front-line healthcare workers who are closely involved in the COVID-19 response, residents, staff and designated caregivers of long-term care facilities, residents and staff of residential-care facilities, adult residential centres and regional rehabilitation centres, seniors living in the community who are 75 years of age or older, healthcare workers (doctors, paramedics) who are in direct contact with patients ○ Phase two will begin in May 2021 and will include remaining healthcare workers and essential workers ○ Phase three will begin in summer 2021 and will include individuals who were not prioritized in phase one or two	provides information about the vaccine, how its citizens are being prioritized and the three-phase distribution program ○ The website links to the vaccines and treatments for COVID-19 page on the Government of Canada's website • The Government of Nova Scotia's YouTube channel provides regular updates on the pandemic as well as allocation and distribution of vaccines • In collaboration with the Dalhousie University Faculty of Medicine, the Government of Nova Scotia posted on Twitter a short video debunking the myth, "We don't know what's in these vaccines" • Dr. Strang reiterated the provinces mantra, "When in doubt wear a mask" • When prototype community clinics open, a letter will be sent in the mail to eligible individuals providing	healthcare worker clinics are running in Halifax, Truro, Kemptville and Yarmouth • During the week of 22 February 2021, three more clinics have opened at St. Martha's Regional Hospital, South Shore Regional Hospital and Cumberland Regional Hospital to vaccinate healthcare workers • Four more long-term care facilities will be receiving their vaccines during the week of 8 February 2021 and second dose clinics for some long-term care facilities will also be starting this week • Future prototype clinics will also be established in pharmacy settings and Mi'kmaq communities ○ Four pharmacy prototype clinics are planned to begin in early March in Halifax county, Cumberland county, Shelburne county and Inverness county • Starting the week of March 1st, the first of 13 vaccination clinics in	University Faculty of Medicine, the Government of Nova Scotia posted on Twitter a short video debunking the myth, "We don't know what's in these vaccines" • As of 22 February 2021, 27,521 doses have been administered ○ From that total 11,533 are second doses • As of 16 February 2021, 11,059 first doses have been administered to healthcare workers and 7,643 have received their second dose • As of 16 February 2021, 2,268 first doses have been administered to long-term care residents and 496 have received their second dose • Dr. Strang asked that individuals who have received the vaccine to continue to follow all public health measures

	• As of 22 February 2021, 27,521 doses have been administered. From that total 11,533 are second doses • The province has 10 cold storage sites from which eight clinics across the province receive the vaccines on a rotational basis	• Mi'kmaq elders will receive their vaccinations starting the week of 1 March 2021	details about how they can book their vaccination appointment	Mi'kmaq communities across the province will open at Millbrook First Nations ○ Mi'kmaq elders will receive their vaccinations starting the week of March 1st • All First Nations clinics will be managed by the health centres located within each reserve ○ The health-centre staff will administer the vaccination • Dr. Robert Strang, Nova Scotia's Chief Medical Officer of health stated that the province is looking into different models of community-based clinics to ensure the timely delivery of the vaccine • The first prototype community clinic will take place on 22 February 2021, at the IWK Health Centre in Halifax ○ The clinic will vaccinate Nova Scotians who are 80 years of age and older who have been randomly selected by postal code that is within an hour	

				distance of the clinic site ○ 1,000 doses have been set aside for the prototype clinic • The first community-based clinic will open on 1 March 2021 at the IWK Health Centre in Halifax where individuals over the age of 80 years not living in long-term care facilities will receive their vaccination ○ Premiere Stephen McNeil announced that 10 clinics across the province will open for these seniors to get vaccinated over the next several weeks • Letters from MSI will be sent in the mail to the elderly advising them on how to schedule an appointment to be vaccinated ○ Bookings will be made available one week prior to the start of a clinic • Appointments can be booked online at novascotia.ca/vaccination or through a toll-free number which will be provided in the letter	

