

## COVID19 PANDEMIC: MANAGEMENT AND GLOBAL RESPONSE

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### Abstract

**Introduction:** 2019-nCoV as the term for the new coronavirus that causes outbreaks of pneumonia in Wuhan City, central China by the World Health Organization (WHO), on June 28, 2020, to confirm as many as 9,843,073 cases globally. Therefore, efforts to be made to prevent the spread of this virus must be done immediately and very urgently. The purpose of literature is to discuss the global response to Covid19 and find prevention strategies in the form of non-pharmaceutical interventions (NPIs) or non-pharmaceutical interventions. **Discussion:** This literature review using PICO and PRISMA techniques in extracting the research data based on inclusion and exclusion criteria of several articles on the Database PubMed, Science Direct, and Wiley Online. The readiness of the Government, both in conducting initial screening (Rapid test), readiness of referral hospitals, limiting areas and activities as well as awareness of citizens in implementing new habit adaptations, namely wearing masks, maintaining distance and washing hands regularly are the keys to preventing the spread of the Covid19 virus. **Conclusion:** articles search from multiple databases, with filtering 2015-2020 study, found as many as 7 Full-text research articles, in the face of a pandemic, we need the readiness of the government, health and infrastructure support as well as coordination and cooperation among all parties.

## INTRODUCTION

Covid19 or corona virus disease first discovered in a Town in Wuhan, China. Wuhan located in central china and is the capital of Hubei province, where Wuhan city is very strategic because it is located at the confluence of the Yangtze and Han river. The population of Wuhan city of more than 11 Million people exceed the City of New York. The latest Data on the spread of Covid19 globally obtained on July 8<sup>th</sup>, 2020 confirmed as much as 11,635,939 case with details 539,026 people died and scattered in 216 Cities in all corners of the World. The American continent was in the order first by the number of cases as much as 6,004,685, followed by continental Europe with 2,809,848 case, the Mediterranean region 1,204,698, the southeast Asia region 1,001,665, Africa 382,683 and last the western Pacific region as much as 231,749 case (1). The official report of one of the Countries on the Continent of Europe, i.e. the Italian state classifies the percentage of the group of patients with a disease that many affected Covid19 and resulted in the deaths of each of the following: hypertension, diabetes mellitus, ischemic heart disease and chronic renal failure as much as 72.0%, 31.5%, 27.4%, and 23.5% (2), based on the report, the person suffering from the disease are more at risk if exposed to the virus Covid19.

Based on the incidence of cases and spreading around the World, the World Health Organization classifies Covid19 as pandemics and disasters world urgently to be addressed immediately. A pandemic is a disease that spreads widely and globally covers the geographic area widely.

Covid19 or corona virus caused SARS-Cov-2, a corona virus recently identified-sized 60-140 nm, the virus is 80% similar to syndrome severe acute respiratory or (SARS) –CoV and included in the subgenus *Sarbecovirus* of the genus *Betacoronavirus* (3). This Virus is shaped like a peplomer big that makes it look like the shape of the crown when viewed using microscope electrons (4). Covid19 is a group of viruses which are very common among animals as well as humans (5). Sub family coronavirinae are classified into 4 major groups namely *Alphacoronaviruses*, *Betacoronaviruses*, *Gammacoronavirus*, and *Deltacoronavirus* (6). *Deltacoronavirus* and *Gammacoronavirus* a lot of infects a kind of bird while *Betacoronavirus* and *Alphacoronavirus* infecting the gastrointestinal tract, respiratory and the function of the nervous center of human and mammals (7), the group of the virus is now endemic and spread in humans.

Transmission and spread of Covid19 starts with the transmission of animals to humans and then subsequently followed by between one human to another

human, is based on genetic studies and epidemiology (8). Covid19 can be spread through droplets when coughing or sneezing or through direct contact with the sufferers as well as getting the bias enters through the eyes, nose and mouth in addition Covid19 can also be transmitted through saliva directly or indirectly (9). Virus incubation period is 3-14 days to cause the disease without symptoms until the symptoms fatal (10). The spread of the Virus Covid19 continues to expand very quickly to different parts of the Country in the World, the spread of the virus can actually be stopped or minimized in two ways, namely using anti-virus and non-pharmaceutical interventions (NPIs) or intervention non-pharmaceutical. Anti-virus at this time can not be used because it is still in research development, for that alternative that most effective as preventive measures, i.e. non-pharmaceutical interventions (NPIs) or intervention non-pharmaceutical.

NPIs aims to reduce the spread of the virus by limiting the contact in the population. NPIs also has the advantage in terms of financing, compared anti-virus NPIs is more efficient but requires a powerful discipline of the community. NPIs can be done by isolation of cases at home, keep your distance especially with people who are aged 70 years, quarantine voluntarily as well as close the center of the crowd, a center of worship and schools. The government should take a role in the implementation of NPIs, to coordinate among agencies and citizens are also part of the management of NPIs.

