WESTERN SYDNEY UNIVERSITY

Humanitarian and Development Research Initiative

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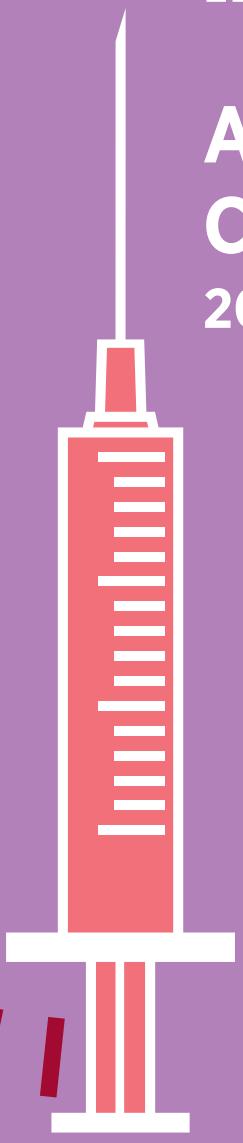
CHALLENGING COVID-19 "INFODEMIC":

A Six-Country Comparison

2021

COVID-19



Sabrina Baron and Narayan Adhikari

in collaboration with staff at Accountability Lab offices in Nepal, Pakistan, Liberia and South Africa

and the

Humanitarian and Development Research Initiative (HADRI), Western Sydney University, Australia

ABSTRACT

This report presents a six-country analysis of COVID-19 vaccines and vaccination programs, considered against the problem of 'infodemic' – the mis-information and disinformation surrounding COVID-19 vaccines that promotes vaccine hesitancy and suspicion propagated by individuals, groups and sometimes even by government officials. The report first outlines the types of COVID-19 vaccines that have been developed, and presents a timeline of the global evolution of the pandemic and the response. It then presents the responses to pandemic and the measures taken to advance the goal of vaccination and to counter infodemic in six countries: Nepal, Australia, the United States, Liberia, Pakistan and South Africa. We conclude by noting that infodemic represents a danger to public health, especially when coupled with digital media such as smart phones. In this context we argue civil society organisations and governments have a duty to act and report responsibly, and to use accurate information, to challenge false claims around COVID-19.

ACKNOWLEDGEMENTS

This report began as a project by a student in Western Sydney University's Social Sciences Internship Placement (SSIP) who was working with Accountability Lab Nepal during 2021.

Sabrina Baron worked closely with the Country Director of Accountability Lab Nepal, Narayan Adhikari, on this report, which also includes contributions from Accountability Lab offices in Liberia, Pakistan and South Africa.

The report was peer reviewed by an anonymous HADRI researcher, who provided editorial suggestions prior to publication. In its focus on the COVID pandemic it supplements two previous multi-authored HADRI reports; *State Responses to COVID 19: A Global Snapshot at 1 June 2020* (Georgeou and Hawksley, 2020), and *COVID-19 Impacts of Immigration Detention: Global Responses* (Chew et al. 2020).

The authors, Sabrina and Narayan, would like to thank all those involved in the report and who provided country-specific research, support and collaboration: Soni Khanal and Prekkshya Bimali of Accountability Lab Nepal; W. Lawrence Yealue II (Country Director) of Accountability Lab Liberia; Sekoetlane Phamodi (Country Director) of Accountability Lab South Africa; and Fayyaz Yaseen (Country Director), and Ali Yaseen Khan of Accountability Lab Pakistan. The authors also would like to thank HADRI Director Associate Professor Nichole Georgeou and the anonymous HADRI reviewer for their guidance and support throughout the entire process.

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Preface

The School of Social Sciences (SoSS) is delighted to support the publication of this report as it is a product of two important aspects of the School's international agenda; meaningful student placements and research excellence.

SoSS has developed an international workplace immersion experience that is unique in Australia. The Social Sciences International Placement (SSIP) offers undergraduate students the opportunity to travel and work with our internship partners overseas. SSIP comprises three subjects: preparation for placement; a three-month placement; and post-placement reflections. SSIP has been developed to contribute to host organisations, in tangible, realistic and sustainable ways, and to provide students with a 'real world' work experience in which they can apply their skills and improve their employment prospects. SoSS currently runs SSIP in partnership with Kathmandu University and with non-government organisations in Nepal. SoSS is planning to expand the program to include other partners countries in the Asia Pacific.

This Report presents a multi-country analysis of COVID 19 vaccine programs and the management of 'infodemic'. It is the product of a SSIP student, Sabrina Baron, undertaking a Bachelor of Anthropology who was placed with Accountability Lab Nepal. Due to the COVID pandemic and closed borders Sabrina was not able to travel to Nepal, so worked with the staff of Accountability Lab Nepal online, collaborating with the in-country Director, Narayan Adhikari and other staff to research the issue of infodemic. The innovation of the online international internship was developed in SoSS by Associate Dean International, Associate Professor Nichole Georgeou, who is also the Director of the Humanitarian and Research Development Initiative (HADRI).

SoSS has been placing students with Accountability Lab Nepal since 2018. We look forward to continuing to place students who can contribute to its work, and who can learn from the work being undertaken by that organisation. SSIP represents an example of ethical partnerships that Western helps build to have genuine research impact in the Asia Pacific region and beyond. These respectful, mutually beneficial relationships are enduring, and this important and comprehensive report is a product of one such relationship.

PROFESSOR BRIAN STOUT
Dean, School of Social Sciences
Western Sydney University

COVID vaccination, Dhulikhel, Nepal

Returned migrant workers, Nepal

About HADRI

Western Sydney University's Humanitarian and Development Research Initiative (HADRI) has been established with a globally unique approach to pursue research that highlights the complexity of international responses to conflicts and disasters, and the intersections between the multidimensional health, socio-economic and political aspects of complex emergencies.

HADRI aims to conduct research that:

1. Bridges the academic and practice aspects of humanitarian response, rehabilitation and development.
2. Informs policy decisions of government, international organisations, academics and stakeholders.
3. Ensures synergies, innovation and knowledge sharing and translation through collaboration with HADRI's global partners, and engagement with WSU's undergraduate and postgraduate degrees in Humanitarian and Development Studies (HADS).

HADRI research focuses on the intersections between disaster relief and social and economic development. We explore the practices of government and non-government agencies involved in humanitarian operations, and their development practice. HADRI research addresses the challenges and opportunities associated with disaster preparedness, response and management; public health programs for displaced populations; building the resilience of vulnerable populations; and public health concerns surrounding national and international migration.

HADRI has three intersecting research themes:

→ Disaster Preparedness, Response and Management
→ Migration, Global Health and Development
→ Sustainable Development and Human Security

HADRI's major research activities across these themes focus on:

Human rights and the Responsibility to Protect (RtoP);

→ Food security, food systems and linkages to public health and nutrition;
→ Migration, social disadvantage and migrant community well-being;
→ Political economy of conflict;
→ Livelihoods, employment and human development;
→ Disaster and critical incident perception and preparedness;
→ Occupational risk and resilience among humanitarian practitioners;
→ Water, Sanitation, and Hygiene (WASH).

About Accountability Lab

Founded in early 2012, Accountability Lab is a global trans-local network that makes governance work for people by supporting active citizens, responsible leaders and accountable institutions. Our goal is a world in which resources are used wisely, decisions benefit everyone fairly, and people lead secure lives. Accountability Lab is finding new ways to shift societal norms, solve intractable challenges and build "unlikely networks" for change.

REPORT AUTHORS

NARAYAN ADHIKARI
Director
Accountability Lab, Nepal

SABRINA BARON
Student in the Bachelor of Anthropology Degree
Sub-major Criminology and Criminal Justice
Western Sydney University

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Challenging COVID-19 "Infodemic": a six-country comparison

Since the onset of the SARS-CoV-2 (COVID-19) pandemic, states and health professionals have been working tirelessly to combat its effects. Due to COVID-19 being a new virus and the world knowing little about it, the initial response was to contain its transmission, and to treat and manage the infected. Nationwide lockdowns, border closures, physical distancing, and public health orders such as wearing face masks and constant hand washing were swiftly adopted and implemented worldwide in order to limit transmission. In conjunction with public health orders, manufacturing, acquiring, and administering vaccines has become a global necessity. Nearly two years into the outbreak, multiple vaccines have been developed, and states have implemented COVID-19 vaccination programs. The world is learning to live with COVID-19, but it will not be 'back to normal' quickly, as quite a few things have changed.

The COVID-19 pandemic has forced us to reflect on ourselves, our values, norms, our health systems, and our systems of governance. The protection of citizens, their welfare and prosperity are the prime responsibilities of the government. With the unprecedented situation over the last 18 months, the pandemic has been a profound test of effective and accountable government. Many governments have been implementing policies and measures to help protect their citizens from COVID-19, ensuring their people are protected and given all the resources necessary to combat the virus. Some governments, organisations and members of the general public have however disseminated factually incorrect information – misinformation that has had harmful and detrimental effects on people, both physically and mentally. Such misinformation can increase stigmatisation of groups marked as spreading COVID-19, which paradoxically includes health care workers caring for people with COVID, as well as vulnerable populations blamed (without evidence) for spreading COVID-19. Misinformation can also influence other people to resist complying with public health orders.

THE RISE OF 'INFODEMIC'

Throughout the pandemic, some political leaders downplayed the virus, questioned the efficacy of protective equipment, and praised unproven treatments (WHO et al. 2020). The term "Infodemic" refers to the abundance of online and offline information that deliberately attempts to disseminate disinformation to challenge public health responses while advancing alternative agendas. Organisations such as the World Health Organization (WHO) have stepped in to provide truthful, accurate, and scientific information for the world, an effort supported by Accountability Lab.

In a fast-advancing digital world, challenging infodemic is necessary to ensure that people can make informed decisions based on accurate information. The COVID-19 pandemic has shown the significant impact of this new information environment, as information greatly influences people's behaviours and attitudes, and significantly alters and challenges the effectiveness of health measures deployed by governments and organisations such as the WHO (Cinelli et al. 2020: 1). During the 2020 Munich Security Conference, the WHO Director-General Dr Tedros Adhanom Ghebreyesus, spoke of the battle against COVID-19 mis- and dis-information, acknowledging that the world is "not just fighting an epidemic, we're fighting an infodemic. Fake news spreads faster and more easily than this virus, and it is just as dangerous" (López-Calva 2020). Cinelli et al. (2020: 1) and López-Calva (2020) state that false and questionable information and 'clickbait' headlines have influenced people to ignore health advice, fostered discrimination, advocated for unproven and non-scientific remedies, amplified rumours and caused confusion, fear and panic surrounding COVID-19.