				○ Those who book online will receive email reminders of their appointment date closer to their scheduled vaccination • Dr. Strang asked that individuals who have received the vaccine to continue to follow all public-health measures • For individuals worried about attending large clinics the province is working with pharmacies and physician partners to run smaller clinics. ○ The start of these clinics is still unknown • When low headspace syringes are delivered to the province, special training to use the syringes will be provided to healthcare workers administering the vaccine to get the extra vaccine from the vials • The Nova Scotia College of Nursing put out a call for retired nurses to help administer COVID-19 vaccines ○ Conditional licences reinstate retired nurses to work in COVID-19 vaccination clinics, assessment clinics,	

				and assist with contact tracing and/or client follow-up	

Prince Edward Island	• As of 17 February 2021, 10,691 doses have been administered.
	  ○ From that total, 5,712 are first doses and 4,979 are second doses
	• Low headspace syringes will be delivered to the province the week of February 22nd so that the sixth dose can be drawn from the Pfizer-BioNTech vials
		• The Prince Edward Island Ministry of Health developed its COVID-19 vaccination distribution policy by identifying and prioritizing key populations
		• A three-phase plan has been put in place
		  ○ Phase one will run between December 2020 and March 2021, and will include residents and staff of long-term and community care, healthcare workers at higher risk of COVID-19 exposure, seniors 80 years of age and older, Indigenous adults, residents and staff of other residential or shared-living facilities, and truck drivers and other rotational workers
		  ○ Phase two will take place between April 2021 and June 2021 and will include anyone in priority groups remaining from phase one,
			• Information for the general public about the vaccination status, safety of the vaccine and the vaccination roll-out are provided on the Government of Prince Edward Island website
			  ○ Information sheets regarding the Pfizer-BioNTech and Moderna vaccines can be downloaded from the Prince Edward Island Government website
			• Details on who is eligible to book an appointment during each phase of the vaccine roll-out is available on the Government of Prince Edward Island website
			• A telephone number was made available to the general public to answer any health-related questions about COVID-19
				• Public-health nurses will administer the vaccine to individuals in phase one
				• In a press conference, Marion Dowling (Executive Director for Health PEI) stated that vaccine clinics will open on 22 February 2021, for Islanders 80 years of age and older not living in long-term care facilities, commercial truck drivers and rotational workers
				  ○ Clinics will be located in O'Leary, Summerside, Charlottetown and Montague
				• Homecare nurses will begin assisting with vaccinations at clinics for Islanders over the age of 80 who do not live in long-term care facilities
				• Beginning on 4 February 2021, Islanders 80 years and older not living in long-term care facilities can book an appointment to receive their vaccination
				• Starting 4 February 2021, commercial truck drivers and rotational workers
					• A telephone number was made available to the general public to answer any health-related questions about COVID-19
					• In a weekly press conference, Dr. Heather Morrison urged all citizens to download the COVID Alert App from the Government of Prince Edward Island website to help prevent outbreaks
					• Vaccination status is updated twice weekly on the Government of Prince Edward Island website

		healthcare workers not included in phase one, seniors 70 years of age and older, and essential workers ○ Phase three will take place in summer and fall 2021 and will include anyone in priority groups remaining from phase two and the general public • Residents in long-term care have received both doses and the focus now is to provide the second dose to individuals in community care by 26 February 2021		will receive phone calls from Health PEI to set up appointments to be vaccinated • On 19 January 2021, Dr. Morrison stated that the province remains on track with vaccinating frontline healthcare workers with direct exposure to COVID-19 • Pharmacists have been legislated to administer vaccines so that they can assist with mass vaccinations in future phases • Residents in long-term care have received both doses and the focus now is to provide the second dose to individuals in community care by 26 February 2021 • Community-health nurses will begin running clinics at Lennox Island First Nation at the end of February and beginning of March • Information for seniors 80 years and older to schedule their vaccination is posted on the Prince Edward Island website ○ Seniors may call a toll-free number or use	

