



# The Development of New Technology Related to Health Information and Communication During the Covid-19 Pandemic

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**Abstract.** The Covid-19 pandemic is a health problem for the entire world and occurs in both developed and developing countries such as Indonesia. The government plays an active role in carrying out prevention and control efforts. Information technology has been used to monitor pandemics, detect, carry out early warnings, and carry out prevention and control. During the Covid-19 pandemic, a lot of individuals greatly require information and communication technologies concerning health. Utilizing information technology can reduce crisis damage and help manage epidemic risks and adverse impacts. Today, a range of digital technologies can be employed to support and improve public health, education, and work practices. Technology is crucial to maintaining community activities during the Large-Scale Social Restrictions caused by the Covid-19 pandemic (PSBB). The goal of this study is to create health-related information and communication technology that may be used for medical procedures during the COVID-19 pandemic as well as a medium for widespread social restrictions (PSBB) or work from home (WFH). In light of this, it can be said that as new technologies are developed, individuals can utilize information and communication technology to carry on with their activities to its facilities and characteristics, which are advantageous and practical for use by a variety of users.

**Keywords:** new technology · health information · Covid-19 pandemic

## 1 Introduction

The COVID-19 pandemic, which has affected many nations, is turning out to be worse than the serious economic, geopolitical, and political issues worldwide. The use of information and communication technologies has been impacted by the corona virus outbreak and continues to be so. The government aggressively undertook thorough and stringent prevention and control measures during the Covid-19 outbreak to immediately bring the outbreak under control. The public has been left perplexed by the exceptional pace of change brought on by social distancing rules that have been put forth by the relevant ministries and health authorities. [1] Labor from home (WFH) is a method for some people to resolve conflicts, but others may not be as fortunate. All activities, such as studying or working outside the home, are considered forms of work [2].

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The Covid-19 pandemic is a test of the resilience of a nation. People survive in very deplorable health conditions, death is rampant everywhere. The unequal distribution of health facilities in each country makes the death rate increase. This problem not only highlights the shortage and unequal distribution of infrastructure in the sectors of health laboratories, testing, and vaccination in many countries, but also the availability of hospitals and medical professionals. Similarly to this, everyone's health is a top priority for both individuals and society during the current Covid-19 pandemic that has affected practically all nations in the world.

In the economic field, the crisis due to the Covid-19 pandemic has developed in such a way and caused a global economic contraction. The drastic reduction of various global economic activities in turn is expected to result in many people losing their jobs and falling into poverty.

2020 was a tough year for the world when the Covid-19 outbreak appeared, which initially appeared locally in Wuhan – China, then spread and ravaged the joints of the world economy. Global data as of June 2, 2020, shows that 6,140,934 people from 216 countries have confirmed the Covid-19 outbreak and 373,548 of them have died [3]. Meanwhile, Indonesian data indicates that there are 27,549 people spread across 34 provinces who are positive for Covid-19, and 1,663 of them have died. When Covid-19 began to emerge at the end of 2019 and began to plague and explode locally in China at the end of January 2020, then spread throughout the world from February to the end of May, none of the world's think tanks and strategic thinkers (both from government, private sector, universities, as well as the World Bank and IMF) take it into account, so that the economic outlook for 2020 and the years after is still predicted with normal assumptions.

The development of the health crisis that has had an impact on the world economy has practically forced all countries in the world to retreat from the strategic plans that had been previously set to be replaced by emergency response policies by mobilizing all resources to overcome the Covid-19 outbreak. Think tanks and strategic thinkers are correcting their projections, especially in 2020 which is likely to see a slowdown, recession, and even an economic depression.

A series of 3Ts (testing, tracing, and treatment) for persons suspected of having Covid19 can be used in this situation to reduce risk factors and uncertainty. However, Indonesia still ranks quite highly in these three categories. For two reasons, namely medical reasons and social reasons, the Covid-19 pandemic may come to a stop. Medical research has discovered vaccines that can provide people immunity to this virus or a reliable strategy to prevent it. Socially, though, the pandemic won't cease until society has reached a point where the dread it has been experiencing as a result of the pandemic has worn off and people have made the decision to start accepting danger.

As a result, certain measures must be taken to reduce the risk of ending this pandemic socially, which cannot be avoided. These include improving public health capacity for conducting 3T (testing, tracing, and treatment) and guaranteeing that medical personnel is evenly available throughout Indonesia. Indonesia still has several restrictions in this area. For instance, compared to the current needs, the number of facilities that can treat Covid-19 patients is still quite minimal. Although the Covid-19 pandemic's present focal

point has extended to numerous other locations outside of Java, its presence is also more concentrated on the island of Java.