Management virus prevention are coordinated is key to the success of NPIs to prevent the spread of the virus, in addition to some of the management of health centers and referral hospitals also as an indicator to stop the spread of this virus (11). The Literature review discusses the problems of management of the virus, NPIs and the response of the Countries in the World regarding the spread of the virus Covid19. Literature review it is important to do so for several reasons, first because the antivirus Covid19 has not yet been found, the second apply control virus with NPIs as well as describes the response of the various responses of Countries in the World in the control of the virus with the goal found effective methods to combat the spread of the virus while the conditions now.

## DISCUSSION

The literature review will be a lot to discuss or elaborate on some articles related research of database PubMed, Science direct and wiley online screening based on the inclusion and exclusion criteria. The specific purpose of this literature is the effort of preventive non-pharmaceutical interventions (NPIs) or intervention non-pharmaceutical in addressing the spread of the virus in

a widespread manner. This literature uses a flow chart of a prism and the technique of PICO in finding research articles (12-13).

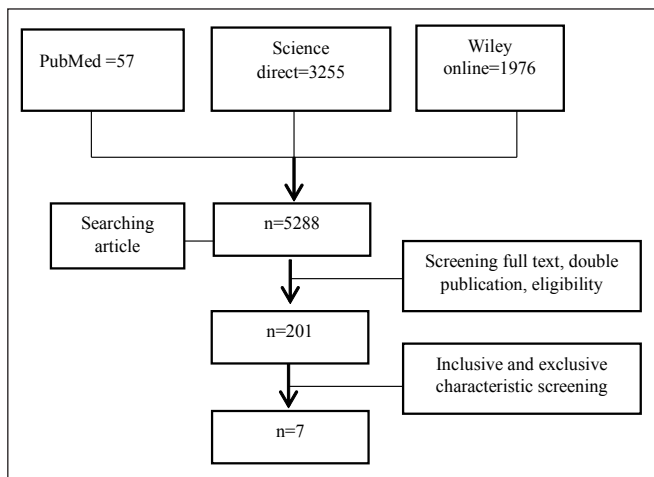


Figure 1. Flow Chart PRISMA

Covid19 is classified as a pandemic, i.e. a state with the method of handling compatible, this pandemic resulted in the damage in the various settings of life, including the political order, the economy and even cause social pressure in the community (14). If this is not resolved immediately will cause various sorts of problems and crisis which is fatal. The handling of the pandemic Covid19 requires strategies with the standard of management that is both sustainable in reducing the spread of the virus, a strategy that is not only specialized development computer but strive to implement the actions of NPIs. Ferguson in his research group and give the instructions concerning the application of NPIs in some order of life, namely the isolation of cases at home in people with symptomatic during the 7 days with the purpose of can reduce the contact to 75%, quarantine at home if indicated in case of symptomatic, then all family members must be 14 days in the house, impose social distance in the elderly above 70 years as well as maintaining a distance of 2 meters, the social distance for all populations and the closure of schools and universities (11).

This intervention should be in line with the readiness of the government, for example In the country of China classifies the preventive measures in 3 major stages, namely, grouping the national level, the population level of the case and the level of the general population (15). A variety of literature searches in the database and found the article about strategy, management and the global response to the spread of Covid19 in the table as follows (Table 1).

### Strategy and Management Prevention Covid19 in Various Countries in the World

The WHO through its Strategic and Technical Advisory Group for Infectious Hazards (STAG-IH) recommend a strategy to handle the spread of the virus, the first to ensure the readiness of the government through the scenario the first case, the first group, the community spread in the regions of the country. Second, consider the combination and the steps in responding to this virus include the control of health facilities, hygiene and postpone public meetings on a large scale. Third do active monitoring and low-income Countries can request the support of WHO, including financial support (16). The protocol above should be done immediately to minimize the spread of the virus Covid19.

The WHO confirms to combat the spread of the virus, this strategy is in line with the study prevention is the most appropriate step at this time and should be the collective needs of government and society (17). According to research conducted in Pakistan recommend a form of prevention through the management of isolation and quarantine on the health facilities and hospitals in the form of the Formation of the team and a clear division of tasks, training of medical personnel that are evidence-based, SOPS should be designed and implemented, disinfection in hospitals should always be done and closely monitored, the amount of personal protective Equipment (PPE) must be available and appropriate standard, if possible still do the efficiency as well as motivating health workers in order not to saturate (18). Availability of PPE is very important even health clinic of special dental care recommend the use of protective goggles, a face mask should be worn when adjacent to patients less than 1 meter (19). This procedure should be certainly applied in health care to avoid the spread in the medical, and if it happens to be detrimental to all parties even crippling health services in the hospital.

Strategy and prevention efforts has been widely applied, in America alone has developed a system known as the Electronic Health System (EHS), this system-based Electronic Health Record (EHR), and developed by the University of California. UC San Diego Health a little bit different with the build some tools specific Covid19 to support outbreak management, including triaged scripts, electronic check-in, booking and documentation standards, secure messaging, analytic real-time data, and the ability of telemedicine (19).

