Chapter 16
Communicating COVID: Learnings and Way Forward

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Abstract The authors underscore the importance of five key components of a successful pandemic communication strategy—trust, timeliness, transparency, public, and planning. The rapid dissemination of information in social media and other digital platforms has led to an overabundance of information about COVID-19 and much of it is false. This has been termed by the World Health Organization (WHO) as an 'infodemic'. Misinformation and disinformation about the origins of the pandemic, how it spread, and how it can be contained, have impacted efforts to save lives. However, several international and national organizations have successfully countered these messages by using low-tech and high-tech technologies to build trust and encourage compliance with public health measures.

Drawing on past experiences with previous pandemics, the authors discuss how communication strategies have been refined over time. Examples are provided of the impact of misinformation and dissemination on the pandemic in different countries. The experiences of countries around the world and the Indian experience are analyzed. Based on learnings with various communication approaches, the authors make recommendations for future crises: trust the science, identify credible spokespersons, consistently relay and leverage technologies, invest in digital literacy, sustain media engagement, and build intersectoral cooperation.

Introduction

As of early December 2020, the world had seen about 66 million confirmed cases of COVID-19 with over 1.5 million deaths. One-third of these deaths, about half a million, were reported in just two months, October and November [1]. With several countries battling second and third waves of the infection, the worst is far from over. The year 2020 has been, by far, one of the toughest times recorded in history, in terms of human loss and social and economic disruption. It has also been a year of tremendous learning.

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Scientists have scrambled to understand the nature of the virus and have relayed new knowledge in real time. In the absence of a therapeutic breakthrough, non-pharmaceutical interventions and health-promoting behaviors are the only means of preventing infection. Therefore, communicating the science to the public to reinforce COVID-preventing behaviors has proven to be as critical as the research and development of therapies and vaccines.

The COVID-19 pandemic has made it evident that public health communication is an indispensable part of our response for mitigating the ongoing global challenge. International agencies at the forefront of the pandemic response realized the role of COVID communications early on and have actively incorporated this into their strategy. In May 2020, the United Nations campaign 'Verified' was underpinned by the belief that 'Good Communication Saves Lives' [2].

Health communications have been defined as the study and practice of communications strategies that inform, influence, and empower individuals and communities to make decisions that promote health. But what is 'good communication' in public health? As a communications firm with over 10 years' experience in public health, policy analysis, and advocacy, Global Health Strategies (GHS) believes that effective communication is about informing and empowering communities to make healthier choices. With a presence in the US, UK, Brazil, Africa, and Asia, GHS works with government and non-government partners, media, and the private sector on a wide range of issues including infectious diseases, women and girls' health, non-communicable diseases, universal health coverage, emerging diseases, and research and development. Communicating the science to different audiences and bridging the gap between technical experts and the public at large is an area of expertise. Some of the successful GHS campaigns that have helped shape public discourse and move the policy needle in line with evidence include *'TB Haarega Desh Jeetega'* (TB will lose and the country will win) in India and '*My Body, My Choice*' in India and South Africa. GHS's work showcases two critical pillars of health communications: behavior change and the need for a two-way dialogue between those giving and those receiving information.

Based on its expertise and experience, GHS is providing strategic and tactical COVID communications support to partners across the globe. GHS's UK office is working with the Director-General of the World Health Organization (WHO) to contribute to the centralized response from Geneva. At country level, GHS offices in Kenya and South Africa are supporting regional partners and the governments to combat misinformation by creating and disseminating accurate, evidence-based messaging. And in India, GHS is a key communications partner to the country's top scientific body, the Indian Council of Medical Research (ICMR), and supports the WHO in crafting messages for COVID-appropriate behaviors. Over the years, GHS has built the capacity of scientists at ICMR to communicate with stakeholders, specifically focusing on crisis and risk communications. With learnings from this capacity-building and GHS's regular communication support, ICMR has been leading the COVID-19 communications response in India. ICMR has been communicating with the media through regular press interactions and advisories. It has also used digital

and social media to proactively communicate its research and updates on India's COVID response.

A partner in national immunization programs, GHS has extensive experience in promoting the use of life-saving vaccines by creating a communication narrative based on facts. Through its work, it has been able to build the government's confidence in implementing key policy decisions and has advanced the case for the pentavalent and rotavirus vaccines by creating an enabling environment for vaccine discussions grounded in evidence and science. As countries begin rolling out COVID vaccines, GHS will support partners in building vaccine confidence by dispelling misinformation that may arise in an age of growing vaccine hesitancy.