				the online webform to submit their request and receive a phone call from public health to book their appointment • International rotational workers including commercial airline pilots and members of the military will begin to be contacted by public health to schedule a vaccination appointment ○ Individuals in this category will be contacted with age prioritizing who will be contacted first (oldest to youngest)	
Newfoundland and Labrador	• The first shipment of Pfizer-BioNTech vaccines arrived on 15 December 2020 • The first shipment of the Pfizer-BioNTech vaccine was sent to Eastern Health Hospital as it has an ultra-low temperature freezer to store the vaccine • Ultra-low freezers will be delivered to the three other hospitals so that the vaccine can be delivered • In a press conference on 9 February 2021, Chief Medical Officer Dr. Janice	• The Newfoundland and Labrador Ministry of Health developed a phased approach to administering the vaccine prioritizing specific populations ○ Phase one will include healthcare workers with high exposure to COVID-19, residents of long-term care facilities as well as long-term care staff, individuals 85 years of age and older, and individuals living in	• The COVID-19 immunization plan on the Government of Newfoundland and Labrador website provides information for the general public on the vaccines and vaccine administration and safety ○ Information sheets outlining how the Pfizer BioNtech and Moderna vaccines protect against COVID-19 are linked on the website	• The COVID-19 immunization will be run by public-health nurses • Starting January 2021, vaccinations were administered in long-term care homes and communities along the Labrador coast ○ By 8 February 2021, all residents living in long-term care facilities in St John's will have received their first dose of the vaccine	• Vaccination after-care information sheets for the Pfizer BioNtech and Moderna vaccines can be downloaded from the Government of Newfoundland and Labrador website ○ Attached to each information sheet is an immunization record to be filled out after

	Fitzgerald announced that the province is working with the federal government to secure low headspace syringes
	• In a news conference on 20 January 2021, Chief Medical Officer Dr. Janice Fitzgerald detailed the distribution of the vaccine when it arrives to the province, stating that once the shipment arrives it is immediately distributed to regional health authority depots and then to communities where public-health nurses deliver the inoculations
	• As of 17 February 2021, 16,458 doses have been administered
	  ○ From that total, 10,346 are first doses and 6,112 are second doses
		remote and/or isolated Indigenous communities
		  ○ Phase two will prioritize healthcare workers not included in phase one, residents of long-term care facilities as well as long-term care staff and essential workers
		  ○ Phase three will include the general public
		• The COVID-19 priority groups page was updated on the Government of Newfoundland and Labrador website outlining how the vaccine could be offered to individuals outside the phase one priority group in an effort to prevent wastage
		  ○ After completing immunizations in a particular area, if it is a risk to relocate the remaining doses, they will be offered to individuals in priority groups that follow phase one
		• Vaccinations are being administered at Inuit communities in Labrador
			• The COVID-19 priority groups page was updated on the Government of Newfoundland and Labrador website outlining how the vaccine could be offered to individuals outside the phase one priority group in an effort to prevent wastage
			• Vaccination after-care information sheets for the Pfizer BioNtech and Moderna vaccines can be downloaded from the Government of Newfoundland and Labrador website
				• Vaccinations are being administered at Inuit communities in Labrador
				  ○ The vaccine is being offered to anyone 17 years of age and older with priority given to healthcare workers and seniors
					receiving the vaccination
					• A question about the safety of the COVID vaccine has been added to the frequently asked questions page on the Government of Newfoundland and Labrador's COVID site.
					  ○ The website links to the Government of Canada's website providing more detail about the safety of the vaccines

		○ The vaccine is being offered to anyone 17 years of age and older with priority given to healthcare workers and seniors • An update on the priority phases was posted on the province's COVID-19 website stating that details on who is eligible for each phase will be defined clearly once more is known about the number of vaccines and doses that will be available in Phase 2			
Yukon	• On 10 December 2020, the Minister of Health announced that 50,400 doses of the vaccine will be received by March 2021 ○ 75% of the population in Yukon is expected to be vaccinated during this time period • As of 17 February 2021, 11,544 doses have been administered ○ This includes 10,627 first doses and 917 second doses • As of 28 February 2021, the Yukon is expected to receive 16,000 doses of the COVID-19 Moderna	• The Yukon COVID-19 Vaccine Strategy aims to vaccinate 75% of the adult population within the first three months of 2021 • The Government of Yukon will work closely with First Nation governments, NGOs, community leaders, and community health centres to reach all Yukoners • The flu clinic in Whitehorse will be used as a template for COVID-19 vaccine administration	• The Government of Yukon will provide accurate and updated information to Yukoners through news conferences and Yukon.ca updates ○ A public awareness campaign will also be coordinated through radio, news and social media	• The Government of Yukon's Department of Health and Social Services is the designated authority in delivering vaccines to Yukoners ○ Public and primary-care nurses, community health-centre staff, Health and Social Services' Emergency Preparedness team, Community Services' Emergency Measures Organization, Yukon Hospital Corporation staff and other personnel will be central to	• Panorama, the territory-wide electronic information system, will be used to monitor timing for a second dose, identify vaccine uptake and record adverse vaccine reactions

