

Personalised healthcare for billions

Communication challenges in the
post covid-19 age



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About this project

Personalised healthcare for billions: Communication challenges in the post covid-19 age is a report written by Economist Impact and supported by WhatsApp. The report reflects the findings from in-depth desk research and interviews with five healthcare communication and digitalisation experts. The report aims to explore the ways healthcare communication has evolved over the pandemic, determine the impact that digitalisation has had on healthcare communication during this time, and consider how this might change healthcare communications in the future.

The findings of the programme are editorially independent, and it is sponsored by WhatsApp. The Economist Impact research team comprised Emily Tiemann, Nuriesya Saleha and Bhagya Raj Rathod. The report was written by Georgia McCafferty, and edited by Emily Tiemann and Maria Ronald.

Economist Impact would like to thank the interviewees who generously offered their time and insights, including:

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- **Setiaji Setiaji:** Chief of Digital Transformation Office, Ministry of Health of the Republic of Indonesia
- **Diego Fernandez:** Secretary of Innovation & Digital Transformation, City of Buenos Aires, Argentina
- **Noella Bigirimana:** Deputy Director General, Rwanda Biomedical Centre
- **Dr Genya Dana:** Global Head of Health Policy, Avellino, and former Head of Health and Healthcare, The World Economic Forum

The findings and views expressed in this report are those of Economist Impact and do not necessarily reflect the views of survey respondents, interviewees or the project sponsor.

Executive summary

Understanding the healthcare communications methods that worked during the covid-19 pandemic, and the new and innovative approaches and digital tools that facilitated this, can help guide the development of an improved approach to healthcare communications in the future. The experience of governments in managing complex healthcare challenges, such as mass vaccinations, while combating misinformation and ensuring data privacy, also provide key insights to guide the development of further digitalisation of healthcare communications and services.

Key findings from this project include:

- **Effective healthcare communications is critical.** Beyond its sizeable physical impact, covid-19 revealed how vulnerabilities in healthcare systems have implications for health, economic progress, trust in governments, and social cohesion. It also highlighted the importance of healthcare communications to overall health among populations, and its impact on trust and national structures.
- **Transformation of healthcare communications requires support.** The need for digitalisation of healthcare communications during the pandemic shows that governments, and public and private healthcare organisations, must drive transformation through funding and access to innovation. This will ensure that the healthcare communications lessons from the pandemic are not lost, and better prepare systems to be resilient in order to respond effectively and help protect lives during future pandemics.
- **Cooperation is key.** As well as funding and guidance, partnerships between different levels of government, between governments and technology companies, and with non-government organisations and stakeholder groups are vital to provide an ecosystem that supports and encourages the long-term positive transformation of healthcare communications.
- **Fundamental communications principles remain.** Digitalisation enables new ways of communicating and engaging with healthcare information and services, but the fundamentals of targeting an audience, crafting reliable, trusted messages, and keeping things clear and simple remain. Humans remain at the heart of healthcare communications, and fostering their development is just as important as improving digital technology.
- **More research is required.** Investment in and development of digital tools like chatbots and telehealth that facilitate healthcare communications and services are expanding rapidly, often without sufficient evidence that these tools are effective. Further research is required into the pros and cons of such services before they are fully embraced by healthcare organisations.

Introduction: A digital tipping point

The end of the covid-19 pandemic has been declared in many parts of the world.¹ But as the disease transitions to its endemic phase, its global impact on societies, healthcare systems and economies continues to reverberate.² Now ranked as one of the deadliest pandemics—and the single deadliest in the history of the United States (US)³—covid-19 has changed the fundamentals of everyday life for billions of people and resulted in the first global decline in life expectancy since the United Nations' (UN) records first began in 1950.⁴

Beyond the sizeable physical impact, covid-19 showed how vulnerabilities in healthcare systems have implications not just for health, but for economic progress, trust in governments, and social cohesion. It has also highlighted the importance of healthcare communications, and its comparable impact on national structures.

Within weeks of the World Health Organization's (WHO) designation of covid-19 as a pandemic on 11 March 2020, billions of people across the world were confined to their homes, either



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Ministry of Health of the Republic of Indonesia

through government directives or fear, while economies, businesses and employees had to rapidly adapt to functioning remotely or put in place protective mechanisms that enabled safe in-person work.