In this chapter, we outline key communication principles, how effective, fact-based communications have helped the overall COVID response, and some of the roadblocks and key learnings that have emerged. Some of these learnings are crucial for informing future communication strategies, not just for outbreak management but for public health programs at large.

Health Communications: Overview and Key Strategies

Health communications emerged as a distinct area of study in the late twentieth century. In the early 1990s, the US Centers for Disease Control and Prevention (CDC) started taking steps to integrate communications in its approach for disease prevention. An office on communications was established in 1996 [3]. Health communications started being included within academic programs as a part of public health curriculae and began to be offered as a formal degree program. This prominence was the result of an evolving view of public health and a growing understanding of its interdisciplinary nature.

The interconnectedness between individual health, environmental factors, human behavior, and community well-being has gained wide understanding in the last three decades. There is increasing recognition of the impact of different determinants on a population's health—including climate change, emerging environmental threats, risk-taking behaviors, food habits, sociopolitical conditions, and economic status, to name a few. At the same time, there has been a shift in public health policy toward prioritizing health prevention and promotion over curative care. Health communications have been a key element in this approach, helping to inform audiences, create awareness, influence perceptions, shift attitudes, prompt action, and encourage behavior change toward health promotion.

In India, large-scale national health efforts such as polio eradication and the National AIDS Control Program are prime examples where communication and social mobilization were placed at the heart of the response strategy and played an indispensable role in achieving successful outcomes. In a 2009 analysis on polio eradication in India, WHO stated that 'Communication strategies have contributed to such progress at several levels by: mobilizing social networks and leaders, creating political will, increasing knowledge and changing attitudes, ensuring individual and

community-level demand, overcoming gender barriers and resistance to vaccination, and, above all, reaching out to the poorest and the most marginalized. They should continue to play a central role in the final push to eradicate polio [4]'.

In the twenty-first century, a globalized world has had to face the emerging and rapidly increasing threats of outbreaks and pandemics, underscoring the need for urgent programmatic and communication responses. The severe acute respiratory syndrome (SARS) epidemic in 2003 prompted WHO to take a serious look at outbreak communications and best practices. Following the Expert Consultation on Outbreak Communications in 2004, the organization published guidelines in 2005 delineating the most critical components of outbreak communications and acknowledging that 'communication expertise has become as essential to outbreak control as epidemiological training and laboratory analysis [5]'.

The WHO guidance identified Trust, Timeliness, Transparency, Public, and Planning as the most important features of a successful outbreak or risk communication strategy. And these features continue to be at the center of current response strategies.

Trust

Communicating with the public in a way that builds and maintains trust is a critical first step. Trust between the public and outbreak managers works in both directions. The public's belief in the information coming from experts and in turn the experts' faith in the public's ability to absorb and accept this information are both equally crucial irrespective of the setting.

Timeliness

Given the time-sensitive nature of an epidemic or outbreak, urgency in communication is of prime importance. Delays in acknowledgment and announcement of an outbreak run the risk of losing trust and endangering compliance of the public to a preventive protocol.

Transparency

Greater transparency helps maintain trust. Ensuring that the public is privy, not just to information but also has a clear view of the decision-making processes, is key to ensuring this.

Public

Understanding the public's beliefs, concerns and perceptions, and including their representation in the decision-making process are important ways of ensuring that the population is placed at the center of communication strategies.

Planning

Finally, factoring risk communication into the overall pandemic preparedness plan is an important part of an effective and comprehensive response.

What We Have Learnt from the Past

These five key principles have continued to guide health communications up to the present crisis. Earlier pandemics—some of which, like HIV, are ongoing—have underscored the challenges of communicating within this framework and provide important lessons for our current moment. One primary hurdle that can have grave public health consequences is the difficulty of separating truth from falsehood. Confusion about what is true and what is false can undermine confidence in health experts and hamper control efforts.

In the early days of the HIV epidemic, conspiracy theories around the virus resulted in many refusing the use of anti-viral therapies in South Africa [6]. In the case of the Ebola epidemic in Western Africa in 2014, misinformation that spread around the cause and transmission of the disease, primarily through social media channels such as Facebook and Twitter, severely impeded emergency responses. In Nigeria, several patients were hospitalized and two died while trying out harmful 'cures' for Ebola, prompting Nigerian ministers to repeatedly issue statements to refute the myths [6].