The new normal [4], also known as coexisting peacefully with COVID-19, is another approach. Living according to the “new normal” or “living in peace with Covid-19” means carrying out various socioeconomic activities while also putting various action measures in place to reduce the danger of transmission. This entails adjustments to daily routines and habits in a variety of social activities, including traveling, working, studying, and shopping. There are also guidelines for having to submit to a polymerase chain reaction (PCR) or rapid tests that have been issued by the Task Force for the Acceleration of Handling Covid-19 in this new normal era for interregional workers. So don't be surprised if then many cancel their activities, including airlines that also cancel flights.

The existence of a new normal makes many parties have to adapt. Especially the adaptation of health protocols and work environment. To meet these needs, technology [5] is needed that supports and accommodate the community in carrying out their work activities. With the advancement of technology, will it make it easier to adapt to the new normal? Furthermore, the extent to which technology supports the dissemination of health information.

## 2 Discussion

The creation of new technology for communicating and sharing health information while working from home during the COVID-19 epidemic. The response to the COVID-19 outbreak has been significantly aided by information technology. Information technology is utilized during the entire epidemic, including for close contact tracing, remote diagnosis, and the prediction of pandemic patterns. During the Covid-19 outbreak, government institutions encouraged the provision of health insurance services, which significantly boosted the community's use of hospitals. The rapid increase in confirmed cases and fatalities from the epidemic has caused psychological problems, such as worry and melancholy, in both medical professionals and the general public.

The global Covid-19 pandemic situation is quite bad, and managing the outbreak is a very difficult challenge. Therefore, Work From Home is a term introduced by the government, as a directive so that workers and business owners can continue their work in the office and move to their respective homes to suppress the spread of COVID-19. Work from home (WFH) is a concept that allows employees of a firm to complete their tasks from any location, at any time, using cutting-edge technology like cell phones or computers, all without leaving their homes or places of employment. Virtual meeting technologies [6] like Whatsapp group applications, Zoom, or Google Meet are some of the technologies that can be used during WFH.

1. The Zoom app has the following benefits: (a) bufferless video calls with auto-adjustment; (b) clear audio calls that can be recorded for later listening; (c) Conference calls, which may easily accommodate ten or more parties without sacrificing quality, (d) Screen sharing is simple to use, and you can select which window or monitor to share. (e) You can quickly organize events, export them to a calendar, and then invite people to them.

2. The advantages of using the Google Meet [7] app are (a) It's free. (b) Integrates with G Suite. (c) Group video calls. (d) Gmail server integration. (e) Great for making phone calls. (f) Can be recorded for future review. (g) Easy-to-use mobile application. (h) Can save chats for future reference. (i) Easy to add and delete contacts. (j) Delivery of messages in a short time.
3. Using the Whatsapp app has the following benefits: (a) It is free to use. (b) Send messages directly. (c) Simple to use (d) Support for voice calls and video calls is offered. Send to anyone in (e). 100 MB or less for document files like PDFs, etc. (f) offers end-to-end encryption features, which greatly increase the security of communications. (g) Expand its offerings to include desktop systems and a live web browser (Windows, macOS).

The most exposure occurs during patient care for healthcare professionals working in hospitals, particularly in negative pressure isolation units. Not medical personnel, but rather robots are being designed to do the most hazardous tasks on Covid-19 patients. Medical professionals can be safeguarded by robots during operations. Robots can help with a variety of functions, including real-time monitoring, early detection, and disinfection, that can help stop the spread of infections.

### 3 Conclusion

Several nations dealing with the Covid-19 outbreak ought to think about utilizing health information technology in their public health efforts. The Covid-19 pandemic is a problem that affects all of mankind, and as it expands, health information specialists from all nations must cooperate and share their experiences. To strengthen the response to the present Covid-19 outbreak and upcoming public health emergencies, we should jointly investigate a comprehensive information technology response architecture.

Utilizing information technology can reduce crisis damage and help manage epidemic risks and adverse impacts. Today, a range of digital technologies can be employed to support and improve public health, education, and work practices. Technology is crucial to maintaining community activities during the Large-Scale Social Restrictions caused by the COVID-19 pandemic (PSBB). In light of this, it can be said that as new technologies are developed, individuals can utilize information and communication technology to carry on with their activities thanks to its facilities and characteristics, which are advantageous and practical for use by a variety of users. Particularly during the COVID-19 outbreak in the health sector.

The application demonstrates how crucial health information technology is to combating the Covid-19 outbreak. To effectively combat this epidemic, it is thought that the information technology community in the health sector of all nations must move swiftly and utilize health information technology to the fullest extent possible. The ability of nations and governments to respond to pandemics before they turn into hazardous pandemics depends in large part on advancements in technology that can detect outbreaks of infectious illnesses. In conclusion, to support the management of COVID-19, the public must fully utilize the advantages of information technology.

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