As a result of the suspension of normal life, the demand for information exploded. Desperate to learn about the potential impact of the disease and how to prevent it, people turned to the internet and social media for answers. News consumption across digital platforms surged.⁵ These platforms also became critical for people to work and access food, for children to be schooled, and to maintain connection with family and friends.

The rapid growth in digitalisation that occurred because of the covid-19 shutdowns has been one of the more significant and wide-reaching societal and economic impacts of this pandemic. Termed by some as The Great Acceleration,⁶ this growth in digital technology has been accompanied by a massive expansion in mobile capabilities. In 2021, the number of mobile internet subscribers reached 4.2 billion people globally, and operators’ investment in network infrastructure over the past decade has reduced the coverage gap for mobile broadband networks from 33% of the global population to just 6%.⁷

Globally, more than two-thirds (67%) of people— or 5.3 billion— have mobile phone subscriptions.⁷

As a result, digital technologies that utilise mobile networks became vital avenues for governments and healthcare organisations to share information during covid-19. It enabled them to directly provide people with guidance and advice on symptoms, facilitated access to medical treatment, and collected data to help guide policy decisions.⁸

Hindsight can be a powerful tool, and the ways in which countries and healthcare organisations used digitalisation to manage communications during the pandemic provides a unique opportunity to learn from these experiences and build better healthcare communication tools for the future. It is also an opportunity to focus on how technology can improve healthcare access and equity for regional and marginalised groups in the long term.

“The innovative use of technology in health communications has helped us a lot during covid-19, but in the future, it is going to be even more useful as we leverage technology to deliver universal healthcare for all,” explains Shri Abhishek Singh, President & Chief Executive Officer of NeGD and MyGov and Managing Director of the Digital India Corporation.

“We learnt from the crisis that integrated data and technology are key to building a nation’s health resiliency; a transformation after a crisis is needed,” adds Setiaji Setiaji, Chief of the Digital Transformation Office at the Republic of Indonesia’s Ministry of Health. “There needs to be an effort to accelerate the transformation of health and ensure that all services are more resilient,” he adds.

Crisis communication

During crises like covid-19, the role of governments—and the policies that guide them—is critical for healthcare communications. Clear messaging, credible information, timely updates, and meaningful collaboration increase public trust in a government’s ability to manage a crisis, as well as promote social responsibility and resilience. It was something many countries realised quickly and acted upon during covid-19.

In Indonesia, the media started informing the public even before covid-19 had been found in the country,⁹ while the governments of India (see page 13) and Argentina (see page 16), intervened early with education programmes that targeted public health officials and journalists, as well as the public.

Diego Fernandez, Secretary of Innovation & Digital Transformation for the City of Buenos Aires, says keeping officials and journalists informed ensured that the key people sharing messages outside of the government realm had a solid understanding of the symptoms and treatment of covid-19, and knew where to quickly find updated and reliable information when needed.

Mr Singh adds that it was also important to ensure that there was a holistic approach across a (sometimes) complicated government

bureaucracy. “Healthcare communications needs to be taken up in a holistic manner. One needs to examine the multiple factors that lead to helping people have good health, and it requires consent from multiple departments with the objective of adopting a unified approach,” he explains.

These early-stage strategies relied on traditional media channels and methods, such as press briefings and face-to-face communications. Every healthcare leader interviewed also stressed the need for relationship-building programmes with trusted community, religious and ethnic leaders.

“Effective communication is really about relying on trusted community-level networks and institutions and situating whatever it is that you’re communicating within the context of existing programmes and priorities, and the things that are most important to people on the ground,” says Dr Genya Dana, Global Head of Health Policy at Avellino, a US-based genetic molecular diagnostics and precision medicine company, and former Head of Health and Healthcare at the World Economic Forum.

Noella Bigirimana, Deputy Director General of the Rwanda Biomedical Centre, the national health implementation agency in Rwanda,¹ adds that collaboration with suitable partners to help disseminate healthcare information was also

¹ Ms Bigirimana notes that her quotes are her own opinion and do not represent the views of the Rwandan government.

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critical for the Rwandan government to combat misinformation during covid-19 by building understanding and trust in communities.

“As you are implementing these programs, it’s about making sure that you keep the communities and partners aware of what’s happening, and proactively combatting any wrong information that is out there,” she says, noting that the government also relies on these groups for feedback on what is happening on the ground to improve or pivot communication programmes.