The underlying issue was that of trust—many locals mistrusted state authorities and the information they circulated. There was also general distrust of 'Western' doctors and humanitarian organizations. It was quickly realized that in order to reach the public, the authorities had to use voices and channels it trusted. Organizations such as WHO and the CDC began enlisting local champions to dispel misinformation, translates information in local languages. In Liberia, music videos by a popular rapper, outlining methods of transmission of Ebola, went viral on YouTube. And the audiovisual form of communication ensured that accurate information reached those who could not read [6].

Similarly, in India, when rumors around the oral polio vaccine (OPV) threatened the polio elimination initiative, specifically in religious minority communities,

training institutions and influential religious leaders were engaged to deliver accurate information to the public by building credibility and trust in the program. A UNICEF report showed that engaging religious leaders in western Uttar Pradesh led to a significant drop—from 5 to 0%—in Muslim children who did not receive the vaccine in 2004 [4].

In 2005, an evaluation of communication strategies around polio eradication in Pakistan showed that while mass media certainly contributed to raising the public discourse around the issue, it often did not reach a core demographic: women [4]. While males continued to be influential in the community, the primary decision-maker about a child's health was most often the mother. Therefore, groups of trained female health workers were engaged to speak directly to the women and to also administer the vaccine. This helped circumvent the cultural barriers of all—male vaccination teams—who could rarely have a direct interface with the women in the community. It also significantly improved trust and built awareness among the public.

Understanding the public and its sociocultural environment has proven key to gaining the public's cooperation. For example, to battle consistent mistrust of health workers in Guinea during the Ebola epidemic, experts recruited a team of anthropologists to analyze the situation and improve cooperation of the community [7]. The team found that messaging around the epidemic had till then focused on biomedical factors alone, without taking into account sociocultural norms. Making minor changes, such as replacing the term 'isolation center' with 'treatment center', helped reduce fear and stigma in the community, as did adjusting the health safety protocol to take into account local beliefs and customs, such as burial rites.

During the SARS epidemic of 2003, timeliness became the most critical aspect for determining the success of risk communications. In Taiwan, a breakdown of communication between the public and the government in the early days of the epidemic, stemming from a shortage of masks fueled by a sudden increased demand, led to a significant backlash. Responding to criticism, the government initiated one of the strictest quarantine strategies in the world at the time—resulting in a further breakdown of cooperation between the public and the authorities [8]. The situation only improved after repeated appeals were made by the Minister of Health and other experts via televised addresses. Lessons from this experience led to significant long-term changes in Taiwan's public health communications policy. The country took proactive steps to improve its channels of information dissemination: by setting up a toll-free hotline to inform the public about potential epidemics, increasing access to government databases on infectious diseases to encourage transparency, monitoring rumors, and making inaccurate reportage in the media a punishable offense [8].

These past experiences have helped shape and refine government approaches to risk communication. However, the COVID-19 pandemic has introduced unprecedented challenges that are unique to our current sociopolitical context and information environment. While the cornerstone of an effective risk communication strategy still holds, countries across the world have had to adapt quickly and efficiently to address the continually evolving needs of the COVID-19 pandemic, unlike any other we have seen.

Fighting a Pandemic and an 'Infodemic'

Like any major event in history, disease outbreaks are inextricably linked to the sociocultural environment of the times. COVID-19 has been no exception. It hit the world in a time of political partisanship and growing social divisions, both fueled by an uncontrolled explosion of information, in a digital age. While this proved to be a boon in reducing outreach time and connecting with large numbers of people, this information overload has come with its own set of challenges.

WHO acknowledged this, terming the phenomenon an 'infodemic' and defining it as 'an overabundance of information—some accurate and some not—occurring during an epidemic [9]'. Following the World Health Assembly resolution that managing the infodemic is critical to controlling the pandemic, it convened the First WHO Infodemiology Conference in June 2020 [10]. Experts from different backgrounds convened virtually to ideate and chart a road map. WHO, along with other UN bodies, called upon all member states to promote science-based information and combat misinformation. It also urged social media platforms to respond to the infodemic [11].

While this explosion of information has provided much useful knowledge to the public, it has also been characterized by the spread of a great deal of false information, which can be categorized into two types: misinformation and disinformation. Misinformation is inaccurate, false information that is spread without the intention to mislead. Disinformation, on the other hand, is shared despite knowing it is false, with a mala fide intent to misguide. Both types of false news have spanned all aspects of the pandemic: how it originated, how it spread, how the disease is diagnosed, how it can be cured, and how governments are responding. The fallout of this parallel epidemic of false information—much of it spread via social media, as described below—has been serious, causing untimely deaths, disease spread, displacement, and disruption.

