

Priority-setting for early access to COVID-19 vaccines: a report from the Islamic Republic of Iran

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Abstract

Background: Priority-setting for early access to pandemic vaccines optimizes the impact of vaccine roll-out. However, low- and middle-income countries (LMICs) have little experience in policy-making on priority-setting for pandemic vaccines. In the Islamic Republic of Iran, the National Clinical Ethics Committee developed a policy for early access to COVID-19 vaccines with support from the national committee on the COVID-19 vaccine.

Aims: This study reports the process and results of national COVID-19 vaccine priority-setting, and discusses its ethical and cultural aspects.

Methods: A multidisciplinary team of experts planned and developed a national guideline through an extensive literature review and face-to-face consensus meetings.

Results: We present the list of priority groups and subgroups, tiered through a 4-phase process, and the ethical values and sociocultural issues underpinning COVID-19 vaccine prioritization in the Islamic Republic of Iran.

Conclusions: Our experience shows that a transparent and well-reasoned policy-making process can inform fair priority-setting for pandemic vaccines, especially in LMICs.

Keywords: priority-setting, fair vaccine allocation, COVID-19 vaccine prioritization, health policy ethics

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Introduction

The recent COVID-19 outbreak has negatively changed the world and caused great harm, including direct damage to global health, with 534 439 577 confirmed cases and 6 307 218 confirmed deaths worldwide up to 10 June 2022 (1); indirect harm caused by a diminished health care delivery service to patients with noncommunicable diseases (2); negative consequences for the mental health of the world population overall (3); and devastating economic losses in low-, middle- and even high-income countries (4,5). The Islamic Republic of Iran documented a surge of COVID-19 cases shortly after the official announcement of the first deaths from SARS-CoV-2 on 19 February, and up to 10 June 2022, 7 233 472 confirmed COVID-19 cases and 141 343 deaths have been reported (1).

Vaccination is essential to mitigate the harms caused by infectious disease outbreaks, and priority-setting for access to vaccines optimizes the impact of vaccine roll-out (6). Inequitable capacity to access safe and effective vaccination demands fairness and justice-driven debate around priority-setting for access (7). Prioritization of the SARS-CoV-2 vaccine was also essential and challenging because supplies were predicted to be critically low in the early phase of vaccine release.

Priority-setting involves processes to decide on the allocation of resources among competing programmes or people (8). There is an increasing demand for explicit, evidence-based prioritization (8) as this can help policy-makers better accept their responsibility by increasing public awareness vis-à-vis health care decision-making (9).

Hence, in the middle of the COVID-19 pandemic, when the vaccine manufacturers were fighting hard to deliver their first batches, the Strategic Advisory Group of Experts on Immunization of the World Health Organization (WHO) guided countries toward vaccination programmes based on transparent and fair prioritization plans. The WHO provided ethical guidance by publishing a values framework for prioritizing access to the COVID-19 vaccine (10), underpinning a subsequent prioritization roadmap (6). Leaders in the fields of health ethics and policy-making also made several consecutive efforts to guide vaccine allocation policies ethically. For example, in the United States of America, in August 2020, the Center for Health Security at Johns Hopkins University published an interim framework for COVID-19 vaccine allocation (11). In September 2020, the Advisory Committee on Immunization Practices proposed 5 ethical principles for distributing the vaccine (12). In October 2020, the final report of a robust study on COVID-19 vaccine allocation by The National Academies of Sciences, Engineering, and Medicine was published (13).

The abovementioned documents exemplified a rich body of bioethical academic reflection on pandemic vaccine priority-setting in developed countries. Less attention has been paid to addressing the practical application of the proposed frameworks across low- and middle-income countries (LMICs) (14). Although LMICs have little experience in policy-making on priority-setting in general, and for pandemic vaccines in particular (15), research shows that in these countries, priority-setting is commonly based on disorganized reasoning, which arises through ad-hoc or implicit processes and lacks reliable evidence, leading to low efficacy health policy-making (15). Indeed, countries in the Middle East are vulnerable to pandemics because of their specific cultural, political and economic context (16).