	vaccine by the end of February
	• Vaccines will be distributed to the Yukon and across Canada by the Immunization National Operation Centre for COVID-19
	  ○ The Government of Yukon has partnered with experts under the Joint Task Force North to plan for vaccine distribution
	• On 3 February 2021, the Government of Yukon reported delays in shipments for the vaccine
	  ○ Yukon is expected to receive 4,500 doses of the vaccine during the week of 2 February 2021, rather than the previously scheduled 7,200 doses
	  ○ The full amount of vaccines are expected to be received by 31 March 2021
	  ○ All Yukon residents are still expected to be vaccinated by April 2021
		• Priority will be given to four key populations, including:
		  ○ Staff and individuals residing in group-living settings for vulnerable groups or older adults
		  ○ Individuals working in healthcare settings and personal-support workers
		  ○ Older adults not living in group settings
		  ○ Individuals, specifically those who are Indigenous, living in rural or remote communities
		• Vaccine-distribution plans are in the process of development for individuals over age 18 who do not belong to priority groups
		• As of 27 January 2020, individuals without Yukon healthcare cards must now present another valid photo ID and one proof of residency document to receive vaccination
		• Residents of B.C. are also eligible to receive vaccinations in Yukon if they typically receive healthcare in the territory
				administering the vaccine
				• As of 27 January 2020, individuals without Yukon healthcare cards must now present another valid photo ID and one proof of residency document to receive vaccination
				• Vaccine clinics will be established at centralized locations for COVID-19 vaccine roll-out
				  ○ Approximately 14,000 Yukoners are aimed to be vaccinated in a six-week period
				  ○ Screeners and greeters will be present at all COVID-19 vaccine clinics
				  ○ Mobile clinics will be used to reach individuals in specific remote and rural communities across the Yukon
				  ○ Vaccines will be directly administered to residents in long-term care homes and to those who are homebound
				• As of 27 January 2020, there are 14 mobile clinics scheduled to visit rural and remote	

		• Starting 1 March 2021, all residents of the Yukon will be eligible to receive the COVID-19 vaccine		communities across the Yukon for vaccine administration • Mobile vaccine clinics are scheduled to visit communities for the third time to ensure that all residents have a chance to be vaccinated • As of 12 February 2021, all individuals living in long-term care homes, as well as long-term care staff, have received the full immunization ○ All home-bound people have also been fully vaccinated • As of 12 February 2021, individuals in rural communities are scheduled to receive the second vaccine dose in the upcoming weeks	

Northwest Territories	• As of 28 December 2020, Northwest Territories has received 7,200 doses of Moderna vaccine
	• As of 9 February 2021, NWT has received the third shipment of 4,700 vaccines and fourth shipments are expected during the first week of March
	• As of 15 February 2021, 13,578 first doses and 579 second doses have been
		• The Government of Northwest Territories aims to immunize 75% of eligible vaccine recipients by the first quarter of 2021
		• A phased approach will be used to administer the vaccine and priority will be given to high-risk groups including individuals who:
		  ○ Are seniors
			• Residents of Northwest Territories will be provided with updates to the vaccine strategy, evidence or recommendations through multiple plain-language materials
			  ○ An update of vaccine information and allocation in the Northwest Territories will be
				• The Government of Northwest Territories aims to work alongside Indigenous governments, local healthcare providers and community leaders to create a culturally appropriate vaccine-distribution strategy, specifically for Indigenous people, and to design vaccine clinics	• The territory will continue to use previously established monitoring and reporting systems to keep track of vaccine delivery and administration
					• All information is submitted to the Chief Public Health Officer of Northwest