A global study published in The American Journal of Tropical Medicine and Hygiene in October 2020 examined the COVID-19 infodemic and its impact on public health [12]. Over a period of three months, the team of researchers conducting this study scanned and reviewed false information across various sources including fact-checking web sites, Facebook, Twitter, national and international newspapers, television networks, and the WHO and US CDC Web sites. The authors identified 2311 reports related to the infodemic, categorizing 89% of these as rumors, 8 percent as conspiracy theories, and 3% as stigma-related news. The topics ranged from the cause of disease, transmission, mortality, and control interventions to treatment and cure. Most of these originated in India, the US, China, Spain, Indonesia, and Brazil. Barring China, all the countries on the list have had high caseloads and fatality rates. Four of them—India, the US, Brazil, and Spain, are among the eight worst-hit countries bearing the highest disease burden [13].

Misinformation

Some of the most misleading and dangerous rumors around COVID-19 relate to claims of unverified treatments and cures. The US found itself in the grip of one such rumor when at a White House briefing on coronavirus in April 2020, the President suggested injecting a disinfectant into the body to kill the virus [14]. Coming from arguably the most powerful political office in the world, even a wildly speculative claim that chlorine dioxide can kill the virus proved to be a shot in the arm for conspiracy theorists who had been advocating its use to 'treat' cancer, AIDS, and autism. Shady portals selling the chemical gained traction, as did Twitter handles, promoting its benefits. Despite the US Food and Drug Administration (FDA) and CDC issuing several warnings [15] and disputing the claims, the misinformation spread like wildfire and led to the arrest of a person accused of promoting the product [16].

Around the same time, more than 500 people in Iran lost their lives by drinking toxic methanol alcohol reportedly in an attempt to fight coronavirus [17]. The number of Iranian poisoning cases till May was already five times higher than the second-largest methanol outbreak in history [17]. These cases were linked to the incorrect notion being spread that gargling with methanol or consuming it could cure the body of coronavirus.

In India, the emergence of cow urine as an elixir that cures all maladies has become a permanent fixture in the national wellness debate. In the COVID-19 infodemic, it surfaced several times, touting the magical effect of '*gaumutra*', or cow urine, in tackling the virus. In March 2020, a fringe Hindu group organized a drinking party in Delhi where believers consumed cups of cow urine [18]. Along similar lines, in April, ten people were taken to the hospital in Andhra Pradesh's Chittoor district, after drinking a concoction made from *datura* (devil's weed) seeds, a locally available weed with toxic properties [19]. The origins of this quack remedy allegedly lay in a viral video promoting the drink as a miracle cure for COVID.

There were ample instances of social media being used to relay misinformed opinions of thought leaders and share unproven treatment remedies. Country leaders hyped the effect of hydroxychloroquine even before it was established that the drug had any impact on COVID-19 [20]. This resulted in the hoarding and stocking of the drug. The drug, which is inexpensive and has previously been used mostly to treat autoimmune conditions, became unavailable for the people who required it for other diseases [21].

Apart from creating serious health hazards, false information also caused major economic and social disruption. Rumor mongering led to panic reactions from vulnerable populations. In India, ambiguity on how long lockdowns would continue led to frantic movement of migrant workers in risky conditions [22]. On April 14, 2020, Prime Minister Modi extended the 21-day lockdown first put in place on March 25. Hours after his announcement, hundreds of migrants started gathering at the Bandra railway station in Mumbai, Maharashtra, defying all norms of social distancing. They were hoping to catch a train back to their villages—except that passenger travel was

grounded throughout the country. Mumbai police had to be called in. They used force to disperse the crowds. The incident led to the arrest of several persons, including a reporter for 'rumor mongering' [23]. Migrants' exodus continued in the country throughout the early months of the pandemic, provoking the Supreme Court to direct the government to ensure 'a daily bulletin through all media avenues to clear the doubts of people within a period of 24 h [24]'. Similarly, fears of inadequate supply of essential products led to panic-buying and shortages of food items and important medical supplies like face masks and sanitizers in many countries [25].