The Iranian National Clinical Ethics Committee has been established as a policy-making, supervisory and decision-making body in the Ministry of Health and Medical Education since 2018. It is responsible for developing national guidelines in clinical and public health ethics. With support from the national committee on the COVID-19 vaccine, the National Clinical Ethics Committee developed a guideline for early access to COVID-19 vaccines. This study

reports the process and results of the collaborative efforts of the National Clinical Ethics Committee and the National Immunization Technical Advisory Group, known as the COVID-19 Vaccine Technical Committee, to determine priority groups for access to the COVID-19 vaccine, and discusses the cultural aspects of policy-making on vaccine prioritization in the Islamic Republic of Iran.

Methods

Planning

The secretariat of the National Clinical Ethics Committee developed a planning proposal which was then approved by the Committee itself. The proposal defined the scope of the guideline, including its overall purposes, target users, necessary implementation activities, main outcomes, resources and timing (see Figure 1). Accordingly, in November 2020 a working group was formed composed of experts in public health, epidemiology, patient rights and medical ethics along with medical professionals involved in managing the response to the COVID-19 pandemic (Table 1). All invited experts declared that they had no conflict of interests regarding the subject of the guideline and its publication.

Guideline development process

Review of existing guidelines and priority lists of countries

We conducted 2 nonsystematic literature reviews in November and December 2020 to answer the review questions below.

- Which ethical principles and values play a role in early pandemic vaccine allocation and how do they manifest this?
- What are the priorities for access to COVID-19 vaccine in different countries?

The key search terms were “vaccine prioritization”, “vaccine allocation” and “vaccination ethics”. We searched the MEDLINE database via PubMed and Google Scholar for articles published between January 2019 and 31 December 2020. Key bioethics databases and recently developed guidelines for COVID-19 vaccine allocation were also hand searched. In addition, we manually included COVID-19 vaccine priority lists of countries and institutes from national and international websites. No geographical limitations were applied, however, we limited the search languages to English and French.

Articles were included if they contained the primary search terms “vaccine”, “allocation” and “prioritization”. A total of 217 records were identified, and after removing duplicates, editorials and commentary articles, and articles discussing global vaccine allocation or mathematical and computer simulation models, 14 papers and 10 guidelines were included for review.

Generation of a comparative list of priority groups and subgroups

We generated a comparative list of priority groups and subgroups by organizing the data extracted from the literature review into a table in which the rows represented the priority population groups and subgroups, the columns represented each country or guideline, and the cell entries specified the rank of that population group or subgroup in the priority list for different countries or guidelines (Table 2).

Development of value framework, identification of prioritization objectives and drafting the guideline

By conducting review sessions and through reflection and prudent debate about the existing literature on ethics and vaccine allocation during pandemics, we sketched out a value framework for prioritizing the COVID-19 vaccine (Table 3). We proposed a preliminary priority list according to the average rank of each population group on the comparative list (Table 2) and the value framework. The value framework and the priority list were sent electronically to 2 qualified external experts for peer review and impartial evaluation and revised accordingly, which yielded a first draft of the guideline.

Developing consensus

Given the time-sensitive nature of the guideline, we employed a face-to-face consensus meeting. The panel included the expert members of the National Immunization Technical Advisory Group (Table 1) and the lead author (SGE), an expert in medical ethics.

To shorten consensus-making timeframes, the lead author (SGE) circulated the draft to all members, gathered and qualitatively analysed the comments, and prepared a summary report. After that, all priority groups were openly discussed in several meetings at the Ministry of Health and Medical Education and a consensus of > 70% was achieved for all priorities.

Review and approval

The National Vaccine Committee approved the prioritization list. Subsequently, a joint meeting of the Supreme Council of Medical Ethics (the highest bioethics body in the country, a part of the policy approval framework in the Ministry of Health and Medical Education) and the National Clinical Ethics Committee recognized the guideline in line with the Iranian constitution and upstream laws, and issued the final approval for the Ministry of Health and Medical Education.

National endorsement and dissemination

On 10 January 2021, the National Headquarters for COVID-19 Control, the first body established in the Presidential Institution to manage the response to COVID-19, endorsed the guideline officially and released it to local media as Chapter 4 of the “COVID-19 National Deployment and Vaccination Plan”.