Globally, infodemic has influenced how people respond to state COVID-19 vaccination programs as vaccine rumours, conspiracy theories and false-negative claims have been identified as precipitators for vaccine hesitancy and have affected vaccine uptake (Islam et al. 2021: 2). Infodemic thus represents a serious threat to public health policies, government, non-government and international health agencies' interventions, and national economic security (Horton 2020: 1474; Islam et al. 2021: 2). As a result of infodemic, vaccine hesitancy has become a phenomenon in many countries (Horton 2020: 1474).

THE DEVELOPMENT OF VACCINES

This report provides vignettes of six situations where countries have attempted COVID-19 vaccine rollouts and have experienced vaccine hesitancy: Nepal, Pakistan, Liberia, South Africa, Australia, and the United States. The states selected are a mix of developed/developing economies as defined by the United Nations (2020: 145-146) *World Economic Situation and Prospects* statistical annex and have been chosen due to their Human Development Indicator rank – see below (United Nations Development Programme 2020). They are arranged in the order they are presented in this report. Furthermore, the rationale for selecting four of these countries is based on the global organisation Accountability Lab (AL), which has labs in Nepal, Pakistan, Liberia and South Africa. With respect to the other two selections, the United States is a program partner of AL, and AL Nepal has a partnership with Western Sydney University, Australia.

Table 1: Selected states, status and HDI ranking

STATE	DEVELOPING/DEVELOPED	HDI RANK
Nepal	Developing	142
Australia	Developed	8
United States	Developed	17
Liberia	Developing	175
Pakistan	Developing	154
South Africa	Developing	114

A global pandemic for a new disease demanded a solution, and scientists worldwide have worked tirelessly to develop and produce vaccines to help combat the spread of COVID-19. Vaccine development for the SARS-CoV-2 coronavirus commenced in early 2020, however scientists were careful not to promise quick success; after all, the fastest vaccine development (for mumps in the 1960s) had taken four years (Ball 2021: 16). However, by December 2020, several vaccine developers had announced excellent large scale trial results. The rate of achievement is an excellent testament to what is possible for safe vaccine development and has greatly advanced the future of vaccine science (Ball 2021: 16). As of 15 October 2021, twenty-three vaccines have been approved for administration and rolled out globally, with 126 vaccine candidates undergoing clinical trials. Approximately 194 more vaccine candidates are in pre-clinical development (GAVI 2021a; McGill COVID-19 Vaccine Tracker Team 2021a).

The World Health Organization (2020a) states that while all the COVID-19 vaccines are designed to influence the immune system to recognise and block the virus safely, there are several types. Some COVID-19 vaccines work by teaching body cells to produce a protein that triggers an immune response to protect an individual if exposed to the virus. Vaccines of this type include the messenger Ribonucleic Acid (mRNA)-based COVID-19 vaccines such as Pfizer and Moderna, and the deoxyribonucleic acid (DNA)-based ZyCoV-D DNA vaccine (Centres for Disease Control and Prevention 2019a; McGill COVID-19 Vaccine Tracker Team 2021a; World Health Organization 2020b).

Viral vector COVID-19 vaccines – such as Janssen, AstraZeneca and Sputnik V – use a different virus that cannot cause disease (known as a 'vector'), to teach the body to produce coronavirus proteins to develop an immune response (Centres for Disease Control and Prevention 2019b; World Health Organization 2020b).

Inactivated COVID-19 vaccines, such as Covaxin and CoronaVac, are produced using "a form of the virus that has been inactivated", meaning that it cannot cause disease yet generates an immune response (World Health Organization 2020a).

Lastly, protein-based vaccines such as protein subunit vaccines, like the FBRI EpiVacCorona, use "harmless fragments of proteins or protein shells that mimic the COVID-19 virus" to generate an immune response (World Health Organization 2020a; World Health Organization Collaborating Centre for Vaccine Safety 2021). Table 2 below sets out the types of approved vaccines and their common names.

Vaccines are seen as the way out of the pandemic. They "offer the most effective solution" to the pandemic due to their ability to prepare the immune system to recognise and block the COVID-19 causing virus (Wagner et al. 2021: 2; World Health Organization 2020a).

Vaccines are aiding countries to restore a degree of normality and give the vaccinated an effective protective method against the harmful and deadly effects of the virus (Eccleston-Turner & Upton 2021: 427; World Health Organization 2020b). The immunity provided by a COVID-19 vaccine helps the body fight the virus and reduces the risk of developing severe illness and associated health consequences if exposed to the virus.

Table 2: Types of Vaccines and common names

VACCINE TYPE	VACCINE NAME
RNA	Moderna mRNA-1273
	Pfizer/BioNTech BNT162b2
	Takeda TAK-919 (Moderna formulation)
Non-Replicating Viral Vector	Oxford/AstraZeneca AZD1222
	Serum Institute of India Covishield (Oxford/ AstraZeneca formulation)
	Janssen (Johnson & Johnson) Ad26.COV2.S
	Gamaleya Sputnik V
	Gamaleya Sputnik Light
	CanSino Ad5-nCoV
Inactivated	Bharat Biotech Covaxin
	Sinopharm (Beijing) BBIBP-CorV (Vero Cells)
	Minhai Biotechnology Co SARS-CoV-2 Vaccine (Vero Cells)
	Kazakhstan RIBSP QazVac
	Chumakov Center KoviVac
	Shifa Pharmed Industrial Co COVID-19 Inactivated Vaccine
	Sinovac CoronaVac
	Sinopharm (Wuhan) Inactivated (Vero Cells)
Protein Subunit	Anhui Zhifei Longcom ZF2001
	Center for Genetic Engineering and Biotechnology (CIGB) CIGB-66
	FBRI EpiVacCorona
	Medigen MVC-COV1901
	Vaxine/CinnaGen Co. COVAX-19
DNA	Zydus Cadila ZyCoV-D

Vaccination also protects the community as it reduces the rate of human-to-human transmission. Reducing the transmission rate can be measured by the 'R number' – a term given to the number of people to whom one infected person will, on average, pass on a virus. If an R number is under 1.0, then each infected person will infect less than one other person; if it is higher than 1.0, each infected person will infect more than one other person. Getting the R number below 1.0 is critical for frontline workers such as healthcare staff and those who would develop severe effects if exposed, such as the elderly and those with medical conditions (Wagner et al. 2021: 2; World Health Organization 2020a).

As of 8 November 2021, according to data presented by *Our World In Data* (Ritchie et al. 2020a), 7.28 billion vaccine doses have been administered worldwide, with approximately 26.56 million doses administered daily. Over 51% of the global population has now received at least one COVID-19 vaccine dose. This number is however skewed to the global North as only 4.2% of people in low-income countries have received at least one dose (Ritchie et al. 2020a).

Table 3 below presents the main events in the spread of COVID-19 and the development of vaccines.

Table 3: Chronology of key events in the global COVID-19 pandemic
(COVID-19 Pandemic and Vaccine Global Timeline – data till April 2021[1])

DATE	EVENT
PHASE ONE – INITIAL OUTBREAK	
31 December 2019	China reported cases of Pneumonia in Wuhan (novel Coronavirus eventually identified)
4 January 2020	World Health Organization reported on Wuhan's pneumonia cases (no deaths) via social media
13 January 2020	Thailand confirms COVID-19 case – the first case outside of China
30 January 2020	WHO's report identified and confirmed: 7,818 COVID-19 cases worldwide. Risk assessment: China – very high; Global – high
11 March 2020	WHO characterised COVID-19 as a pandemic
13 March 2020	Europe becomes the new epicentre of the pandemic
PHASE TWO – VACCINE DEVELOPMENT	
18 March 2020	WHO and partners launched Solidarity trail – an international clinical trial to generate robust data to find the most effective treatment
20 March 2020	WHO launched on WhatsApp to offer instant and accurate COVID-19 information (available in multiple languages for global use)
4 April 2020	1 million cases confirmed worldwide
11 April 2020	Draft landscape of candidate vaccines published by WHO
13 April 2020	130 scientists, funders, and manufacturers worldwide commit to working with WHO to speed up vaccine development
18-19 May 2020	The 73rd World Health Assembly was held virtually, co-sponsored by more than 130 countries. It recognised the importance of extensive immunisation and called for equitable access to and distribution of all essential health technologies and products
29 May 2020	Launch of the COVID-19 Technology Access Portal (C-Tap) – an initiative to make vaccines, tests, treatments, and other health technologies to combat COVID-19
4 June 2020	Global Vaccine Summit – commitments aimed to maintain immunisation in lower-income countries and stressed the importance of a safe, effective and equitable accessible vaccine to combat COVID-19
15 July 2020	COVID-19 Vaccines Global Access (COVAX) Facility, secured engagement from more than 150 countries (60% of the world's population) 75 countries expressed interest in financing vaccines from their own public finance budgets and partnered with up to 90 lower-income countries
31 July 2020	COVID-19 pandemic is still constituted as a public health emergency of international concern
21 September 2020	156 economies (approx. 64% of the total global population) either committed to or were eligible for the COVAX Facility

1 Table data taken from: World Health Organization. 2021. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline?gclid=CjwKCAjwgb6IBhAREiwAgMYKRnDDID-OzJpVuBbiJhbUJaZaVe673MjgeaeGg-bZ7ox1OttG3v-SxBoCqFAQAvD_BwE#!