The social repercussions of misinformation have been dire, especially for vulnerable sections of the population. Stigma came to be closely associated with the coronavirus. As the response was evolving, emphasis was being placed on early testing of suspected cases and quarantining infected cases. This gave rise to associated feelings of shame, isolation, guilt, and fear among the general population. Health workers had to bear the sharp brunt of this phenomenon—after initially being venerated as 'corona warriors', doctors, nurses, and other medical staff started facing a backlash from neighbors and communities who saw them as potential virus carriers and spreaders. Several instances of discriminatory behavior, social targeting and ostracization, and even physical assault have been recorded against medical workers across the globe [26]. A similar fate was met by other workers such as aviation staff. Pilots flying stranded citizens to their home countries became targets of similar attacks [27]. In April, the Government of India tightened the law on violence against health workers treating COVID patients, making it a non-bailable offense with a punishment of up to seven years imprisonment [28].

Disinformation

With the scientific community grappling with new and emerging evidence about a novel virus, communication around COVID-19 was bound to get messy. Many rumors and inaccurate reporting were a result of a lack of data from expert sources. But the communications response was also sabotaged by deliberate efforts to vitiate the atmosphere for personal, political, or commercial gains.

One such disinformation campaign was around the origin of the virus. While there is evidence to suggest serious lapses in how China reacted to the emergence of the new virus, conspiracy theorists left no stone unturned to convince the world that this was a case of biological warfare by China against the world [29]. Terms such 'Wuhan Virus' and 'Chinese Virus' found their way into the pandemic lexicon with several news outlets mainstreaming them in their coverage, thereby lending credence to unverified perceptions and triggering a racist backlash against, not just Chinese people, but anyone of East Asian origin [30]. This resulted in vandalism of Asian business establishments, physical attacks on Asian people, racist abuse, and negative propaganda.

A study by the Australia Institute's Center for Responsible Technology published in May 2020 examined the origins and spread of the 'Chinese bioweapon' conspiracy

theory. Analyzing over a million tweets and retweets over 10 days in March 2020, the authors found 30 coordinated clusters promoting this theory. Twenty-eight of these were identified as pro-Trump, QAnon, and/or republican partisan [31].

Among the mushrooming literature on COVID-19 misinformation, several studies analyzing social media content have established a correlation between conservative political views, belief in conspiracy theories, and sharing of fake news [32, 33]. In the US, this was evident as Trump supporters carried out rallies slamming lockdowns and mocking the use of face masks. The interplay between politics, public health, and false information has been a defining feature of COVID, especially in countries like the US, which failed to tackle the spread of the disease at the national level. This politicization was evident in October 2020, when for the first time in its history of two hundred years, the renowned New England Journal of Medicine took an ethical stand against Donald Trump, with a scathing editorial slamming the President's response to coronavirus and calling on the public to use the election to 'render judgment' [34].

The Role of Social Media

The misuse of the information environment for personal or political gain is not a new phenomenon, and the pandemic is symptomatic of this reality of our times. Over the last five years, we have seen the use of misinformation and disinformation, fueled by social media, as a political tool. Various factions across the world, including India, are engaged in an information war, competing for a larger share of the media narrative in an attempt to dominate the discourse and thereby influence public opinion and support [35]. The use of information platforms, especially digital ones, to influence political processes is an emerging challenge that also affects health communications, particularly during a pandemic that has been politicized.

While fake news remains a major threat to societies around the globe even in normal circumstances, in the backdrop of a public health emergency, the largely unregulated world of social media has made the repercussions of such stories nothing less than lethal. From hoax theories about biological warfare and 5G spectrum causing the outbreak to claims about miracle cures, these stories have greatly exacerbated the health crisis, as elaborated above. Building an evidence-based narrative on the outbreak has been one of the toughest challenges for crisis managers.

While bodies like the WHO, health departments, and government agencies incorporated innovative communication tools to leverage digital platforms, the nature of the medium did not always allow the prioritization of facts over myths. Studies in the pre-COVID period have established how fake news spreads exponentially—faster than truth on platforms like Twitter [36]. This has been touted as one of the reasons why social media giants have been less than enthusiastic in responding to demands for a more robust scrutiny of the content they host. But in light of public activism, especially against the backdrop of COVID-19, companies like Twitter and Facebook have altered their policy, placing more value in fact-checking and screening content that contradicts verified public health information [37]. An effort has been made to

work more collaboratively with health organizations in the interest of controlling the pandemic. While these have been important interventions in bridging communication gaps, navigating the information environment has been a continuing challenge.