Results

The expert groups involved in the various decision-making stages represented a diverse range of expertise, ages, sexes and academic roles. For details of the groups, see Table 1.

The 2 fundamental values of maximizing benefit and justice and the 2 operational concepts of utility and equity were recognized as culturally appropriate to ethically guide the prioritization of access to the COVID-19 vaccine (Table 3). The guideline recommended a 4-phase process for vaccine allocation; each phase was split into subphases, including tiered population groups (Table 4).

Discussion

Overview

This study describes the deliberative process that resulted in the urgent development of an ethical guideline for prioritizing access to COVID-19 vaccines in the Islamic Republic of Iran between November 2020 and January 2021. Here we discuss the cultural aspects which informed our decision-making.

Starting vaccine roll-out with health care workers: truthful risk communication and maintaining public trust

The value “maximizing benefits and minimizing harms” is central to public health policy-making. The objective is to determine which policy is the best to protect people from hospitalization and death because of COVID-19, and implies that older adults, who bear the highest rate of hospitalization and death (17), have priority to vaccine access. However, we recommended prioritizing front-line health care workers over those individuals at a very high risk of getting sick and dying from COVID-19 in the first phase. This decision is in agreement with the WHO (6) and National Academies of Sciences, Engineering, and Medicine guidelines (13), but is at variance with the Advisory Committee on Immunization Practices report, which places both health care workers and elderly residents in long-time care facilities in the first phase, without assigning rank (18).

Besides the ethical justifications commonly buoying the placing of health care workers as the top priority for vaccination, our decision was based on trust and the imperative to increase public confidence in the COVID-19 vaccine.

Trustworthiness is a virtue, and building a climate of trust is vital for the health care setting (19). People demand trust through the honest and transparent communication from governments in response to the COVID-19 pandemic (20). Vaccine confidence has been a challenging issue for a long time, and is closely related to public trust in the broader health care system (21). Although the COVID-19 vaccines have been proved safe and efficient by scientific evidence, the issue of building trust constitutes an essential aspect of COVID-19 vaccine uptake due to the expediency of the vaccine development and the emergency use authorization by the Food and Drug Administration in various drug regulatory systems around the world (22).

Nevertheless, there are specific issues that may impinge on public trust in COVID-19 vaccines in the Islamic Republic of Iran. First, the younger and healthier population of health care workers was given priority because there was great uncertainty about which vaccines would be available in the early stages and the side-effects and safety of the available vaccines. Second, mortality rates are typically higher in frail elderly persons and those with severe underlying conditions than in health care workers. For example, in the first month of the COVID-19 vaccine roll-out, 113 deaths were reported after vaccination, of which 78

(65%) occurred among residents of long-term care facilities without any detected causal relationship (23).

Given that vaccine confidence depends on the perceived risk of the vaccine causing harm rather than benefit (24), the risk of people attributing nonrelated deaths to vaccines in the early stages of vaccine roll-out is serious. In addition, it was more feasible to assess the follow-up and monitoring of adverse vaccine events in the health care workers group.

Prioritizing individuals aged over 65 years over those with high-risk comorbidities: utility and fairness considerations

Deciding between prioritizing individuals aged over 65 years and those with high-risk comorbidities was challenging as both population groups have been shown to be at higher risk for COVID-19 hospitalization and death in Iran than in other countries (25,26). However, the current guideline assigned vaccine priority to individuals over 65 years. This agrees with the recommendations of the Advisory Committee on Immunization Practices and the WHO guideline. However, in the National Academies of Sciences, Engineering, and Medicine guideline, population groups with underlying problems predominate over age groups.

The first justification was the higher case fatality and hospitalization rates resulting from from the SARS-CoV-2-virus in populations aged over 65–70 years than in any other population (27–29). According to official reports, 70% of Iranian COVID-related deaths occurred in people over 60 years (30). Epidemiological studies also showed that those aged 65+ years had the highest cumulative risk of death among hospitalized patients with confirmed COVID-19 and that among patients with comorbidities or a high body mass index, there was a greater risk of mortality and hospitalization than among the normal population (31,32).