“We learned some really hard lessons [during covid-19] about the way that science and advances in science are communicated,” adds Dr Dana. “However, uncertainty around what we did know was not well-communicated, and when new information emerged, messaging was not well-corrected.”



Digital solutions

As the pandemic progressed, and communication challenges like misinformation became more complex, digital solutions filled an important gap. They facilitated contact tracing; enabled governments to provide information, answer questions, and correct falsehoods more easily; and provided access to medical care and pharmaceuticals for people in lockdown.

Digital and social media platforms like Twitter, Google and Facebook became an important avenue for many governments, non-government organisations (NGOs) and healthcare organisations to distribute messages, sometimes via organic posts and ad campaigns. These platforms were also used as data sources to model pandemic trends and monitor the evolution of patients' symptoms or public reaction to the pandemic over time.¹⁰ Short message service (SMS) messages and private messaging platforms were also widely utilised, due to their convenience, their ability to create personal connections, and because they have the ability to protect sensitive healthcare data and hence promote trust.

As governments and healthcare organisations like the US Centers for Disease Control and Prevention (CDC) and the WHO needed to update the public with new and rapidly changing

information on the virus, chatbots became a highly popular and effective way to reach people directly. More than 1,000 coronavirus-specific chatbots were estimated to have been launched across various messaging platforms,¹¹ while the WHO's covid-19 chatbot is estimated to have reached 4.2 billion people by the end of 2020.¹²

Chatbots were also used in many countries to triage the severity of covid-19 cases to reduce the strain on hospitals, while remote patient-monitoring platforms enabled people with covid-19 to receive care at home, freeing up hospital beds for more critical cases.¹³ Together, chatbots, SMS and private messaging platforms were also vital for contract tracing and for global vaccination efforts, with governments and NGOs using them to provide vaccine information, schedule vaccination appointments, and to provide proof of vaccination.

Telehealth also grew rapidly across the globe. In the US, for example, telehealth consultations in lieu of office visits and outpatient care were 78 times higher in April 2020 than in February 2020.¹⁴ Tools based on Artificial Intelligence (AI), big data analytics, and mobile tracing apps for surveillance, were also widely employed to diagnose, prevent, monitor and treat individuals worldwide.

Barriers to change

Access to the internet and mobile telephone services is critical for these new methods of communication to work, but during the covid-19 pandemic, the digital divide emerged as the single largest barrier for these tools to reach the entirety of a population.

Well over one-third (40%) of the world's population still has no access to the internet,¹⁶ while countries like India (50%), Ethiopia (81%), and Brazil (29%) have significant portions of their population that are classified as "unconnected".¹⁷ In developing countries, only 45% of mobile phone users have access to a smartphone.

Investment in network infrastructure over the last decade has helped shrink the coverage gap for mobile broadband networks from one-third of the global population to just 6%. But the adoption of mobile internet services has not kept pace with the expansion of network coverage. This has resulted in a significant usage gap of 41% of the global population in 2021, or 3.2 billion people.⁷

It is not just access to mobile or internet services either—digital literacy can be a significant challenge in many countries, rich or poor, and prevents people from having the ability to access tools that are often life-saving.

"There is a significant gap to fill in the digital literacy among many Indonesians and also infrastructure," says Mr Setiaji. "But the

government cannot do this alone. We are building an ecosystem for health information that brings in all stakeholders and technology companies together to try to solve this."

Ms Bigirimana says it is also important to keep digital health solutions simple to overcome these problems. During covid-19, for example, she says Rwanda made extensive use of social media that could be accessed on regular telephones, facilitated a mobile phone donation program to improve penetration, and implemented a mobile phone-based virtual care system through *WelTel Health*, which serves as a remote monitoring platform using SMS messages.¹⁹ As a result, the number of patients in Rwanda treated through the digital health system grew five-fold between 2020 and 2021.²⁰

Mr Fernandez says emerging countries like Argentina face two challenges: internet accessibility, both in terms of signal and affordability, and the lack of inter-operability between information systems. "Today, we are a digitalised society, but we are not yet a digital society. We are structured in digitalised silos and this issue affects humanity as a whole" Mr Fernandez says.

Dr Dana agrees that connectivity issues are a huge challenge for healthcare communications, and for societal advancement in general. However, she highlights that the problems lie not just with the standards of interoperability

between devices and platforms, but also between organisations and countries. “Someone who’s practicing medicine in one part of the US typically cannot offer healthcare or mental healthcare to someone outside of that particular state [due to regulations].²¹ Those are huge barriers,” she explains.