DATE	EVENT
PHASE THREE – PROMISING VACCINES	
16 November 2020	Encouraging news about vaccines was released during the WHO 147th session of the Executive Board meeting
18 December 2020	COVAX – Access to nearly two billion doses of several promising COVID-19 vaccine candidates, enabling all participating countries to have access to doses in the first half of 2021
PHASE FOUR – VACCINES APPROVED FOR EMERGENCY USE	
5 January 2021	WHO's Strategic Advisory Group of Experts on Immunization (SAGE) reviewed the vaccine data for the Pfizer/BioNTech vaccine Pfizer/BioNTech – the first vaccine to receive an emergency use validation from WHO
11 January 2021	The Director-General called for a collective worldwide commitment to ensure vaccination for health workers and those at high risk in all countries gets underway in the first 100 days of 2021
14 January 2021	Pandemic continues to constitute a public health emergency of international concern
15 January 2021	WHO hosted a global R&D forum. Experts agreed on the need for critical research – including trials, modelling and observational studies on administering vaccines – in different target populations, as well as on vaccination delivery strategies and schedules The impact of vaccines on the transmission of infection, and the need to develop the next generation of vaccine platforms is discussed
19 January 2021	WHO Global Advisory Committee on Vaccine Safety COVID-19 subcommittee met to review available information and received data on the Pfizer BioNTech vaccine
22 January 2021	COVAX announced the advanced purchase agreement for up to 40 million doses of the Pfizer-BioNTech vaccine COVAX also confirmed it would receive its first 100 million doses of the AstraZeneca/Oxford University-developed vaccine manufactured by Serum Institute of India
3 February 2021	COVAX's first interim distribution forecast with information regarding the availability of vaccine doses in the first half of 2021 was published
8 February 2021	COVAX issued a statement on the new variant SARS-CoV-2, emphasising the importance of determining the AstraZeneca/Oxford vaccine's effectiveness
10 February 2021	Statement from WHO and UNICEF called for global leadership to scale up vaccine production and achieve equity
15 February 2021	Two versions of the AstraZeneca/Oxford COVID-19 vaccine for emergency use were given the green light by WHO to be rolled out globally through COVAX
24 February 2021	COVAX's global rollout began – Ghana the first country outside India to receive COVID-19 vaccine doses from COVAX
1 March 2021	First COVAX COVID-19 vaccine doses were administered in Africa. The Governments of Côte d'Ivoire and Ghana began COVID-19 vaccination campaigns aimed at protecting healthcare workers
12 March 2021	COVID-19 vaccine Janssen is developed by Johnson & Johnson, and is listed by WHO for emergency use in all countries and for COVAX roll-out
19 March 2021	WHO Global Advisory Committee on Vaccine Safety (GACVS) met to discuss information and data available on thromboembolic events (blood clots) and thrombocytopenia (low platelets) after vaccination with the AstraZeneca COVID-19 vaccine Conclusions: the AstraZeneca COVID-19 vaccine (including Covishield) continued to have a positive benefit-risk profile, with tremendous potential to prevent infections and reduce deaths across the world
25 March 2021	COVAX delivery delays for vaccines from the Serum Institute of India (SII) in March and April, and in March for AstraZeneca Serum Institute of India pledged that, alongside supplying India, it would prioritize the COVAX multilateral solution for equitable distribution
7 April 2021	Life-saving vaccines were delivered to over 100 economies, 42 days after their first international delivery. By this date, COVAX had delivered more than 38 million doses across six continents
10 April 2021	WHO marked the close of its 100-day challenge for vaccine equity, which saw tens of thousands of people and hundreds of organizations signing up to its declaration, directly calling on governments and manufacturers to speed up regulatory processes, boost manufacturing by sharing know-how and technology, to ensure that doses are shared equitably

As this report is focussed on countering infodemic, we now present the six short accounts of the most important features of the different states' COVID-19 responses, vaccination rollouts and their infodemic challenges.

NEPAL

Nepal

In collaboration with Narayan Adhikari (Country Director), Soni Khanal, and Prekkshya Bimali of Accountability Lab Nepal.

COVID-19 RESPONSE

Nepal recorded its first case of COVID-19 on 27 January 2020, when a student returned to Nepal from Wuhan, China. Two months after this initial case, the second case was a citizen returning from France (Sharma et al. 2021: 2). As a result, Nepal started making some efforts to combat the virus. By the time the government enforced lockdown and prohibited flights, there were still only two confirmed cases. The open border relationship with India, the districts along the India-Nepal border, and laid-off migrant workers returning to Nepal from India, the Middle East and other countries, fast became major sources of rapid COVID-19 transmission (Basnet et al. 2021: 3). On average, 7.4% of Nepal's population of 28 million work abroad, with approximately two million Nepalis working in neighbouring India (Hashim 2020). As a result of India's countrywide lockdowns and decreased employment opportunities, many migrant workers were forced to return to Nepal. Hashim (2020) states that due to suboptimal quarantine conditions and facilities, Nepal's outbreak was primarily due to positive returning travellers and workers, rather than local community transmission. The then Prime Minister of Nepal, KP Sharma Oli, publicly blamed and attributed Nepal's outbreak to returning migrants (Hashim 2020).

During the initial 2020 outbreak of the pandemic, Prime Minister Sharma Oli minimised the risk and severity of COVID-19. During his address at the National Assembly in June 2020, the PM stated that there was no need for panic and claimed that COVID-19 was like the flu, and that if someone contracted the virus, drinking hot water was curative (Pandey 2020). The PM further claimed that Nepalese people have stronger immunity against the virus; therefore, they did not need to worry (Pandey 2020). These statements from Nepal's highest elected official had no medical standing, were not based on scientific evidence and generated mass mis-information within the community. Nepal's devastating second wave resulted from the delusion that Nepalis were resistant to infection, a belief circulated by the government, and from a failure to strengthen the country's health system.

VACCINATION CAMPAIGN

Nepal's vaccination campaign started on 27 January 2021, with one million doses of the Covishield vaccine gifted from India and allocated by the Nepalese government to health workers on the frontline (World Health Organization 2021a). The gifted vaccines were a direct donation to Nepal from India and were not part of the COVAX program (a global effort to vaccinate everyone on earth).

Nepal's vaccination campaign is conducted based on priority. The priority target groups are health workers, essential workers at the frontline, social sector workers, the elderly population, those aged over 55, the differently abled, and migrant workers with work permits

Nepal mask campaign, Kathmandu

(World Health Organization 2021). At the time of writing (November 2021), Nepal has so far only used the Covishield vaccine produced by the Serum Institute of India, the Vero Cell vaccine manufactured by China's Sinopharm, the single-dose Janssen vaccine produced by Johnson & Johnson and the AstraZeneca vaccine produced by Oxford university/AstraZeneca.

By August, Nepal had received over 1.5 million Janssen vaccine doses from the U.S and over 1.6 million doses of the AstraZeneca vaccine from Japan (GAVI 2021b). COVAX committed some 13 million doses to Nepal, which is only enough to double vaccinate about 20% of the population (Sapkota 2021). The government of Nepal has thus made efforts to ensure additional vaccine supply. On 21 February 2021, Nepal bought, at $4 per dose, two million doses of the Covishield vaccine from India (Poudel 2021a), but while the first shipment of one million doses was delivered to Nepal without issue, the remaining million doses was banned from being exported to Nepal, and the Indian government held back the promised consignment (Poudel 2021a). Nepal has also received vaccine doses as gifts – the Indian Army donated 100,000 Covishield vaccines to the Nepali army and their dependents (Poudel & Ghimire 2021). In addition to donations from India, China has donated over 1.8 million doses of the VeroCell vaccine, and Bhutan has delivered 230,000 AstraZeneca vaccines "under a reciprocity condition" (Post Report 2021).

When the Nepalese government implemented its vaccination program, the goal was to have 72% of its population, nearly 21 million people, fully vaccinated within three months (Poudel 2021b). The goal excluded people under 18 years of age, pregnant or breastfeeding mothers, those with allergies and other high-risk individuals (Bhattarai & Dhungana 2021). The vaccination goal has since increased to 78% under the Health Ministry's plan to vaccinate everyone above 12 years of age (Poudel 2021a). Poudel (2021a) states that since an estimated 4 million Nepalese live abroad, 20 million people need to be vaccinated to achieve the target. However, as of 1 November 2021 (nine months after starting the vaccination campaign), only 29.2% of Nepal's total population had received a first dose, and only 24.4% of the total population had been fully (double) vaccinated. Nepal is a thus long way from achieving its vaccination target (Ritchie et al. 2020b).

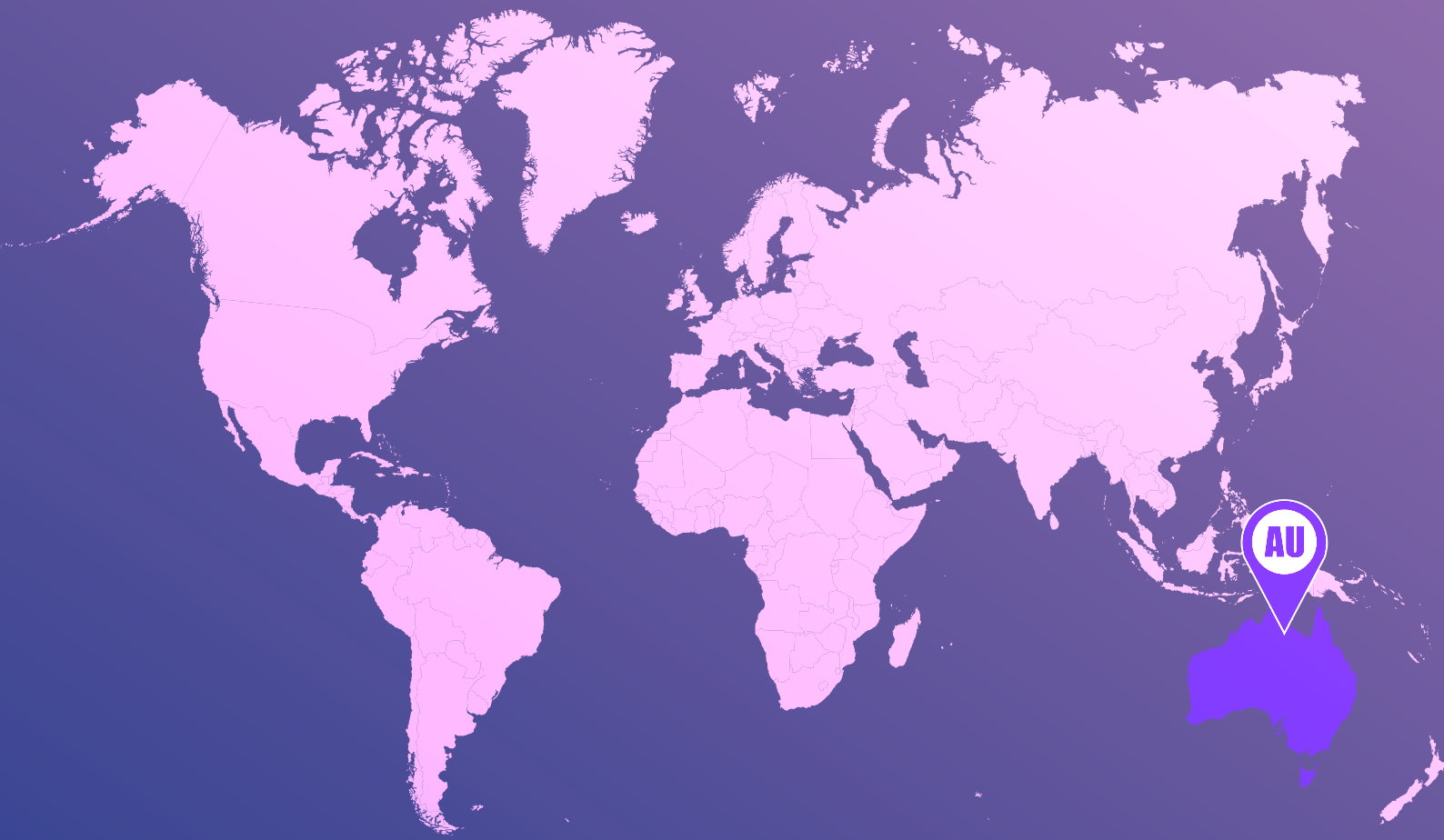
Though the vaccination campaign started early in Nepal (WHO 2020c), there have been many setbacks along the way, such as inconsistencies in vaccine procurement and distribution, frequent changes in Health Ministers, and general irregularities, to name a few. Though Nepal's vaccination campaign is based on priority, we cannot be sure of the equitable distribution and administration of the vaccine as the disaggregated data, based on sex, age and occupation, is not available, and there is also news of people who do not fall into the targeted priority groups receiving vaccinations based on access and power. As at 7 August 2021, based on the data available from the provinces, 42.34% of fully vaccinated people were from Bagmati province (central Nepal around Kathmandu) alone. Furthermore, 74.8% of the people who had received a first dose of the Covishield vaccine in March had to wait over five months to receive their second dose due to India's halt on vaccine exports and the Nepalese government not allowing vaccine doses to be mixed (Agence France Presse Kathmandu 2021). In August 2021, Nepal received AstraZeneca vaccines from Bhutan under the reciprocity condition and from Japan through COVAX, allowing those waiting to receive their second dose to be fully vaccinated (Post Report 2021).