Second, aging is associated with a higher prevalence of comorbidities. Comorbid conditions are more common (33,34) and more severe (35) in adults over 65 years. Therefore, prioritizing the older age groups also addresses several COVID-19 risk factors, including hypertension, diabetes and cardiovascular disease (35,36).

Third, there is the greater feasibility of providing fair access to all members of an eligible group. Although the infrastructure of the Iranian health care system is adequate, considering

the nature of the risk factors and the vast geographical area of the country, it cannot afford equal recalling of all eligible individuals in all the aforementioned COVID-19 risk groups.

Finally, there is a normative justification to prevent encouraging people to commit fraud, such as fabricating a medical record document indicating their comorbid condition.

Including marginalized populations and those who may experience discrimination due to unequal power relationships in the priority list: equity considerations

To avoid discrimination, we explicitly included all eligible population subgroups, and addressed individuals at higher risk of inequitable distribution of vaccines due to unequal power relationships such as medical students and funeral staff in cemeteries, and marginalized populations like prisoners and immigrants. The Islamic Republic of Iran has been host to nearly 3 million Afghan refugees over 4 decades (37). Afghans are more prone to social inequalities, leading to a higher risk of infectious diseases (38). Unregistered migrant populations are also assigned priority despite the logistic difficulties.

Responsiveness for silent guideline situations: accountability considerations

There are instances when the guideline is silent about which subpopulation in a priority group has priority to access the vaccines and how to fairly distribute vaccines in a subpopulation. Accountable policy-making for pandemic vaccine roll-out should include clearly defined roles and responsibilities for these situations.

We recommended involving regional (or university) and local (or hospital) clinical ethics committees to further prioritize vaccine access at the centres within their regions or among the staff at their centres by using the ethical framework of our guideline. It might be regarded as an innovation in that our study predicted the severe shortages that occurred during the early months of the vaccine roll-out due to the low pace of the vaccine supply chain in the Islamic Republic of Iran. The experts decided not to wait for enough vaccines to completely immunize all eligible individuals within a hospital or a health care centre, and distributed the available doses as early and evenly as possible among a population tier. So, it was predicted that a tiny number of vaccines would be delivered to hospitals at each stage; for example, less than 10 shots might be delivered to the staff of a small hospital located in areas far from the provincial capitals. Hence, it suggested that hospital ethics committee prioritize between members of an eligible population group in such situations.

Feasibility considerations

The primary health care facility network in the Islamic Republic of Iran has become highly organized (39) and accessible, especially among rural populations (40). An online registration system established for COVID-19 vaccination by the Ministry of Health and Medical Education may increase the feasibility of the guideline. Also, the registration of all patients suffering from chronic disease (e.g. chronic renal failure, diabetes) in a nongovernmental foundation that organizes and promotes care delivery facilitates the implementation of Phase 2 of the recommended vaccination programme.

Study limitations

The most important limitation of this study was the lack of sufficient public engagement in the decision-making process due to time pressures. However, the director of a national nongovernmental organization, Patients' Rights Watch, was present for the approval process as an National Clinical Ethics Committee member. He also aided in the effort to gauge public opinion informally by providing feedback and comments from the board of trustees of that organization. Besides, the comments of the clergy, lawyers, and nonmedical experts in the various decision-making stages made possible indirect, timely and informed communication with people from diverse backgrounds.

Despite low public participation in the guideline development, the feedback obtained from lay and society professionals after its publication and dissemination underlines the acceptability and legitimacy of the document. The guideline developed and disseminated as the "National Document" usually appears to be the reference document for resolving conflicts about the priority population, and deviations from it are addressed. In one example, the Medical Council suggested prioritizing artists for having access to vaccines, a suggestion which faced solid public reaction citing the national prioritization plan. However, to promote fairness and participation in the same guidelines in future pandemic planning, much more effort must be made to collect public opinion and involve stakeholders.