Keeping up with the sheer volume of data generated by digital communication in large countries like Indonesia can also be a challenge, according to Mr Setiaji, who says this is compounded by the fact that many healthcare facilities are yet to digitise and still rely on paper records.

Ensuring that people trust digital communications is also problematic for many countries, with a need to balance digital tools with personal outreach, especially in countries like Rwanda that have both a digital divide and lower digital literacy than average.

“It’s about building understanding and trust in the communities,” Ms Bigirimana says of the Rwandan government’s approach. “As you are implementing these programs, it’s about making sure that you keep the communities, as well as the partners that have joined or are helping to implement these activities, very much aware of what’s happening.”

However, of all the barriers to further adoption of digital technology to improve healthcare communication—finding financial resources to fund new innovations, addressing data security concerns and identifying the right technology partners—the biggest challenge is finding the right talent for his teams in the face of a global talent shortage,²² says Mr Singh.

“Building at that scale requires having the right architecture and robust infrastructure, which requires having the right people to design a project,” he explains.



Country spotlights

Indonesia

Indonesia's experience with implementing healthcare communication programmes during covid-19 aptly illustrates how geographic and social structures can prove difficult barriers to effective dissemination of reliable information.

Covid-19 impacted every level of Indonesian society, says Mr Setiaji, and in a country of over 237 million people²³ from over 300 ethnic groups²⁴ who live across an estimated 6,000 islands,²⁵ effective communication can prove

challenging. The Indonesian health system also has a mixture of public and private providers and financing. The public system is administered in line with the decentralised government system in Indonesia, with central, provincial and district government responsibilities,²⁶ which adds to the complexity.

The first covid-19 cases in the country were confirmed on 2 March 2020, and the capital, Jakarta, went into lockdown on the 20 March to try and break the chain of transmission.



Before any formal government healthcare communications programme could begin, the mainstream media started educating the public about the disease and disseminated information about covid-19 through multiple platforms including social media, online media, and mass media. The most popular sources of information on preventive measures among the Indonesian population were social media (83.6%) and television (78.5%) according to the WHO.⁹

Once the seriousness of the pandemic became clear, the Indonesian government stepped in and implemented a public communications programme using multiple channels, including a chatbot function. Over 2.6 million messages were sent to Indonesian citizens during the first hour of its initial launch.

As the Indonesian government became aware of the scale of the spread of misinformation that was hampering covid 19 prevention efforts, they actively pursued partnerships with digital technology based companies and social media influencers to better disseminate information, and to be able to target their messages to certain populations.⁹

Mr Setiaji says that embracing digitalisation in Indonesia was important to their healthcare communication efforts, but the person who delivers the message is equally important to ensure that people trust the information. As a result, coordination among stakeholders to identify appropriate and trusted spokespeople was vital.

Good healthcare communications “means not targeting only a few categories of audience, it must be all categories. And every category of our audience must have their own key opinion leaders, whether that be among religious groups or doctors or celebrities or political leaders,” Mr Setiaji explains. “We strengthened coordination

among stakeholders, and optimised use of technology for health services, such as the use of big data analysis.”

However, a lack of infrastructure and a gap in digital literacy in some rural and regional areas of Indonesia meant that the Ministry of Health had to think carefully about the way technology was deployed. They ensured the applications were simple and user-friendly, and primarily relied on tools that people were already familiar with.

Together with on-the-ground programmes that armed community leaders with the information they needed to help people with questions and advice, it ensured that almost every person across this vast nation was able to access the information they needed. “We had the applications that we made sure were easy to use, but we also worked together with the community to communicate to these people or to help if there was any difficulty,” Mr Setiaji says.

India

In India, sharing the right information during the initial phase of the covid-19 pandemic was as important as the mass vaccination programme the country undertook, according to the head of the government’s Digital India Corporation. “Communication is the core of public policy, whether it’s healthcare or any other citizen-centric or government initiative,” explains Mr Singh. “The entire focus of the government then—and now—was ensuring the right communications with regard to the nature of the virus.”