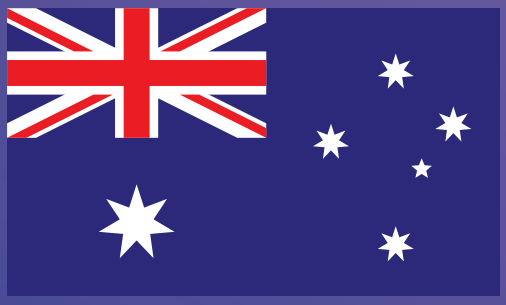
INFODEMIC PROBLEMS

Vaccine hesitancy among healthcare and frontline workers has challenged Nepal's vaccination program. Poudel (2021c) states that healthcare providers, including doctors who work on the frontlines, were hesitant about taking a COVID-19 vaccine due to scepticism surrounding quality standards and side effects. Furthermore, mixed feelings from the public surrounding COVID-19 vaccines were prevalent due to misinformation and rumours, particularly the exact contents of the vaccines (Singh 2021). Singh (2021) states that misinformation that COVID-19 vaccines had ingredients such as lard and alcohol caused reluctance from Nepal's Muslim communities to get vaccinated. For example, many people in the Muslim-majority community in Jagannath, in Rupandehi District, Western Nepal were hesitant to receive vaccines. On the first day of the village's vaccination drive that aimed to vaccinate the elderly population, only 28 of 432 people of the elderly population turned up. Singh (2021) states that to combat the religious misinformation that was circulating, local health officials in coordination with the local government and UNICEF visited the village and sought help from *maulanas* ('Islamic leaders') to reassure community members that what they had heard was untrue, and that the vaccines were safe. After the misinformation was challenged, more than 400 elderly community members received a vaccine (Singh 2021).

Women standing in line for vaccination, Dhulikhel

AUSTRALIA





Australia

RESPONSE TO COVID-19

Australia reported its first four positive cases of COVID-19 on 25 January 2020. All positive individuals were men aged between 30 and 60 who had travelled to Wuhan, China, one of whom had had direct contact with a positive case whilst in Wuhan (Doherty 2020). Since then, the Australian government has implemented a national campaign titled 'Stop the Spread and Stay Healthy' to inform Australians about the virus and protective health recommendations (Department of Health 2020). The measures have included closing Australia's borders, which has severely limited international air and sea travel, along with a mandatory 14-day quarantine for returning Australian passport holders (if they could get a flight), and for COVID-positive individuals detected within the community. Other measures have included contact tracing, QR code check-in when entering venues, lockdowns to restrict movement, 1.5-metre physical distancing, mandatory mask-wearing, good hygiene measures (such as hand washing and hand sanitiser) and free COVID-19 testing. Whilst Australia responded quickly to the COVID-19 threat, the vaccination rollout has been slow with several setbacks, and has been popularly known as the "Vaccine stroll out" (Martin 2021).

VACCINATION CAMPAIGN

Australia launched its National COVID-19 Vaccination program on 21 February 2021, and vaccinations commenced the following day (Department of Health 2021a). The first vaccines were given to priority groups at greater risk of encountering the virus – quarantine and border workers, frontline healthcare workers and aged and disability care residents and staff. The vaccination rollout began with 60,000 Pfizer/BioNTech COVID-19 vaccines being administered to the priority group (Prime Minister of Australia & Minister for Health and Aged Care 2021). The Prime Minister of Australia, Scott Morrison, and the Minister for Health and Aged Care, Greg Hunt (2021), stated that the Australian government had secured 150 million COVID-19 vaccine doses, with over 50 million AstraZeneca doses ordered by the government to be manufactured in Melbourne, Australia. The Australian biotech company CSL signed a one-off contract with the Australian Federal government to manufacture the AstraZeneca vaccine, and has committed to manufacturing 51 million doses. As of October 2021, 20 million doses had been produced to protect Australians, and those in the Asia Pacific (CSL 2021; Dziedzic and Fox 2021). CSL now produces approximately a million doses per week, with around 800,000 doses delivered to the Asia Pacific. Currently (November 2021), AstraZeneca is the only vaccine that can be manufactured in Australia, and the government has stated that it will not extend its contract with CSL (Department of Health 2021b). Dziedzic and Fox (2021) state that this announcement has met with huge disapproval from the federal opposition and aid organisations, as many countries are grappling with COVID-19 outbreaks and low vaccination rates.

In 2020, the Australian government contributed to vaccine research and development both internationally and domestically. Australia invested approximately AUD$8 billion into the national vaccine rollout and AUD$363 million in vaccine research and development, therapeutics and COVID-19 medicines (Department of Health 2021b; Hunt 2020). As part of the shared recovery of the Asia-Pacific region, Australia has committed to supporting the Pacific and Southeast Asia in accessing safe and effective vaccines, committing over AUD$623 million to ensure access to COVID-19 vaccines through the 'Vaccine Access and Health Security Initiative' and the 'landmark vaccine partnership with quad partners (U.S., India and Japan)' (Department of Health 2021b). Australia is also a member of the COVAX facility. On 26 August 2020, Australia donated AUD$80 million "to the Advanced Market Commitment (AMC)" to ensure high-risk populations receive vaccines. On 3 June 2021, Australia contributed another AUD$50 million to the AMC (Department of Health 2021b; Hunt 2020).

At the time of writing (5 November 2021) Australia currently has three COVID-19 vaccines approved by the Therapeutic Goods Administration (TGA) for the national rollout (Department of Health 2021c). After a careful evaluation process, the COVID vaccines have been granted provisional approval, meaning that approved vaccines can be legally administered because the need "outweighs the risks" (Department of Health 2021d). The Pfizer vaccine was provisionally approved on 25 January 2021 for ages 16+, and on 22 July, Pfizer was approved for ages 12+ (Department of Health 2021c). The AstraZeneca vaccine was provisionally approved on 15 February 2021 for people aged 18+. The Australian Technical Advisory Group on Immunisation (ATAGI) recommends using AstraZeneca for people above 60 (Department of Health 2021e). Those above 18 years in COVID-19 outbreak areas can still have the AstraZeneca vaccine if they do not have access to other approved vaccines, or if they have a health assessment and give consent (Department of Health 2021e). On 9 August 2021, the Moderna vaccine was provisionally approved and was rolled out from September for those over 18. As of 3 September, that vaccine is now available for those over 12 years (Department of Health 2021f).

As of 8 November 2021, 89.4% of all Australians over 16 years of age had received their first dose of a COVID-19 vaccine, and 80.6% of eligible Australians over the age of 16 were fully vaccinated (Ting, Shatoba & Palmer 2021). At 8 November 2021, 657,167 second vaccine doses were being administered a week. At this current pace, the eligible population over the age of 16 (20.62 million people) will be fully vaccinated by mid-February 2022 (Ting, Shatoba & Palmer 2021).

INFODEMIC PROBLEMS

Like other states, Australia faced the challenge of navigating large amounts of COVID-19 information online from reliable and unreliable sources (Australian Government 2021: 1). During 2019-2020, Australia was hit by two extraordinary events; the 2019-2020 summer bushfires and the pandemic, and both events were exacerbated by misleading, false and potentially harmful information (Australian Communications and Media Authority 2020: 2). During the initial global COVID-19 outbreak, misinformation spread quickly and made it hard for the public to identify verified information and facts from false information ('fake news'). Some of the misleading stories included how to prevent COVID exposure, possible COVID treatments, and the origins of COVID (Australian Communications and Media Authority 2020: 2). The University of Canberra conducted a survey that found 19% of Australians believed that COVID-19 was developed in a lab, while 40% did not know from where it had emanated (Park et al. 2020: 31).