Conclusions

The need for public health decision-making based on scientific evidence, ethical principles (13) and sociocultural issues (41) is widely acknowledged. Our experience showed the administrative possibility and public acceptability of implementing explicit and value-based

priority-setting in a developing country. Further evaluation of the reported process and outcome may improve decision-making practices on resource allocation. In conclusion, we can recommend further research aimed at assessing the application of this guideline, both qualitative research for documenting the experiences of stakeholders and quantitative analysis exploring the compatibility of the allocation of vaccines with the proposed allocation guideline.

Another conclusion of this work was the successful approach to ethics experts as the “ethicist as an insider”. Cooperation between a professional ethicist and experts from the National Immunization Technical Advisory Group could inform a constructive integration of the National Clinical Ethics Committee with the policy-making bodies of the health care system.

The most critical shortcomings of the proposed priority-setting policy were the failure to include medical risks and the low participation of the public. Our experience showed that striving to ensure greater communication with and involvement of people in health governance processes increases the legitimacy of public health interventions.

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Competing interests: At the time of the study, Fatemeh Bahmani was a member of the National Clinical Ethics Committee; Alireza Parsapour was secretary of the Supreme Council of Medical Ethics and the National Clinical Ethics Committee; Nasrin Abbasi was the technical officer at the National Clinical Ethics Committee secretariat; Seyyed Mohsen Zahraee was the director of the vaccine-preventable diseases department in the Center for Communicable Disease Control, and a member of the National Committee on the COVID-19 VACCINE and the National Immunization Technical Advisory Group; Nader Tavakkoli was deputy clinical head of the Tehran Coronavirus Taskforce; Ehsan Shamsi-Gooshki was secretary of the National Committee for Ethics in Biomedical Research, Member of the National Clinical Ethics Committee, National Immunization Technical Advisory Group and National Committee on the COVID-19 vaccine.

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Figure 1. The process of policy-making and development for the Iranian COVID-19 vaccine prioritization guideline, 2021 (NCEC = National Clinical Ethics Committee; CDC = Center for Communicable Disease Control)

Table 1. Composition of the working group involved in drawing up and reviewing the 2021 guideline for vaccine prioritization in the Islamic Republic of Iran

Aspect	Planning (NCEC Secretariat) (n = 5)	Literature review & development of value framework (NCEC working group) (n = 6)	Consensus making (National Immunization Technical Advisory Group) (n = 16)	Review & approval	
	No. (%)	No. (%)	No. (%)	NCEC (n = 14) No. (%)	Supreme Council for Medical Ethics (n = 22) No. (%)
<i>Sex</i>					
Male	2 (40.0)	5 (83.3)	14 (87.5)	10 (71.4)	20 (90.9)
Female	3 (60.0)	1 (16.6)	2 (12.5)	4 (28.5)	2 (9.1)
<i>Age (years)</i>					
31–40	1 (20.0)	1 (16.6)	5 (31.3)	1 (7.1)	0 (0.0)
41–50	2 (40.0)	3 (50.0)	5 (31.3)	5 (35.7)	1 (4.5)
51–60	2 (40.0)	2 (33.3)	6 (37.5)	8 (57.1)	12 (54.5)
>60	0 (0.0)	0 (0.0)		0 (0.0)	9 (40.9)
<i>Field of expertise</i>					
Basic science	0 (0.0)	0 (0.0)	5 (31.3)	0 (0.0)	3 (13.6)
Public health	0 (0.0)	1 (16.6)	2 (12.5)	0 (0.0)	3 (13.6)
Medical ethics	3 (60.0)	3 (50.0)	1 (6.3)	3 (21.4)	0 (0.0)
Medical specialty	1 (20.0)	2 (33.3)	8 (50.0)	6 (42.8)	7 (31.8)
Nursing	1 (20.0)	0 (0.0)	0 (0.0)	3 (21.4)	1 (4.5)
Miscellaneous	0 (0.0)	0 (0.0)	0 (0.0)	2 (14.2)	7 (31.8)
<i>Current role</i>					
Professor	0 (0.0)	1 (16.6)	8 (50.0)	2 (14.2)	11 (5.0)
Associate professor	0 (0.0)	2 (33.3)	5 (31.3)	3 (21.4)	2 (9.1)
Assistant professor	3 (60.0)	3 (50.0)	2 (12.5)	5 (35.7)	0 (0.0)
PhD candidate	1 (20.0)	0 (0.0)	1 (6.3)	1 (7.1)	0 (0.0)
Non-academic	1 (20.0)	0 (0.0)	0 (0.0)	3 (21.4)	9 (40.9)
<i>Education</i>					
PhD	1 (20.0)	1 (16.6)	4 (25.0)	4 (28.5)	6 (27.2)
MD-PhD	3 (60.0)	3 (50.0)	3 (18.8)	3 (21.4)	4 (18.1)
MD	1 (20.0)	2 (33.3)	8 (50.0)	6 (42.8)	11 (50)
PharmD	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
PharmD-PhD	0 (0.0)	0 (0.0)	1 (6.3)	0 (0.0)	0 (0.0)
MSc	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.1)	1 (4.5)
<i>Years working in the field</i>					
< 10	1 (20)	1 (16.6)	0 (0)	1 (7.1)	0 (0)
10–19	2 (40)	3 (50)	4 (25)	4 (28.5)	4 (18.1)
20–29	1 (20)	2 (33.3)	6 (37.5)	8 (57.1)	7 (31.8)
> 30	1 (20)	0 (0)	6 (37.5)	1 (7.1)	11 (50)