Managing healthcare communications during a pandemic across a country as large and diverse as India, however, was never going to be easy. With the world’s second largest population of 1.39 billion people²⁷, India has multiple languages—the constitution recognises 22

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“scheduled” languages, and the 2011 census identified an additional 99 “non-scheduled languages”, each of which has dialects.²⁸ And although universal healthcare is enshrined in the Indian constitution, in practice, each of the country’s 28 states is responsible for coordinating and delivering healthcare services, with quality and access varying markedly across the country.²⁹

The first wave of covid-19 devastated India; more than 44.5 million cases of covid-19 and 528,745 attributed deaths have been reported to the WHO to date, although these numbers are believed to be grossly underestimated.³⁰ However, as a sign of the positive impact that targeted healthcare communications can have, India has administered almost 2.2 billion vaccine doses as of 3 October 2022.³¹

Mr Singh says that the Indian government’s communications strategy evolved over time. Initially, the focus was on stemming transmission through basic education, including alerting healthcare professionals and citizens to the symptoms of covid-19 and the best way to protect themselves. During periods of lockdown, it was also important to let people know the rules to prevent spread of the virus, and how they could manage medical emergencies and access telemedicine.

It required ensuring local governments understood the importance of having the right language for the right people and that communications could be translated into dialects, where necessary. It also involved teaching officials, and the broader population, the meaning of some of the language that was being used, particularly with respect to the pandemic. “‘Quarantine’ is a word which has now become part of our lexicon, but in February 2020, nobody knew what it meant,” Mr Singh explains.

As the pandemic evolved, so did the government’s communications challenges. Many covid-19 cases can be asymptomatic, making it hard to convince people of the need to stay home even if they didn’t feel sick, so the government developed a contact tracing app available in 11 different languages, and worked with state governments to implement its use to better manage cases.

As with other parts of the world, the spread of misinformation compounded the problems. “These became very big communication challenges. All kinds of myths started spreading. So myth-busting and trying to fight fake news becomes another big challenge in fighting such a pandemic,” says Mr Singh.

Once vaccines became available, Mr Singh said an entirely new approach was required to encourage people to get vaccinated, and to fight the spread of misinformation around the vaccines themselves. “The challenge was the complexity of the messaging. There are multiple vaccines, and multiple intervals between various doses, and we needed to ensure that people who were eligible would actually take the vaccine, and then remember which vaccine they were taking. And we were covering the entire population of 1.3bn people,” adds Mr Singh.



The Indian government turned to digital communications to help overcome some of these challenges. They created a covid-19 space on the MyGov platform to help disseminate information and ordered all telecommunications firms to make a 30-second audio clip on the virus and used that to replace the ringtone that people hear when making a phone call to any mobile phone number.

They also partnered with technology company WhatsApp to rapidly create and deploy a bilingual covid-19 chatbot on an encrypted private messaging platform.³² Launched at the beginning of the first wave of covid-19, this was initially only used for the dissemination of information, but it soon became the most authoritative source of truth for all covid-19 related information in the country. During the second wave of the virus, the chatbot was expanded to provide citizens with information about the availability of hospital beds, oxygen, medicines and food. It was again expanded to add a vaccine booking facility and vaccine certificate downloads.

Importantly, on 25 March 2020, the Ministry of Health and Family Welfare also issued the first formal telemedicine guidelines.³³ Telemedicine has now become very popular; this is demonstrated by the fact that the

national service “Sanjeevani” provided 170,000 teleconsultations in just one day in March 2022.³⁴

Telehealth provided people with access to medical advice and treatment during the lockdowns, but beyond that, it has also helped grow healthcare access for people in rural and remote areas of India. And although there are problems with some parts of India either not having the necessary infrastructure or the digital literacy to access these services, Mr Singh says that the government’s Bharatnet programme, the world’s largest rural broadband project, is working to provide connectivity to villages across India, including connecting local schools, hospitals and child care centres; in turn, or Anganwadi,³⁵ is another programme that will enable the government to implement even better digital health services in rural India.

Argentina

Argentina was facing ongoing economic challenges and a fragile health system when the covid-19 pandemic was first detected in the country on 3 March 2022. Traditional communication tools used at the beginning of the crisis, but the expansion of existing and new digital communications platforms were critical to the nation’s ability to respond and adapt to the crisis.

“As the pandemic grew, the need for information exchange became much bigger.”