Responding to the Pandemic Through Communications

As more evidence about the transmission, spread, and treatment for COVID-19 emerged throughout 2020, global and national communication responses also evolved significantly. At the beginning, the novelty of the SARS-CoV-2 virus and the absence of any medical interventions to treat it highlighted the urgency of using non-pharmaceutical interventions—including mask-wearing, social distancing, and hand hygiene—to mitigate the pandemic. The need to promote these interventions on a broad scale has made health communications even more vital.

The Global Response

Global frameworks like International Health Regulations (IHR), set up in response to previous public health crises, guided the early communications. In late December 2019, the WHO country office in China first reported the cluster of viral pneumonia cases to IHR, based on a media report published on the Web site of Wuhan's municipal corporation [38].

Initially, WHO played a central and crucial role in communications around COVID-19 globally relaying information about the risks, surveillance, caseloads, clinical management, and travel advisories. At the country level, governments and public health bodies initiated regular communications about the pandemic when the outbreak spread beyond China's borders. However, even before the outbreak reached other countries, news about the virus had spread internationally, by the Internet and social media. This information influx was more significant than in other recent epidemics such as SARS (2003), H1N1 (2009), and Middle East Respiratory Syndrome (MERS) (2012). As described above, increased penetration of the Internet and accessibility of mass media tools made getting information about the pandemic easier for people sitting in remote corners of the world.

There was one significant problem, however. Due to the novelty of the virus, much of the information being circulated in those early weeks had not been vetted by the scientific community. Limited research data in the age of media in which news spreads at the speed of light made it difficult for governments to communicate quickly and accurately about the pandemic. This gave rise, in many places, to a feeling that leaders and official bodies were not providing information that people needed and wanted, leading them to turn to other, less reliable sources. This dichotomy fueled unease and

led to criticism of the so-called failures of governments and international decision-making bodies to respond effectively. In this environment, half-truths, rumors, and fake news began to sprout and flourish.

As cases began surging in Italy, South Korea, and Iran, governments and public health specialists across the world started communicating regularly, relaying the evidence as it emerged. This is one of the first times in recent history that the highest leadership from countries conducted regular media briefings and played a proactive role in speaking about a public health crisis. Around the same time, WHO ramped up its communications to support countries in dispelling misinformation. The WHO communications strategy included a focus on social media, which was increasingly being used as the primary information source for governments and the public alike [39].

Social and digital media platforms started playing a vital role in communications during the pandemic [40]. Since the disease required physical distancing and people stayed at home, social media also provided people the access and immediacy required to navigate this crisis. News platforms increased their presence on digital and social media, where they could stream information in real time. Various governments, public health bodies, and scientists did the same. As the need for easily understandable data became clear, Johns Hopkins University in the US took the lead in January, quickly creating a dashboard tracking global cases and trends in infection spread. The tracker continues to be the go-to resource for real-time updates for experts and the public worldwide.

Some country leaders used social media and digital media platforms like Zoom, Facebook, Twitter, and others to relay credible information [41]. Behavior change communication activities across the globe are largely been done on social media. Campaigns like WHO's #WearaMask gained traction globally. Similar campaigns by governments in their regional languages also had a significant impact on people. As described above, social media platforms partnered with government agencies and WHO to track fake news around the pandemic and drive its users to portals where correct information is available [42].

One of the critical achievements of the rise in digital media during the COVID-19 pandemic has been the use of tele-medicine as a platform for carrying out essential medical services. Tele-medicine is a service provided remotely to patients for health-related advice, addressing queries, monitoring diseases via a secure connection, and thus, maintaining patient–doctor confidentiality. The COVID-19 pandemic made tele-consultation a necessity, which helped countries build their digital health frameworks and guidelines [43].

Selected Country Responses

As COVID spread across the globe, countries around the world adopted diverse approaches to communicate information around the disease. These responses depended on a wide range of situational, sociocultural, economic, and political

factors, such as the nature and speed of infection in certain geographies, history of public confidence in governments and public health institutions, technological capacity, and resources for communication activities.

Some national responses have been more successful than others. Communication strategies that lack transparency (e.g., China in the initial days of the pandemic) or use contradictory messaging that often flies in the face of scientific evidence (as seen in the UK and US at various points) can lead to loss of public trust in health systems and services that can be difficult to restore. By and large, country-level campaigns that have succeeded in effectively communicating with the public shared some fundamental characteristics: clear, consistent, evidence-based messaging that is communicated in a transparent, relatable way that builds trust while acknowledging human emotion and focusing on people and community, without becoming prescriptive or autocratic. Such messaging can be achieved using both high-tech and low-tech methods as described below.