NCEC = National Clinical Ethics Committee.

Table 2. Comparative list of COVID-19 vaccine priority groups and subgroups in accordance with prioritization in the country or guideline reviewed

Main priority group and priority subgroup	Australia	UK	Canada	USA ^a	India	France	Japan	Turkey	Singapore	WHO
<i>High risk health care workers</i>										
Health care practitioner	2									
Technical staff	2									
Nursing homes or home care providers	2									
Emergency services providers	3									
Pharmacists & staff	2	2								1-A
Dentists & staff	2									
Public health staff	3		1-E	1-A	1	1-A	2	1	2	
Disability care workers	2									
Quarantine workers	3									
Aged care workers	2	1								
Health workers engaged in immunization delivery	3	2								2-D
Personnel needed for vaccine production and other high-risk laboratory staff.	3									3-E
<i>Low risk health care workers</i>										
HCWs not included in high risk groups	2	NCY	1-E	4	NCY	NCY	NCY	NCY	NCY	3-D
<i>Age group (years)</i>										
Aged people in congregate settings	NS	1	1-A	1B	NS	NS	NS	NCY ^b	NS	NS ^b
≥ 80	1	2	1-B	2			1		1	1-B
75–79	1	3	1-C	2						
70–74	1	4	1-D	2	3	2				
65–69		5		2						
60–64	NCY	8	NCY	4		NCY	NCY	4	NCY	2-A

55–59		9		4							
50–54		10		4							
30–49				4							
18–30 (young adults)				3 ^c							
Children (preschool, elementary, middle & high school)		NCY		3	NCY			NCY		NCY	
Children prior to preschool				4							
<i>High risk due to medical conditions</i>											
Significant (2 or more)	1	6		1B							
Moderate	1	7	NCY	2	4	2	1	NCY	1	2-B	
Pregnant women	NCY			NCY ^d							
<i>High risk due to non-medical conditions</i>											
Indigenous communities	1		1-F	NS							
Homeless shelter			2-B	2							
People in detention & correction centres			2-B	2							
People in migrant centres	NCY	NCY	2-B	2	NCY	NCY	NCY	NCY	NCY	2-C	
People in disability care homes			2-B	2							
People in group homes			2-B	2							
<i>Essential services personnel</i>											
Defence forces				2	3			2			
Food production and store workers				2							
Water officers				2							
Electricity officers	3			2	2						
Telecommunications officers				2							
Gas officers		NCY	2-C ^e	2		1-B	NCY	NCY	3-A	3-B	
Police				1-A ^f	3						
Funeral directors				1-A							
Firefighters				1-A ^f							
Postal services	NS			2	NCY						
Delivery workers				2							

Passenger vehicle drivers				2							
Construction workers				2							
Public transport workers				2							
<i>Workers with high potential for transmission</i>											
Group residential care workers	2	NCY	2-B	2							
Disability care workers	2			2							
Correctional and detention facilities	2			2							
Meat processing workers (indoor areas which are cold and damp)	2		NS	2	NCY	1-B	NCY	3	3-B	3-F	
Quarters for migrant workers,	NCY		2-B	2							
Homeless shelter workers	NCY			2							
Teachers, school staff & child care workers	NCY	NCY	NCY	2	NCY	NCY	NCY	NCY	NCY	2-E & 3-A	

HCW = health care worker.