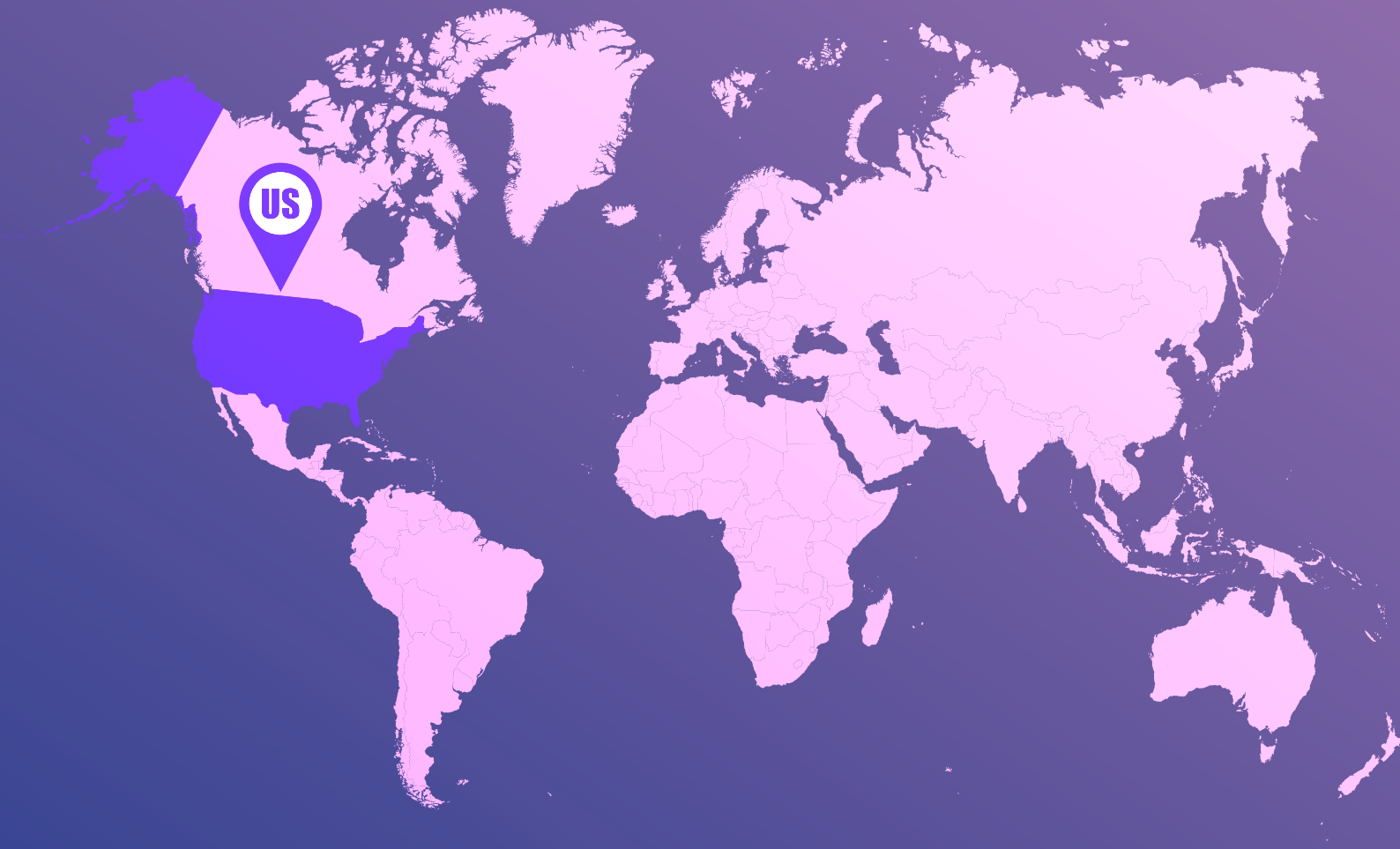
Furthermore, in March 2020, COVID-19 hoaxes and misinformation were circulating in private chat groups, such as Facebook Messenger and WhatsApp (AAP 2020). APP (2020) reported on some claims, such as how the COVID-19 virus 'hates heat' and would die if it were exposed to temperatures over 27 degrees Celsius, and that constantly sipping water would prevent "infection by keeping the throat moist and washing the virus into the stomach" (APP 2020). The claim about sipping water was a hoax message that was purported to be medical advice to UK hospital staff, but which was circulated through a Sydney WhatsApp group. APP FactCheck has debunked the claims (APP 2020).

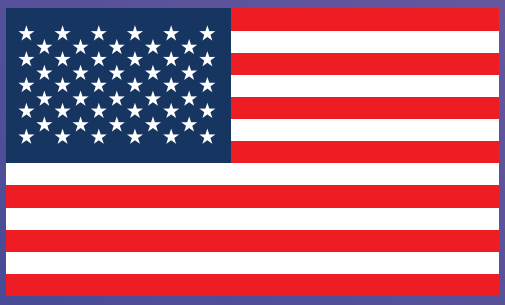
Australia's vaccination rollout has suffered many setbacks, including disruptions to supply, delays in local production, unreliable distribution from the Federal government to the state governments (who manage the pandemic) and changing vaccine recommendations and advice. Health Minister Greg Hunt stated on 31 January 2021 that the government aimed to have 20 million adults fully vaccinated before the end of October (Ting, Scott & Palmer 2021). However, this claim was retracted by the Federal government, following medical advice that recommended against the use of the AstraZeneca vaccine for people under the age of 50 (Ting, Scott & Palmer 2021). On 24 July 2021, ATAGI revised these estimates, and the Department of Health (2021g) issued a statement from ATAGI noting the ongoing constraints of the Pfizer vaccine supply, and growing COVID-19 outbreaks across Australia, and encouraged all individuals over 18 to consider getting vaccinated by any available vaccine, including AstraZeneca. The change in age recommendation and advice caused a lot of confusion and hesitancy amongst the Australian community.

Handley (2021) states that online mis- and dis-information surrounding COVID-19 vaccines and women's health greatly impacted women and girls' willingness to get vaccinated. The mixed messages from authorities surrounding the AstraZeneca vaccine for young people opened a door for people to capitalise on the confusion. For example, misinformation suggested that the risk of dying from blood clots was significantly higher than what was reported (Handley 2021). Handley (2021) reported that this misinformation not only caused many to be hesitant to receive the vaccine but caused incredible amounts of anxiety even after receiving a dose.

Further issues of COVID-19 vaccine mis- and dis-information and undue scepticism have circulated on social media. The spread of vaccine infodemic in Australia has influenced vaccine hesitancy, particularly amongst Australia's culturally and linguistically diverse communities (Yussuf 2021). Yussuf (2021) states that the influence of vaccine infodemic in Australia's ethnically diverse communities is reflected in their poor vaccination rates. In the Australian state of Victoria, the local government areas of Hume, Brimbank, Darebin, and Melton are home to large numbers of ethnically diverse communities, and have the lowest vaccination rates in the state. With respect to misinformation among ethnic Chinese, the Chinese social media app WeChat is a platform that enables users to discuss public affairs and share information about the pandemic, however in March 2021, Xiao et al. (2021) reported WeChat was broadcasting false COVID-19 vaccine claims, including how mRNA COVID vaccines, such as Pfizer, integrate with one's DNA, transforming vaccine recipients into 'genetically modified humans' (Xiao et al. 2021). People claiming to be health experts using "scientific research" surfaced in chats to disseminate this misinformation, however the posts were seen by over 2000 Chinese Australian users, and were shared in at least five different active WeChat groups (Xiao et al. 2021).

UNITED STATES





United States

COVID-19 RESPONSE

The Centers for Disease Control and Prevention (CDC) (2020) confirmed the United States' first COVID-19 case on 21 January 2020, with a returning traveller from Wuhan, China. Before the first confirmed case, the CDC (2020) had been preparing for the virus, taking a proactive response by implementing various precautionary measures, such as: alerting clinicians to be cautious and to 'look-out for patients with respiratory symptoms' among those who had recently travelled to Wuhan. During this time, the CDC (2020) also developed testing and management guidelines for clinicians and developed diagnostic tests to detect the COVID-19 virus in clinical specimens. Furthermore, the CDC implemented public health entry screenings at major airports including New York, Los Angeles, and Atlanta, and activated its Emergency Operations Centre to provide ongoing support to the COVID-19 response.

VACCINATION CAMPAIGN

On 11 December 2020, the FDA approved the first COVID-19 vaccine under emergency use authorisation (EUA). The Pfizer-BioNTech vaccine, produced through a partnership "between a U.S. pharmaceutical giant and a German biotechnology company", was available for administration to people above 16 years, and its use was later expanded to those between 12-15 years on 10 May 2021 (BBC News 2020; U.S. Food & Drug Administration 2021b). The U.S. also had the Moderna vaccine approved under a EUA on 18 December 2020 for individuals above 18 years of age, and Johnson & Johnson's single-dose Janssen vaccine authorised in February 2021 (U.S. Food & Drug Administration 2020). The Janssen vaccine administration was temporarily paused on 13 April due to reports of blood clotting in a small number of recipients, but this pause was lifted 10 days later (The New York Times 2021).

In July 2020, the U.S. Department of Health and Human Services announced it had secured a US$1.95 billion deal with Pfizer to secure 100 million doses, ensuring that the U.S. could purchase an additional 500 million doses when required (Matza 2020). The U.S. Government gave Moderna nearly US$1 billion for COVID-19 research and signed a US$1.5 billion deal for 100 million doses (Matza 2020). After purchasing an additional 100 million doses from Pfizer and Moderna, on 11 February 2021, the U.S. Government purchased 600 million vaccine doses from both companies to protect and vaccinate the population, which it aimed to do as quickly as possible (U.S. Department of Health and Human Services 2021). In June 2021, the White House announced that the U.S. would be distributing 25 million vaccine doses (from the 80 million doses that President Biden had pledged to share internationally) as the disparity between advanced-developing economies was growing (O'donnell & Mason 2021). The U.S has also donated nearly 19 million vaccine doses through the COVAX program (O'donnell & Mason 2021).

When the first COVID-19 vaccines were being administered in late 2020, approximately 21 million American healthcare workers and 3 million elderly people living in residential care were given priority access, followed by approximately 87 million essential workers (Matza 2020; BBC News 2020). Those who were not at severe risk, including youth and healthy individuals, would be in the final group and, would start to receive vaccinations around March 2021 (Matza 2020). In the U.S., the Federal government has made vaccines accessible to everyone living in the country. COVID-19 vaccinations are free to everyone "regardless of their immigration or health insurance status" (CDC 2021a).

As of 2 November 2021, 192.5 million people in the U.S. above 12 years of age have been fully vaccinated. Out of the total population of the U.S., including those not currently eligible, 66.9% have received one vaccine dose, 58.1% are fully vaccinated, and 10.3% have received a booster dose and according to the CDC (2021b), as of 2 November, the U.S has administered 423,942,794 vaccine doses. As of 27 October, booster and extra doses are available for individuals who have received the Pfizer-BioNTech and Moderna vaccines six months after their second shot, and the Janssen vaccine two months after their single shot. Pfizer and Moderna booster doses are currently available for 'at risk' individuals, such as those over 65 years, those above 18 years with underlying health conditions, and those above 18 years who work in high-risk environments, with extra vaccine doses available for the immunocompromised (CDC 2021c). The Janssen booster is available to all individuals over 18 years due to its lower effectiveness compared to Pfizer and Moderna (CDC 2021c). The CDC's (2021c) recommendations now allow for 'mix and match' vaccine dosing for booster shots, enabling individuals to choose which vaccine booster they prefer.