In low-resource settings such as the Democratic Republic of Congo, where word of mouth continues to be an influential channel of information dissemination, authorities engaged with local community leaders to proactively spread accurate information. Town criers were employed to relay messages around COVID-19 prevention. Based on earlier experiences with Ebola, the government also set up a community feedback system—based on surveys delivered via SMS—to track misinformation circulating among the public and to monitor its spread. A COVID-19 hotline was also set up with support from UNICEF to provide general information about the pandemic [44].

In Vietnam—lauded as one of the countries that have exhibited exceptional leadership in COVID-19 management and response—a similar community-first approach was adopted. The government employed the already existing nationwide system of public loudspeakers to bridge the information gap between the government and the local community [45]. Alongside information on the spread of the infection and the number of cases in the country, officials continuously and effectively shared information through this system about best practices for preventing COVID-19, such as using masks and practicing social distancing. The advantage of this was that not only did this means of information delivery have widespread cultural acceptance, it also helped reach those who had little to no access to technology. The government also enlisted the support of mass organizations such as Women and Youth Unions and Farmers Associations and leveraged their strong networks to help generate awareness in the remotest parts of the country [45].

In Senegal, where Islam is the predominant religion, the government engaged religious leaders to disseminate messaging around COVID-19 prevention, particularly during *Ramadan* [46]. Conversely, countries such as Taiwan and South Korea relied heavily on technology to drive risk communications around COVID-19. In Taiwan, the government extensively used platforms such as Facebook, Instagram, LINE, and Tumblr to disseminate information to the public through the use of chatbots; apps were developed for specific needs such as locating the availability of masks nearby. In South Korea, where over 90% of the population has access to smartphones, information around the pandemic was disseminated through emergency text messaging

systems and real-time contact tracing apps—systems that had been set up after the MERS-related coronavirus outbreak in the country in 2015 [46].

Research by the University of British Columbia (UBC) Center for the Study of Democratic Institutions analyzing the communication responses of nine countries and two provinces in the times of COVID-19 found that a significant contributory factor for effective risk communications was going beyond simple public health information by paying attention to emotions, storytelling, and the cultivation of values [46]. An exemplary approach was taken by the New Zealand Prime Minister Jacinda Ardern, who used video-streaming platforms such as Instagram and Facebook to build an immediate and personal connection with the public. She answered public questions directly, which went a long way in building trust. Her podcast and conversations on COVID-19 featured guests from various sections of society, encouraging them to share their stories of the pandemic, gathering feedback and advice [47]. This two-way, open, and transparent means of communication focused on human stories that reinforced the belief that 'we're all in this together' was instrumental in New Zealand's swift and effective management of the pandemic. Messaging around risk communication in New Zealand emphasized ideas of teamwork and social responsibility. The government also set up a nationwide mental health campaign 'Getting Through Together' that provided resources for citizens' mental well-being.

The Indian Response

In India, communication around the pandemic was primarily through government institutions such as the Ministry of Health and Family Welfare and the ICMR via regular press briefings and press releases. Prime Minister Narendra Modi reached out directly to the public, appealing to their emotions and seeking community participation. Sharing of data and responding to questions were left to the Ministry and ICMR spokespersons. Prime Minister Modi's messaging focused on solidarity and people's participation. He termed the COVID-19 response as a '*Jan Andolan*' (people's revolution) unleashing the hashtag #Unite2FightCorona on social media. Particular emphasis was given to thanking 'COVID Warriors'—frontline health workers, doctors, and public health personnel at the helm of the pandemic response. The government set up a dedicated portal for documenting organization-wide lists of frontline workers and encouraged citizen volunteers to share their stories of fighting the pandemic [48]. Leveraging the increased smartphone penetration in India in the last decade, the government also launched a mobile app in multiple regional languages, named *Aarogya Setu*, to enable Bluetooth-based contact tracing, map hot spots, and disseminate key information around COVID-19. The app logged in over 100 million users, the largest user base for similar apps in the world. Following criticism around non-transparency and potential privacy concerns, the app was made open source in May 2020 [49].