	administered across all 33 communities ○ 75% of the adult population is expected to be vaccinated by March ○ As of 8 January 2021, all long-term care residents and staff across Northwest Territories have been vaccinated • As of 19 February 2021, second doses will be delivered in the next 28-42 days to NWT's priority populations • The Government of Northwest Territories will be working in joint partnership with the National Operation Centre and Joint Task Force North to plan for vaccine delivery • Central points in Northwest Territories have been established to distribute the vaccine across the territory	○ Have chronic conditions or co-morbidities ○ Reside in remote communities ○ Have a high risk of transmitting or contracting a severe case of COVID-19 ○ Are residents of Northwest Territories but work outside the territory frequently ○ Starting 28 January 2021, second vaccine doses will be administered to long-term care residents and staff across the territory • As of 19 February 2021, first doses are now available to expanded priority groups, including: ○ People 18 years or older who have one or more specified chronic condition ○ People 18 years or older who are immunosuppressed ○ People 18 years or older who have a BMI of 40 or higher ○ People older than 60 years of age	posted on a weekly basis • Local health personnel will be made available to community residents to answer questions about the vaccine before mobile-vaccine clinics arrive ○ A qualified health professional will also connect with local leadership to provide up-to-date and reliable information, as well as to answer questions • Interpreters and translators will be available to provide accessible information in Indigenous languages	that meet community needs • Mobile-vaccine clinics comprised of eight healthcare workers and support staff will be sent to all 33 communities across Northwest Territories to assist local health providers with vaccine administration ○ Mobile clinics will stay in the communities as long as needed and will return for the second dose • All healthcare personnel across Northwest Territories must complete the Education Program for Immunization Competencies (EPIC) in order to administer the Moderna vaccine • Healthcare providers are also required to participate in sessions about the historical experiences of Indigenous communities with communicable diseases, and strategies to provide culturally appropriate care • Social-distancing precautions will be implemented at all clinics	Territories before being forwarded to the Public Health Agency of Canada • The Canadian Vaccine Monitoring System will be used to share and exchange information with other jurisdictions on adverse vaccine events • As of 28 December 2020, Northwest Territories has received 7,200 doses of Moderna vaccine • As of 15 February 2021, 13,578 first doses and 579 second doses have been administered across all 33 communities

		○ People 18 years or older who are mine workers, Medevac pilots, winter road support staff, Canadian Armed Forces, taxi drivers, and isolation centre staff ○ People 18 years or older with intellectual or physical disabilities ○ People 18 years or older who are primary caregivers with a high risk for contracting COVID-19 ○ People 18 years of older travelling outside of NWT ○ People 18 years or older with approval			
Nunavut	• As of early February, 18,000 doses of the vaccine have been received • As of 14 February 2021, over 6,200 vaccines have been administered	• Priority will be given to elders 65 years or older and individuals living in shelters • 75% of the total territorial population is expected to be vaccinated by March 2021 • As of 15 February 2021, other priority groups eligible for first and second doses include those over 60 years, frontline healthcare	• The Government of Nunavut has hosted some public sessions since announcing the COVID-19 vaccine to answer questions from the public • Residents in central Nunavut who choose to get vaccinated will also be entered to win cash prizes as an avenue to encourage vaccination rates	• The Department of Health will carry out a mass-immunization program to vaccinate individuals living in Nunavut • Elders' facility clinics will be created to vaccinate seniors • In these clinics, health staff will go directly to the site to administer vaccines • Second dose vaccine clinics will be available	• Patients will be tracked after receiving their first dose of the vaccine to ensure they are notified when they will be receiving the second dose • As of early February, 18,000 doses of the vaccine have been received • As of 14 February 2021, over 6,200