Currently (2 November), vaccine providers administer approximately 1.28 million vaccines a day, a 62% decrease from the 3.38 million a day peak reached on 13 April 2021 (The New York Times 2021). President Biden announced a goal to administer at least one vaccine dose to 70% of adults (16+) before 4 July 2021 (Bose & Mason 2021). While the goal was not achieved by the target date, it was reached a month later, on 2 August. However, experts said that though 70% is a significant milestone and achievement, it will require at least 80% of the population to be vaccinated to achieve some form of herd immunity (Lovelace Jr & Rattner 2021).

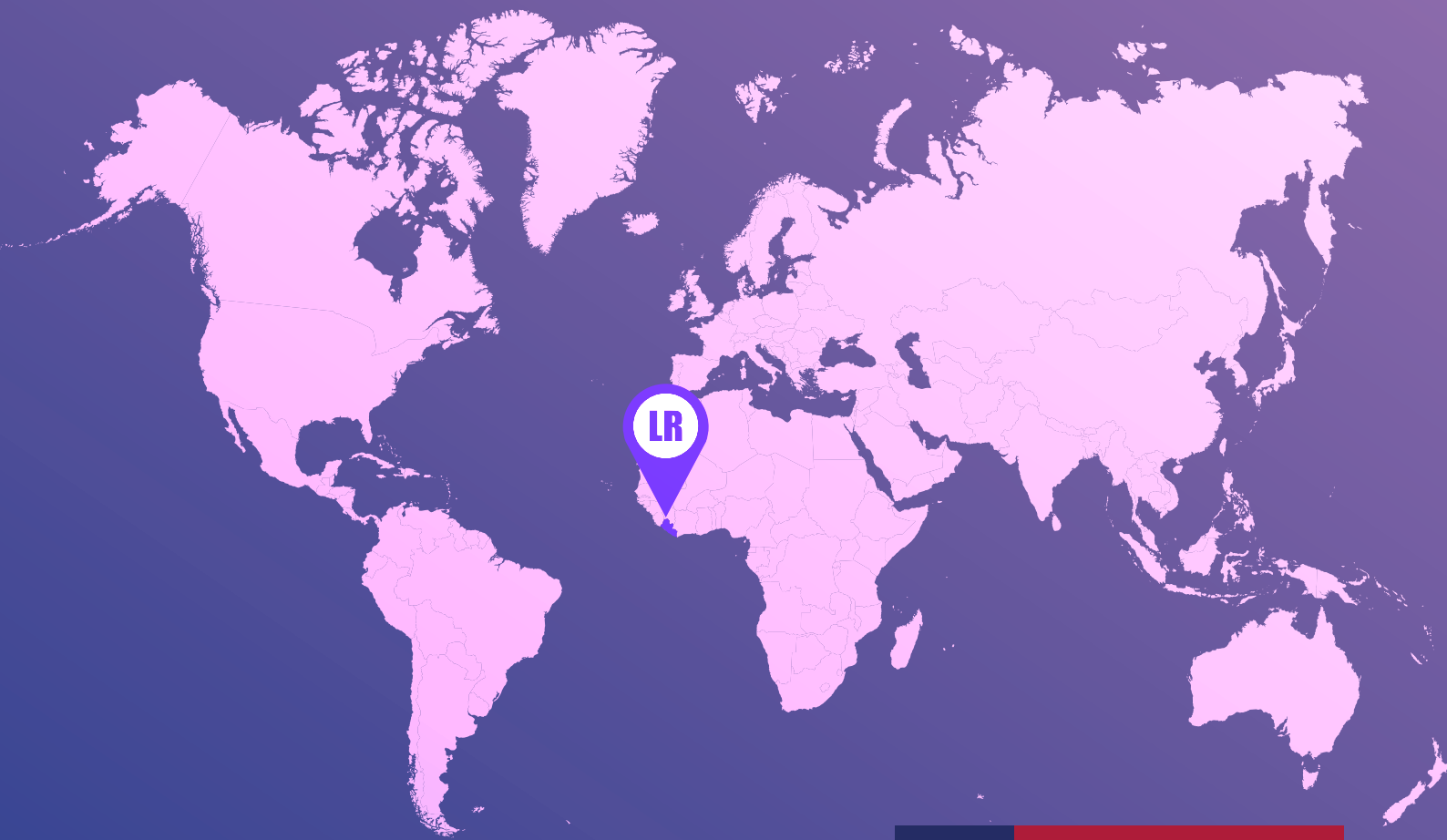
INFODEMIC PROBLEMS

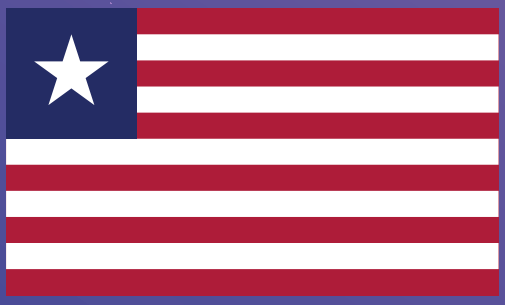
While the CDC acted promptly to the threat of the COVID-19 virus, then United States (US) President Donald Trump and his administration often meddled with science and scientific health advice, which had disastrous results for the nation (Viglione 2020). Trump and his administration lied about the danger of COVID-19, undermined the CDC's authority and efforts to contain it, discredited mask-wearing and social-distancing measures, and encouraged citizens to protest lockdown restrictions that had been implemented to stop virus transmission (Maxmen & Tollefson 2020; Tollefson 2020). Furthermore, the Trump administration attempted to silence, discredit and fire Dr. Anthony Fauci – a revered and long-standing infectious disease expert of the National Institutes of Health – tried to silence the CDC by sidelining world-leading experts from disseminating reports, ordered the CDC and Food and Drug Administration (TGA) to disseminate inaccurate information, issued false health guidance, and proclaimed medically unproven and potentially harmful COVID-19 treatments (Tollefson 2020; Viglione 2020).

Hennigan, Park and Ducharme (2021) state that the U.S. vaccination rollout was slower than anticipated under former President Trump's administration due to miscommunication, poor planning and mistrust. Local health officials state that the Trump administration's decision to limit the Federal government's role in vaccine administration meant that each state had to prepare its own plans for local vaccine distribution, and to launch vaccine campaigns when states were already facing funding issues, overwhelmed healthcare systems and mixed messages about the number of vaccine doses they would receive (Hennigan, Park & Ducharme 2021). When the Biden administration came to power in January 2021, it introduced a new program structure and intended to

vaccinate 100 million people within the Administration's first 100 days in office. To coordinate a new program that focused on administrative accountability, public health, and economic urgency, the National Guard and the Federal Emergency Management Agency (FEMA) set up thousands of mass vaccination hubs and deployed mobile vaccination teams to reach remote areas (Hennigan, Park & Ducharme 2021). Furthermore, Biden labelled the previous vaccination program as a 'dismal failure', due to the Federal Government not being transparent in providing support to the states, its lack of coherent public-health information campaigns, particularly for developing trust in COVID-19 vaccines, and in conveying information about vaccine eligibility (Hennigan, Park & Ducharme 2021). The Biden Administration set itself a goal of administering 100 million doses in its 'first 100 days', and it achieved this milestone by day 58 (Biden 2021).

LIBERIA





Liberia

In collaboration with W. Lawrence Yealue II,
Country Director of Accountability Lab Liberia

COVID-19 RESPONSE

Liberia's first COVID-19 case was confirmed on 16 March 2020 when a government official from the Environmental Protection Agency (EPA) returned to Liberia from Switzerland. Following the first confirmed case, President George M. Weah suspended all travel to and from countries with 200 or more confirmed COVID-19 cases. On 31 March Liberia closed its borders with Guinea, Côte d'Ivoire (Ivory Coast) and Sierra Leone. Due to the increasing number of COVID-19 cases, on 8 April 2020, President Weah declared a national state of emergency, during which all 15 of Liberia's counties went into quarantine, and travel between counties was prohibited. Stay-at-home orders were later brought into effect, first for residents of the counties of Montserrado, Margibi, Nimba, and Grand Kru, but following health advice, the president expanded this to cover all 15 counties. During this time, residents could only leave their homes to procure food or health items, face masks needed to be worn outside, and all non-essential business and government offices were closed. Only those persons deemed essential could continue working; for example, those engaged in the distribution of food, pharmaceuticals, and medicine, and those engaged in sanitation activities. The president authorised the armed forces to enforce the stay-at-home orders, so long as they remained "in subordination to the civil authority and the Constitution" (Constitution of Liberia § 86).

VACCINATION PROGRAM

Liberia launched its vaccination campaign on 1 April 2021. The Honourable Minister of Health Dr Jallah was the first person to receive the vaccine in Liberia and has stated that vaccines are critical to win "the unprecedented fight against the COVID-19 pandemic" (Liberia Permanent Mission to the UN 2020; World Health Organization Africa 2021a). According to the World Health Organization Africa (2021a), when the vaccination program launched, Dr Jallah urged all those who were eligible, particularly healthcare workers, to embrace the opportunity to get vaccinated and assured them that the vaccines are free, safe and voluntary. For Liberia, the priority vaccine group included healthcare workers, elderly people above the age of 60, individuals with co-morbidities, refugees, government officials and essential workers who could not socially distance themselves when working (World Health Organization Africa 2021b).

As part of the COVAX global initiative to achieve the goal of an equitable distribution of COVID-19 vaccines worldwide, Liberia has received a total of 494,400 COVID-19 vaccine doses (World Health Organization Africa 2021c). These included donations of 96,000 AstraZeneca vaccine doses which were received in two batches from the French Government in collaboration with the European Union. The first batch arrived in early March, and the second in late August of 2021; 302,400 doses of Johnson and Johnson's Janssen vaccine have been donated by the U.S. Government in collaboration with African Union and Africa CDC by 25 July (Mitchell 2021). The World Health Organization Africa (2021b) has stated that in addition to receiving COVID-19 vaccines through COVAX, Liberia has also received syringes for vaccine administration and safety boxes to dispose of immunisation waste.