Diego Fernandez, Secretary of Innovation & Digital Transformation, City of Buenos Aires, Argentina

At the start of the pandemic, traditional media was key to reaching Argentina’s population of over 45.8 million people³⁶. The Ministry of Health and the Argentine President, Alberto Fernandez, provided consistent, updated daily reports on the situation, and implemented lockdowns and health recommendations to slow the spread of the virus. The government also worked closely with journalists, as well as national and provincial authorities, to increase their understanding of covid-19, and to create consensus on the healthcare messages provided to the population.³⁷

These messages, and other health measures, were promoted through traditional media channels like television and newspapers, and a telephone and messaging helpline service was established; the government also embraced infographics to provide visual guides, targeted at health professionals and citizens, that were physically displayed in hospitals and public places and used on government websites and apps to help citizens identify symptoms and to know when to self-isolate.^{38, 39}

Argentina has 24 provinces, and therefore the national government’s engagement with provincial governors and municipal mayors, political parties, public health experts, trade unions and community leaders were also key to helping the nation navigate the pandemic.⁴⁰ “In critical healthcare situations, one-on-one communication in government is more effective than other types, such as advertisements in social media or Twitter,” explains Mr Fernandez.

Argentina’s comparative success in building community engagement for its covid-19 strategy has been commended by the WHO, which lists “effective communication with the public...such that the population was more prepared when measures were actually implemented”⁴¹ as one of five key actions that helped slow transmission of the virus in the country.

As the pandemic progressed and healthcare communications needs became more complex, digital technology became a vital enabler, and many examples emerged. An existing cash transfer program was expanded to reach vulnerable populations and prevent potential social tensions during lockdowns; a symptom tracking app was developed and promoted; and telehealth consultations and digitalisation of prescriptions and pharmaceuticals ensured citizens had access to medical care.

“As the pandemic grew, the need for information exchange became much bigger,” explains Mr Fernandez. To this end, the Buenos Aires government’s generalist chatbot, called “Boti”⁴², was harnessed for covid-19 purposes and re-programmed to provide answers to pandemic-related questions. Launched in 2016 to provide public services information to the population of Buenos Aires, the chatbot was already popular, but it received a record high of 40,662 queries for symptoms of coronavirus between 14 and 31 March 2020.

Boti was also programmed to provide digital triaging to conserve health system resources and prevent the spread of the virus, and it referred 4,921 suspected covid-19 cases to emergency medical care in the same period.⁴³

“Many distinct information requests were pertinent to a specific age or gender group related to the disease. And the norms defining these questions kept changing as the pandemic progressed. Digital media enabled us to target these populations and manage changing parameters,” says Mr Fernandez.

Lifelong transformation

Although the digital divide is a significant challenge, it is not deterring most countries from pursuing growth in digital health communications. In fact, covid-19 has highlighted that these problems exist in both developed and developing countries, and is spurring change across geographic and resource contexts.

Many governments, NGOs and technology companies are working together to improve infrastructure and grow digital literacy in order to expand digital healthcare communication initiatives, and adapt existing programmes so they are more user-friendly. “The entire transformation that has happened in the healthcare sector has pushed the digital health agenda much further and faster than would have happened otherwise,” explains Mr Singh.

In Indonesia, Mr Setiaji says the government sees covid-19 as a catalyst to further drive digitalisation, and it is adapting its regulatory approach as a result. The end goal is for Indonesia to use technology to deliver medical care and advice that is targeted to individuals, by using the data and information that digitalisation unlocks to implement precision medicine and personalise communication and apps so they can deliver more effective information to each person.

“We have a vision of a strong digital health system that is able to provide health services to all Indonesian citizens, wherever they are,”

explains Setiaji. “We want to record all the digital health data from early life, as soon as a baby is born. And then after this, we can monitor the growth of the baby and the health of the mother, and use these medical records over time to develop a more precise approach to the healthcare they receive,” he says.

This approach to using digital healthcare tools for lifelong care is something many governments are now pursuing post-pandemic. Mr Singh says India now has a national program in place to bridge the digital divide, is working on regulatory reform to make digital healthcare and communications regulations “more adaptable,” and developing a sandbox system that would enable technology companies to test new digital health and communication tools.

In the long term, he says the government is working to extend its digital healthcare services to enable communications in multiple languages, build in voice interfaces, and have more video content, with the aim of eventually having a system that can provide advice throughout one’s lifetime. “We aim to make tools simpler and more accessible and use digital technology to ensure every Indian has access to all the right information. We began with covid-19, but now that effort has spread to other healthcare areas,” says Mr Singh.