		workers, first responders, medevac flight crews, group-home residents and staff, and individuals at the Akausisarvik Mental Health Treatment Centre and correctional facilities • If individuals miss their first dose and do not belong to the community scheduled to receive doses, they will be asked to wait until the next supply of vaccines is shipped to Nunavut • Individuals over the age of 18 who have missed the first dose of the vaccine must travel to Arviat for vaccination	• Public officials in Nunavut have also been outspoken in press conferences to discourage vaccine hesitancy	starting February 1st and February 8th to residents of select regions • Individuals must book an appointment with their local health centre in order to be vaccinated • Individuals over the age of 18 who have missed the first dose of the vaccine must travel to Arviat for vaccination • Individuals are required to present a Nunavut healthcare card or other valid IDs to prove residency before receiving a dose • Reminders will be sent by local healthcare centres to patients to remind them of their second dose • Individuals must receive the second dose of the COVID-19 vaccine in the same location as where they received the first dose	vaccines have been administered

Appendix 5: Documents excluded at the final stages of reviewing

Type of document	Hyperlinked title
Guidelines developed using a robust process (e.g., GRADE)	None identified
Full systematic reviews	None identified
Rapid reviews	None identified
Guidance developed using some type of evidence synthesis and/or expert opinion	None identified
Protocols for reviews that are underway	None identified
Titles/questions for reviews that are being planned	None identified
Single studies that provide additional insight	Efficacy or delivery? An online Discrete Choice Experiment to explore preferences for COVID-19 vaccines in the UK What is the extent of COVID-19 vaccine hesitancy in Bangladesh? A cross-sectional rapid national survey Effectiveness of BNT162b2 mRNA vaccine against infection and COVID-19 vaccine coverage in healthcare workers in England, multicentre prospective cohort study (the SIREN Study) Effectiveness of first dose of COVID-19 vaccines against hospital admissions in Scotland: National prospective cohort study of 5.4 million people Knowledge, attitudes and perceptions towards COVID-19 vaccinations: A cross-sectional community survey in Bangladesh Phased implementation of COVID-19 vaccination: Rapid assessment of policy adoption, reach and effectiveness to protect the most vulnerable in the US SARS-CoV-2 seropositivity after infection and antibody response to mRNA-based vaccination Assessing age-specific vaccination strategies and post-vaccination reopening policies for COVID-19 control using SEIR modeling approach Association of demographic and occupational factors with SARS-CoV-2 vaccine uptake in a multi-ethnic UK healthcare workforce: A rapid real-world analysis

Type of document	Hyperlinked title
	Optimal allocation of COVID-19 vaccines in the Philippines Mask usage, social distancing, racial, and gender correlates of COVID-19 vaccine intentions among adults in the US The global distribution of COVID-19 vaccine: The role of macro-socioeconomics measures Impact of vaccination by priority group on UK deaths, hospital admissions and intensive care admissions from COVID-19 Can a COVID-19 vaccination program guarantee the return to a pre-pandemic lifestyle? COVID-19 vaccine hesitancy in a representative working-age population in France: A survey experiment based on vaccine characteristics Using health insurance network provider data and public data sets to identify SARS-CoV-2 vaccinators in the USA Willingness of the general population to accept and pay for COVID-19 vaccination during the early stages of COVID-19 pandemic: A nationally representative survey in mainland China

Wilson MG, Bain T, Wang Q, Al-Khateeb S, Bhuiya A, Alam S, DeMaio P, Gauvin FP, Ahmad A, Drakos A, Sharma K, Whitelaw S, Lavis JN. Appendices for COVID-19 living evidence profile #1 (version 1.4): What is known about anticipated COVID-19 vaccine roll-out elements? Hamilton: McMaster Health Forum, 26 February 2021.

The COVID-19 Evidence Network to support Decision-making (COVID-END) is supported by an investment from the Government of Canada through the Canadian Institutes of Health Research (CIHR). To help Canadian decision-makers as they respond to unprecedented challenges related to the COVID-19 pandemic, COVID-END in Canada is preparing rapid evidence responses like this one. The opinions, results, and conclusions are those of the evidence-synthesis team that prepared the rapid response, and are independent of the Government of Canada and CIHR. No endorsement by the Government of Canada or CIHR is intended or should be inferred.

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