Learnings for the Future

Health communications will continue to play an equally critical role at later stages of COVID-19 as it did in the beginning. Even though the worst may not be over, it is an opportune time to review the lessons learnt so far. Apart from 2020, our learnings can also draw inspiration from past challenges faced by climate change activists and vaccine advocates who have been battling the different elements of an infodemic for years—from politically motivated conspiracy theories to rumors, hearsay, and mala fide propaganda. Their journey has not been very different from those who faced similar challenges in relaying factual information on COVID-19.

The following are some lessons learned through past experiences:

First, the role of clear and transparent communications and guidelines from governments and leaders on their response strategy and what would be asked of citizens if infection rates increase cannot be underscored enough. New Zealand's Prime Minister's response to the pandemic was bold and engendered massive public support. Her strong leadership and effective communications meant that people knew in advance what would be required of them—and they accepted the challenge.

Second, with countries facing second and third waves of infection, pandemic control interventions need to be sustained and require a continuous dissemination of information to promote healthy behaviors. A critical learning is that irreplaceable position of trust and timeliness of relaying accurate information to everyone is important. As we have seen across countries, strategies such as engaging credible and reliable champions, religious and local leaders, and healthcare workers implementing creative public health campaigns to disseminate evidence-based messages and information through traditional and digital media platforms have effectively combatted misinformation, educated communities about healthy behaviors, and enabled the crucial exchange of information.

Third, with the rollout of the COVID-19 vaccine, ensuring that we are equipped to deal with vaccine hesitancy becomes even more critical. In recent times, the rapid spread of misinformation is threatening vaccination programs worldwide. History shows that once public trust in vaccines has been compromised, it is difficult to win it back [50]. This can set in motion a domino effect that not only slows down the response to the pandemic but also refuels a vaccine-hesitancy movement leading to dangerous resurgence of diseases such as measles that were once largely contained. As vaccines and therapeutics across the world start to show results, it is imperative to support this first-of-its-kind rollout and ensure that misinformation about the vaccines' safety and efficacy is consistently countered. While vaccine hesitancy is localized and context-specific and there is no one-size-fits-all approach, communicating the science of vaccines effectively, through trusted champions and advocates, will build confidence and mobilize governments and communities to make effective policy decisions.

Finally, in an age of emerging environmental threats, this is hardly the last pandemic of our times and, therefore, our learnings must extend to future preparedness. Indeed, technology has advanced and will continue to advance exponentially

in the years to come. From the COVID-19 response, it is evident that artificial intelligence, robotics, and several other technological innovations are helping governments to manage and fight this global public health emergency. We need to continue to invest in such technologies in order to be better prepared for the next challenge.

Recommendations

Based on these learnings and GHS's own experience in health communications, we would like to conclude with a set of recommendations to deal with future crises:

Trust the Science

There is evidence that countries that began deferring to scientific counsel early in the outbreak could flatten the curve before others. In a global survey, 25,307 academics and researchers were asked if, in their opinion, scientific advice had guided their country's COVID response. Researchers from New Zealand were most satisfied, while US experts rated their country's adherence to science dismally low [51].

Identify Credible Spokespersons

Taking an informed decision on the ideal candidate(s) to communicate with the public is an important task. While in some countries, this may be the head of the state, in others, it could be the chief scientific officer. A good spokesperson is one the public trusts and who can mobilize communities toward health-seeking behavior.

Be Consistent in Relaying Messages

A message is of value only once absorbed by the audience. It is crucial for outbreak managers and spokespersons to be consistent and frequent in their messaging, repeating, and reinforcing facts regularly.

Leverage Technology

To counter pandemic fatigue, it is important to keep innovating on how information is being shared. Harnessing the power of telecommunications and information

technology, there is scope to create messages and build databases for local or global consumption.

Invest in Digital Literacy

While smartphone penetration has opened doors to an influx of information, the tools to discern facts have not been developed fast enough. Fact-checking web sites have mushroomed to dispel misinformation on COVID, but it is essential to adopt a proactive, rather than reactive approach to counter fake news. While universities and media houses have set up fact-checking initiatives, there is need for a larger government-level push to create a culture of critical thinking and digital literacy.

Sustain Media Engagement

Consistent media engagement by decision-makers is important. They must find ways to sustain media's interest by sharing new information and developments consistently.

Build Inter-Sectoral Cooperation

Just as a health crisis knows no borders, similarly the communication response must take into account the role of diverse stakeholders. A coordinated response that includes international bodies, governments, research institutions, social media firms, and other private sector entities is integral to achieving results.

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