On 24 May 2021, the WHOs Director General, Dr Ghebreyesus called for all countries to have at least 10% of their populations vaccinated by September 2021, and at least 30% by the year's end (Miapue 2021a). The Liberian Government set out to achieve the WHO's goal and set its own goal to vaccinate 70% of the country's population. However, issues surrounding vaccine hesitancy have greatly impacted vaccination rates both in Liberia and in other parts of Africa. When Miapue (2021a) was writing in September, not even half of the 494,400 vaccine doses that were to be delivered to Liberia had been used; at 23 August, approximately 113,680 vaccine doses had been administered, with 0.5% of the population fully vaccinated (Reuters 2021). However, there has since been a spike in vaccinations. As of 3 November, Liberia has administered approximately 438,430 vaccine doses with 4.4% of the country's population vaccinated (Reuters 2021). During the last week reported, an average of 9,011 doses have been administered, however at this rate it will take another 110 days to vaccinate an additional 10% of Liberia's population (Reuters 2021).

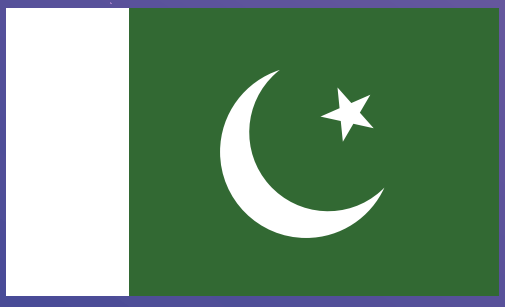
INFODEMIC PROBLEMS

President Weah controversially publicly named the EPA official who was Liberia's first COVID-19 patient, and claimed they had violated screening protocols at Roberts International Airport (RIA) (Center for Media Studies and Peacebuilding 2020). The EPA quickly rebutted this claim, stating that its Executive Director had never evaded any preventive health protocols, and that the information circulating was 'fake news'. The Center for Media Studies and Peacebuilding (2020) stated that these events created doubts that eventually ushered in the beginning of the spread of mis- and dis-information in Liberia. Information mismanagement spread panic and disbelief on radio and social media that 'COVID-19 Does Not Exist' or 'There is No Coronavirus in Liberia' (Center for Media Studies and Peacebuilding 2020). Citizens even accused the government of attempting to solicit money from the international community and foreign nations by announcing that the country had reported the first case of COVID-19, and many citizens called into radio talk shows to denounce the existence of the virus in Liberia. The Center for Media Studies and Peacebuilding (2020) asserts that one major event fuelled the 'COVID-19 Does Not Exist' belief. This event was the relatively short period it took Information Minister Eugene Nagbe (whom the government had said was COVID positive) to recover from the virus, despite appearing to be in good health during live interviews he conducted from his hospital bed. Misinformation – such as claims that inhaling steam or drinking garlic water are effective COVID-19 treatments, or consuming high content alcohol can protect against the virus – circulated on various digital platforms such as Facebook and TV broadcasts (Center for Media Studies and Peacebuilding 2020). Furthermore, issues with COVID-19 testing caused widespread misinformation. For example, Dr Nyan "a prominent infectious disease scientist" publicly criticised the government's testing regime as faulty, stating that the "regime for COVID-19 is completely inaccurate and there needs to be an investigation into the wrong testing results repeatedly produced by the National Public Health Reference Lab" (Center for Media Studies and Peacebuilding 2020).

Dr Ziah, a lead doctor at Liberia's government-run COVID treatment centre, has stated that vaccine hesitancy is 'putting the public in greater danger'. Dr Ziah claimed vaccine myths and misinformation have 'inundated the public space' so that people believe COVID vaccines do not work or make recipients magnetic (Miapue 2021b). A relationship between the surge of infodemic and low vaccination rates has been established, with only 0.18% of an estimated 5 million population fully vaccinated between March and July 2021 (Miapue 2021b). Vaccine hesitancy is also prevalent due to recipients' mistrust towards the government on COVID-19 vaccine safety and religious beliefs. In a survey conducted by Afrobarometer (Seydou 2021: 5 & 7), 78% of Liberians do not trust the government to ensure the vaccines are safe to use; 49% are very unlikely to get vaccinated due to government safety mistrust; and 86% believe that prayer is 'somewhat more'/'much more' effective against COVID than vaccines.

While vaccine misinformation is affecting Liberia's COVID-19 vaccination rates, it is also impacting other immunisation programs. Hatcher-Moore, Ibeabuchi and Toerien (2021) state that vaccinators are having a challenging time convincing parents to vaccinate their children against polio, despite Liberia administering the vaccine for years. Many people are now refusing other vaccines due to inaccurate information circulated about COVID-19 vaccines which has generated mistrust about other essential vaccines (Hatcher-Moore, Ibeabuchi & Toerien 2021).

PAKISTAN



Pakistan

In collaboration with Fayyaz Yaseen (Country Director), and Ali Yaseen Khan of Accountability Lab Pakistan

COVID-19 RESPONSE

The first case of COVID-19 in Pakistan was reported in Karachi on 26 February 2020. The positive COVID individual was a student who travelled to Iran on a pilgrimage on 6 February. Pakistan has had a mixed response to the outbreak, as Pakistan's two major ruling parties, Pakistan People's Party (PPP) based in Sindh, and Pakistan Tehreek-e-Insaaf (PTI) (Pakistan Movement for Justice), have approached the situation differently. By mid-March, local case transmission began to mount, particularly in densely populated cities. After a federal deliberation and national consensus, PPP's Prime Minister Imran Khan agreed to impose a nationwide lockdown, which ended on 31 May. Pakistan's military supported the lockdown and has deployed troops to assist civil administrations to enforce countrywide lockdown. To help combat COVID-19, the National Coordination Committee for COVID-19 and the National Command and Operation Centre (NCOC) were set up to monitor the situation and issue directives on pandemic policy. Furthermore, to prevent the spread of the virus, Pakistan's borders with Iran, Afghanistan and China were closed, inbound and outbound air flights were halted, COVID-19 screening centres were established at various airports to check, isolate and quarantine positive cases, and greater restrictions were implemented during Ramadan, Eid, and other religious and social occasions (Georgeou and Hawksley 2020: 72-73).

VACCINATION CAMPAIGN

Pakistan launched two COVID-19 vaccination campaigns. The first drive launched on 2 February 2021 for front-line healthcare workers, notably those working with COVID positive patients (Gul 2021). The second vaccination program launched in early March 2021 for the general population, starting with the elderly above 80, and then systematically lowering the age eligibility (Shahzad 2021a). From 1 September, everyone above the age of 17 was eligible, along with any child above 12 who is immunocompromised (UNICEF Pakistan 2021). And as of 28 September, children above 12 were eligible for vaccines to help protect them from the virus (The Associated Press 2021).

Currently, eight vaccines are being administered by designated public hospitals and vaccination centres across Pakistan: The Chinese CanSino Bio, SinoPharm and SinoVac vaccines; the United Kingdom's AstraZeneca vaccine; Pakistan's PakVak vaccine; the Russian Sputnik V vaccine; the German and American Pfizer vaccine; and the American Moderna vaccine. To ensure the vaccines are available to everyone, the Pakistan Government has made vaccination free (National Command and Operation Center 2021). Pakistan has received COVID-19 vaccines through multiple avenues including donations and government procurement. Through the COVAX initiative, more than 17 million COVID-19 vaccines have been gifted to Pakistan so far, with more to arrive: 2.4 million AstraZeneca doses, 3 million Pfizer doses, 6.1 million Sinopharm vaccines, and 5.5 million Moderna doses (UNICEF Pakistan 2021). The Pakistan government has also purchased vaccines with support from the Vaccine Alliance partnership known as GAVI (a co-leader of COVAX), the governments of Japan and China, and the Asian Development Bank. Early on it procured over 40 million COVID-19 doses from various countries, and in June 2021 the government committed $1.1 billion to procure more vaccines (Shahzad 2021b). From the onset of the COVID-19 pandemic in Pakistan, UNICEF and WHO have closely supported the Ministry of National Health Services, Regulations and Coordination (MoNHSRC) in COVID-19 emergency response.

In a country of approximately 220 million people, the government's overall goal is to vaccinate 70% of the adult population, including at least 70 million people by the end of 2021 (Gul 2021). As of 1 November,

The COVID-19 has economically and socially disrupted nearly all aspects of life. People of different ages, however, are experiencing its effects in different ways. For youth, the COVID-19 crisis poses considerable risks in the fields of education, employment, and mental health. To involve young people in building societal resilience; Accountability Lab through its CivActCampaign (CCC) has arranged awareness sessions at the University of Haripur and Punjab College Haripur campus.

over 106 million vaccine doses have been administered – 18.35% of the population is now fully vaccinated, with 13.33% of the population partially vaccinated (Ritchie et al. 2020c). Currently (2 November) just 41.3 million people have been fully vaccinated (National Command and Operation Center 2021), so to address the issue of low vaccination rates and to help reach the goal of 70 million vaccinated, Pakistan recently opened vaccination to all citizens above 12 years of age.

INFODEMIC PROBLEMS

Like many states, Pakistan has had major issues surrounding misinformation on COVID-19, and numerous false claims have abounded: loosely translated these equate to – 'don't take the vaccine, it will cause your death within two years', 'the vaccine will cause impotency in males', '5G chips are being installed to track humans', and 'coronavirus is a conspiracy to depopulate Pakistani/Muslim citizenry'. The government did not downplay the seriousness of the global pandemic, and state-sponsored measures have been taken to eliminate prominent rumours and conspiracies. The government and various civil society organisations, such as Accountability Lab Pakistan, have put proactive measures into practice to track and debunk such rumours, and to provide reliable and validated information to citizens. To disseminate reliable information the government and civil society organisations have used a variety of tools including TV commercials, social media, mass public awareness campaigns, talk shows, community awareness and engagement programs.

For Pakistan, vaccine hesitancy, mis- and dis-information have been significant challenges for the vaccination program. Vaccine hesitancy is a major stumbling block toward achieving the vaccination target. There have been many contributing factors ranging from religious beliefs and taboos to side effects of the vaccines. Malik et al. (cited in Perveen et al. 2021: 10) state that numerous religious leaders have 'hijacked religion', and with Pakistan being predominantly a Muslim country, used their interpretation to claim that Sharia law does not allow for vaccination, including vaccination against COVID-19. Furthermore, Perveen et al. (2021: 10) states that due to the religious importance of halal for Muslims, many have been concerned with vaccine ingredients during their production and development. Vaccine hesitancy due to religious beliefs has been further exacerbated by the conspiracy that vaccines are a "Western conspiracy to eradicate Muslim populations" (Perveen et al. 2021: 9).