NCY = not confirmed yet.

NS = not specified.

^aNational Academies of Sciences, Engineering, and Medicine.

^bAge-based risk specific to country/region.

^cGroup recognized as main asymptomatic and pre-symptomatic virus spreaders.

^dSafety concerns.

^eFull details at: <https://www.publicsafety.gc.ca/cnt/ntnl-scrtr/crtcl-nfrstrctr/esf-sfe-en.aspx>.

^fGroups recognized as first responders.

Table 3. Ethical values, principles and objectives underpinning COVID-19 vaccine prioritization

Moral value	Ethical principle	Objective	Phase
Maximizing benefit and minimizing harms	Utility	Prevention of death and severe illness related to COVID-19	1 & 2
		Prevention of illness and death not related to COVID-19	1 & 2
		Maintenance of the essential functions of society	3
Justice	Equity	Reduction of health inequalities associated with COVID-19	2 3
	Equal respect	Reduction of social inequalities associated with COVID 19	All phases and tiers
	Reciprocity	Protection of groups who have borne significant risk to save others	1

Table 4. Final list of priority groups for peer review and impartial evaluation

Phase 1
Frontline health care workers
The staff of the hospitals admitting COVID-19 patients, including the diagnosis, therapeutic, administrative, security and finance personnel
Medical emergency services providers
Funeral staff in cemeteries
The staff of laboratories that are members of the COVID-19 diagnostic laboratory network
The staff of clinics and outpatient centres involved in screening COVID-19 patients
Health workers engaged in COVID-19 vaccine delivery
The staff of COVID-19 outpatient clinics
The staff of urban and urban–rural community health centres providing care to COVID-19 patients
The staff of outpatient clinics in urban areas providing care to COVID-19 patients
The staff of home health care services providing care to COVID-19 patients
The staff of active medical offices providing care to COVID-19 patients
The staff of active offices of infectious disease specialists
The staff of active offices of internists and pulmonologists
The staff of active offices of general practitioners
The staff of active offices of paediatricians
The staff of active dental offices
The staff of radiology centres and other laboratories involved in the diagnosis of COVID-19
Pharmacy staff
The staff of rural primary health care centres
Employees of medical universities and the Ministry of Health and Medical Education who attend frontline response to the pandemic. The Clinical Ethics Committee must approve eligible individuals in each province of the relevant university, and decisions about the eligible staff of the Ministry of Health and Medical Education are the responsibility of the National Clinical Ethics Committee
Individuals living in long-term care facilities who are at a very high risk of hospitalization and death due to COVID-19
Aged people living in nursing homes and the staff
Disabled veterans living in nursing homes and the staff
Mentally or physically disabled individuals living in nursing homes and the staff
Severely disabled veterans and chemical weapons victims of the Iran–Iraq war
Phase 2
People aged ≥ 65 years
People aged ≥ 80 years
People aged 75–79 years
People aged 70–74 years
People aged 65–69 years
People aged 16–64 years with underlying medical conditions and at high risk of severe COVID-19 infection
Phase 3
People living in congregate settings
People living in prisons and correction centres
People living in mandatory military training centres and law enforcement bodies
People living in orphanages and foster care centres and the staff

People in homeless shelters and the staff
Immigrants living in refugee camps and the staff
People in addiction treatment centres and the staff
Essential service personnel
Health care workers not included in Phase 1
Bank personnel
Law enforcement personnel
Public transport workers including passenger vehicle drivers and railway and air transport personnel
Fuel production and distribution personnel
Food production and store workers
Essential critical infrastructure personnel (gas, electricity, water and communications)
Teachers and school staff
Child care workers
People aged 55–64 years
Phase 4
People not included in Phases 1–3