Lifelong approaches like this can be particularly helpful for people with chronic conditions like



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diabetes, asthma, and heart disease⁴⁴ as they can provide people with a more independent life and reduce hospital admissions.⁴⁵ This, in turn, reduces the burden on public health systems.

Chatbots would appear to be a key tool for the future of such healthcare communication. They operate on multiple existing platforms like SMS and private messaging apps, which makes them accessible, and they can also be personalised, carry multimedia content, and use natural language processing (NLP), which allows them to be adapted for many languages.⁴⁶ End-to-end encrypted messaging platforms, which many chatbots utilise, could also provide built-in data protection.

These benefits have seen public health policymakers rapidly increase their use of chatbots in healthcare—the global healthcare chatbot market was valued at over US\$103m in 2021 and is expected to reach \$US448m by 2027.⁴⁷

However, Dr Dana warns that any government or organisation investing in new healthcare information technology needs to choose carefully as “the jury is still out” on just how successful some of it will be. Although there has been an explosion in the delivery of, and investment, in telehealth services, tracking, monitoring, and healthcare information tools, she says there’s been very limited peer reviewed information or studies to understand the “long-term effectiveness of delivering information in this way”.

“When it comes to something like delivering mental health services digitally, there was a project we worked on at the World Economic Forum that found that only 10% of something like 10,000 different applications had any peer reviewed evidence that they were meeting meaningful health outcomes,”⁴⁸ explains Dr Dana. “The space is awash with investment and tools, but I think a lot of them are going to vanish at some point, because they’re simply not effective.”

These concerns extend to the effectiveness of chatbots, with studies that note that chatbots are being embraced without sufficient evidence for their ability to improve healthcare communications.⁴⁹ Often, these programmes are also only as informed as the AI programming behind them and while many can help with the self-diagnosis of minor illnesses, the technology is not advanced enough to replace visits with medical professionals, who are far more experienced than a chatbot, no matter how powerful the AI or platform that drives it.⁵⁰

Key learnings

The accelerated shift towards digitalisation that has occurred due to the covid-19 pandemic has created a unique opportunity for innovation in healthcare communication. As the peak of the covid-19 crisis subsides, there is a valuable opportunity to learn from the recent experience of others to advance healthcare communications rather than fall into old patterns of behaviour. Not only could these lessons help protect populations during pandemics in the future, they might also increase general access to healthcare for marginalised populations.

Other key learnings from this paper include:

- **Keep things simple.** People are anxious during crises like covid-19, so they need communication channels they can easily access and rely on. By using a mix of traditional and social media that people are already comfortable and familiar with, and adapting them to incorporate local languages and target specific audiences with specific messages, governments and healthcare organisations can communicate more effectively with a population and ensure access and equality for marginalised or rural and regional populations. Simple voice and text tools that run on mobile-only platforms would be a valuable consideration.
- **Trust is the best tool to combat misinformation.** Misinformation is a health threat that will never be completely eradicated. But by building relationships with respected and reliable community representatives, relevant stakeholders, and religious and ethnic leaders, and by being open and transparent with journalists, governments and healthcare organisations can better counter such misinformation and build trust. They also need to be prepared to provide immediate and clear guidance and reasoning when medical advice changes.
- **Partnerships are vital.** Healthcare organisations need to pursue partnerships more actively with technology and communications companies to ensure they have the right tools for the right audience, as well as find ways to bring state or provincial governments and stakeholder groups together. Every expert interviewed for this paper emphasised the importance of working collaboratively across governments, multiple stakeholders, and with technology and healthcare groups to innovate in digital healthcare communications.
- **Be flexible and learn from others.** The WHO notes that one of the keys for Argentina's success in managing covid-19 was its ability to implement an adaptive strategy that involved "learning by doing" in a very dynamic, uncertain situation, adjusting constantly to the unintended consequences of the mitigation measures and learning from experiences elsewhere. This is an approach that can easily be replicated by any country.
- **Address the digital divide.** The digital divide is the single biggest barrier to effective healthcare communications and the advancement of healthcare across the full spectrum of nations, regardless of their levels of income, post covid-19. Countries like the UK,⁵¹ the US⁵² and Australia,⁵³ all face access issues with regards to the internet caused by poverty or location, or from a lack of digital literacy skills, or both. The situation is often more critical in lower-income countries. Government programmes to combat this are in place in many countries, but it is in every technology company's interest to assist these programmes with funding and expertise.

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