Conspiracy theories, social media rumours, word of mouth, illiteracy, access to vaccines and origin of the vaccines are among the factors that further exacerbate the situation. Gallup Pakistan (2020: 4) found that 49% of Pakistanis were hesitant to receive a COVID-19 vaccine and the main reason identified was that the vaccines were developed by foreign, particularly Western, countries. Conspiracy theories surrounding COVID-19 vaccines have been widespread on media platforms, reaching millions of Pakistanis. Some conspiracy theories have claimed that the vaccines have nanochips to control the human body through 5G internet and that the U.S. invented COVID-19 in UK labs and transferred it to China for transmission (Perveen et al. 2021: 9). Stories such as these have led to public misunderstanding and have affected public confidence in vaccines. The degree of hesitancy kept increasing until a robust and convincing narrative was built by the government and civil society organisations, which has now led to an upward trajectory of vaccine acceptance.

With regards to the project Strengthening Community Resilience to COVID-19 (SCRC), Team AL Pakistan has conducted a series of one-day training workshops for Community Frontliners in the targeted districts of Khyber Pakhtunkhwa which include Peshawar, Charsadda, Mardan, Swabi, and Haripur. These training workshops are aimed at providing in-depth knowledge on gathering information and myth-busting around COVID-19.

SOUTH AFRICA

South Africa

In collaboration with Sekoetlane Phamodi,
Country Director of Accountability Lab South Africa

COVID-19 RESPONSE

On 3 March 2020 a South African traveller returning from Italy became South Africa's first confirmed case of COVID-19 (Mkhize 2020). When the South African Government first heard of the COVID-19 outbreak in China, it swiftly implemented measures to screen arriving travellers as they entered the country to contain the spread of the virus, and to treat the infected (Ramaphosa 2020). When positive cases started to emerge from regional transmission, the Cabinet met and "decided to take urgent and drastic measures" including, declaring a national state of disaster in terms of the Disaster Management Act on 15 March and establishing a COVID Command Council on 18 March (Ramaphosa 2020). Other measures included: social distancing, closing schools and non-essential services, prohibiting all gatherings, restricting interprovincial travel, enforcing strong hygiene control, closing borders, and establishing isolation and quarantine sites (Ramaphosa 2020). Eventually, a hard lockdown was declared on 26 March 2020, which ended on 16 April 2020 (Zuma 2020).

VACCINATION CAMPAIGN

South Africa's vaccination campaign started on 17 February 2021. Securing the single dose Johnson & Johnson Janssen COVID-19 vaccine, the *Sisonke* ('together') vaccine program enabled the South African government to immediately administer Janssen to 500,000 healthcare workers, while licensing occurs (South African Medical Research Council 2021; Sisonke 2021). These vaccines were available at 17 hospitals across the country, where researchers and vaccinators worked together (Sisonke 2021). In Phase 1 of the Sisonke study, an estimated 1.2 million Healthcare and frontline workers were the priority group (National Institute for Communicable Diseases 2021a). However, under the expanded definition of a Healthcare and frontline worker, all medical workers, traditional health practitioners, and funeral home workers were included. Following healthcare and frontline workers, the phase 2 priority group included essential workers, people in congregate settings, those over 60 years, and people over 18 years who had co-morbidities (South African Government 2021). Phase 3 targeted 22.5 million people in the general population (National Institute for Communicable Diseases 2021a). The South African Products Health Regulatory Authority has approved the emergency use of four COVID-19 vaccines: AstraZeneca, Pfizer, Johnson and Johnson and CoronaVac. However, at the time of writing (2 November) only the Pfizer and Johnson & Johnson vaccines are currently being administered (National Institute for Communicable Diseases 2021b).

South Africa has received its vaccines through the COVAX initiative, the African Union Programme, purchasing, and from donations. South Africa has secured 11 million Johnson & Johnson vaccines, which will be delivered throughout 2021, and Pfizer has committed 20 million doses (Mwai 2021). South Africa has also received COVID-19 vaccines through the COVAX facility, securing 12 million doses to vaccinate 10% of the population (Mwai 2021). South Africa has received 5.7 million Pfizer doses from the U.S. to help boost the country's vaccination campaign, as part of the Biden-Harris Administration's global efforts to help fight the pandemic (U.S. Mission South Africa 2021). On 6 October 2021, the U.S. Government announced an additional US$9 million in funding to provide urgent assistance to South Africa's efforts to strengthen its fight against COVID-19 (Naki 2021). All COVID-19 vaccines are administered for 'free at the point of service', either funded by medical schemes for insured individuals or by the government for uninsured individuals (National Institute for Communicable Diseases 2021a).

The South African government's goal is to have 67% of the targeted population vaccinated by the end of 2021 (South African Government 2021). As of 2 November 2021, 22,627,182 vaccines have been administered to people aged 12 and above. Over 15.3 million individuals (excluding ages 12-17) are fully vaccinated with either the single-dose Johnson & Johnson or the double dose Pfizer vaccine. 38.48% of the adult population (18+) is fully vaccinated (SA Department of Health 2021).

South Africa's vaccination campaign was slow, with several issues contributing to the halting start, including global health inequality, delays in procurement, delays in the vaccine rollout plan and uncertainty of vaccine efficacy and side effects of the vaccines procured (Ueckermann 2021). South Africa has struggled to purchase vaccine doses due to inadequate equitable vaccine access. In addition, the government did not actively engage early in procuring vaccines through alternative avenues. By mid-January 2021, for example, the country's participation in the COVAX vaccine initiative had only secured enough vaccines for 10% of the country's population, approximately 12 million doses (Madhi 2021; Ueckermann 2021). Furthermore, while other countries, including some middle-income countries, were actively engaging in bilateral agreements with vaccine manufacturers in a timely manner, the South African government left it too late (Madhi 2021). This meant that many of the vaccines that were approved for use in the U.S. and Europe that were going to be mass-produced went to other countries that had made prior commitments (Madhi 2021).

The efficacy of the vaccines South Africa could procure was questioned due to the new emerging COVID-19 variants. The administration of the AstraZeneca vaccine from the Serum Institute of India was abruptly stopped due to local data that showed decreased efficacy and protection against the B.1.351 (Beta) variant spreading throughout Africa (Ueckermann 2021). Similarly, the Johnson & Johnson vaccine was halted in South Africa after the U.S. FDA-mandated suspension due to safety concerns surrounding the vaccine and the development of blood clots (U.S. Food & Drug Administration 2021b). Its administration was later resumed in April 2021 after the FDA and CDC lifted the pause due to a thorough safety review, and the South African Health Products Regulatory Authority evaluated the evidence and established "appropriate risk to benefit ratios" (Ueckermann 2021; U.S. Food & Drug Administration 2021b).

INFODEMIC PROBLEMS

From the onset of the pandemic, the South African Government took a strong position on mis- and dis-information. The approach was science-driven, as the Minister of Cooperative Governance and Traditional Affairs, who is responsible for negotiating, determining, coordinating and overseeing enforcement of the national state of disaster regulations, is a former health minister and a trained medical doctor, and the National Corona Virus Command Council is mainly constituted and chaired by scientists. Science communication experts and fact-checking organisations were swift to cooperate with and support public sector efforts to stem mis- and dis-information, through sites such as CodeForAfrica and Real411. Disinformation mainly occurs through social media platforms and influencer communities. McMichael (2021) reports that platforms such as Twitter, WhatsApp and Facebook are overflowing with disinformation and false, unsupported claims, including that vaccines are: a 'cover operation for a shadowy plot to subjugate and kill ordinary South Africans'; '666 inspired' (a reference to the Christian bible and the Mark of the Beast in the Book of Revelation); or that they are used to microchip people and corrupt their DNA. McMichael (2021) states that such mis- and dis-information and conspiracies come from predominantly white and religious right-wing groups.

Misinformation and de-contextualisation of COVID-19 vaccines led to vaccine hesitancy and mistrust among people (Ueckermann 2021). Ueckermann (2021) states that while conspiracy theories and inaccurate misrepresentations of facts have played a factor, there are increasing rates of "mistrust in science, pharmaceutical companies and authorities". A survey conducted by the University of Johannesburg found that out of 10,618 South African adults, 18% of people 'would not', or 'probably would not', take the vaccine, and 15% were 'unsure' (Runciman et al. 2021: 1-3). The reasons given ranged from side effect concerns (25%) to overall effectiveness of the vaccines (18%) and conspiracy theories (7%) (Runciman et al. 2021: 1).

Lastly, one other issue for the South African vaccination program was the exportation of the Johnson & Johnson vaccines produced in South Africa to countries in Europe that already had high vaccination and immunisation rates (Africanews 2021). The South African drug manufacturer Aspen's contract with Johnson & Johnson allowed the country to assemble the vaccine's ingredients, put it in vials and package it under a process called 'fill and finish' (Africanews 2021). A contract meant to support global vaccine production and the distribution of the vaccines for the continent has been criticised as 'vaccine apartheid'. The vaccines have been exported to countries needing booster shots when the continent of Africa has low vaccination rates in comparison (Africanews 2021). Following criticism, the deal has been suspended. South Africa led the African Union strategy to dismantle this deal, allowing all African produced vaccines to serve Africa first (Jerving 2021). As a result, the African countries expecting 10 million vaccine doses in September should now receive 20 million doses (Jerving 2021).

Conclusion

Infodemic is a danger, and in a fast-digitising world, the threats and challenges of infodemic are increasing. Infodemic is a threat to people adhering to public health orders, to vaccination programs and to people's health, safety and lives. As seen throughout this report, infodemic issues such as mis- and dis-information, false rumours and conspiracy theories have shadowed the COVID-19 pandemic. Globally people were, and remain, confused, hesitant and suspicious towards vaccination programs because of infodemic, which is widely available through digital media platforms, as well as through incorrect information disseminated by 'trustworthy' agents like governments.

COVID-19 is the first global pandemic that has coincided with technology and social media (WHO et al. 2020). Therefore, the need to combat infodemic, particularly in a crisis, is indisputable. Combating infodemic is imperative to ensure people can make accurate and informed decisions, implement health and safety practices and take the opportunity to protect themselves and others by getting vaccinated. Challenging infodemic requires truthful governments backed by trustworthy global and civil society organisations. In this spirit WHO, Accountability Lab, and other organisations can publicise accurate information, expose false claims, and empower communities.

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