The system of EHR is very helpful, EHR is an overview of the utilization of the latest technology that

**Tabel 1. Syntesis Grid Articles**

The author	Title	Methods	The population	Results and Conclusion
Ali I, Alharbi OML (17).	Covid19: disease, management, treatment, and social impact		All the citizens of the countries in the World potentially affected by the Covid19	It is recommended all people following the steps of prevention, management and quarantine strictly and do not panic.
Chenneville T, Gabbidon K, Hanson P, Holyfield C (31).	The impact of Covid19 in HIV treatment and research: a call to action	Outline the similarities and differences of Covid and HIV	The World Community	Describe the impact of treatment covid 19 in the future with the concept of biopsychosocial, optimize the role of social, economic and political in tackling the outbreak as well as provide recommendations to government about the cost of tackling the outbreak is bigger than health promotion
Djalante R, Lassa J, Setiamarga D, Sudjatma A, Indrawan M, Haryanto B, et al (22).	A Review and analysis of the current response to Covid19 in Indonesia : in the period of January up to 2020 March	The impact of the pandemic Covid	A citizen of Indonesia	Recommend an increase in the government's response with the aim to make indonesia as a country that is free of the virus.
Hopman J, Allegranzi B, Mehtar S (21).	Clinical patients infected with the novel coronavirus in Wuhan, China	Analyzing the honour of the government of Indonesia is facing Covid19	Countries with lower income in the face of Covid19	Recommend prevention in the workplace, as well as seek to cooperate with the media in order to reduce public panic through news broadcasts.
Mansoor SN, Gill ZA, Rathore FA, Utra KM (18).	Build and manage a quarantine and isolation in Covid19 pandemic	Focus to places of work i.e. Lab, activity, border, care facilities	-	AFIRM, which has established itself as a center of excellence in rehabilitation and disability management,also excels in managing Covid19.a thorough examination, team work, and detail as well as ensure the safety of staff and patients simultaneously without reducing the quality.
Reeves JJ, Hollandsworth HM, Torriani FJ, Taplitz R, Abeles S, Tai-Seale M, et al (20).	Virus coronavirus spread as the rest of the New Year Celebration	-	The world	EHR is an important tool in supporting the needs of the clinical health system which manages the pandemic Covid19.
Sahu KK, Mishra AK, Lal A (33).	Covid-2019: Update on Epidemiology, Disease Spread and Management.	-	-	Contact tracing, isolation hospital and quarantine is starategi most appropriate to do at this time

is believed to be efficient, accurate and fast, the other is the case of Africa, including in Countries with income levels of middle-to-bottom, from the side of the budget will of course affect the handling of this virus, through the African task force for coronavirus preparedness and response which focuses on the activity of the cross-border region and health facilities, Africa implement a strategy that is more prioritize critical patients, prevention of transmission of the medical personnel with the preparation of personal Protective Equipment (PPE), anticipation of climate change, anticipating the displacement in conflict areas and utilize the media so that people are not too panic (20).

In Southeast Asia including Indonesia, the spread of demographics and population become a major factor increasing the spread of this virus, proven by the latest data accessed on July 8<sup>th</sup>, 2020 are 66,226 case, with 3,309 victims died. Indonesia in the category of country the spread of the virus the largest in Southeast Asia, this fact requires the government of Indonesia did not stay silent and immediately respond to the pandemic,

through the National Agency for Disaster management of Republic Indonesia was assigned as the chairman of the task force for combating Covid19 in Indonesia (21). This research is also a lot of review of government policies during the period January-march 2020, one of the most highlighted, namely the Rapid test mass that is now routinely conducted in various regions in Indonesia, it is in accordance with the recommendations of the Central for Disease Control and Prevention (CDC) as a basic consideration in clustering the spread of the virus.

Country China first do a Rapid test, the researchers in the Country concluded this test is very quick, efficient and very sensitive, the Chinese even developed an antibody test combined IgG and IgM, the sensitivity of this tool to achieve 88.66 %, in addition the advantages of this tool can be done anywhere, for example at the airport, the clinic and at the train station but of course can not identify the presence of virus in specific but used as a basis for referral Doctors and medical personnel to determine a diagnosis and begin treatment (22).



Screening done a lot to limit the spread of the virus, but on the other hand research conducted in China, results obtained are slightly different and contradict or refute the effectiveness of the screening process, this was proven when some people (tourists or traveler) are non reactive when in screening because they are not symptomatic. In fact the screening is only to be used as the initial basis in helping health workers identify the presence of infections caused by viruses, in addition to a cheap tool is efficient and easy to use (23).

Prevention can actually be started in yourself which seeks to avoid sneezing and coughing in public, wash your hands regularly and use a mask, in addition to use of disinfectants around the dwelling can also control the spread of the virus is widespread (14), and the main is also public knowledge as the results of research in the Country of Serbia for example, which shows the importance of the readiness of individuals, including their knowledge in preventing the spread of this virus (24). Control the spread of the virus widely with the technique of random on set of the epidemic the population is carried out in a study led by Lauren Gardner from Johns Hopkins University, the model of Discrete-time Susceptible-Exposed Infected-Recovered (SEIR) is used to simulate the dynamics of the development of outbreaks (25).

Preventive measures the other as in another Study conducted in China, regarding the effectiveness stay home and avoid travel, reduce gathered and clustered as well as drinking plenty of water can help reduce the spread of this virus (26), it is in accordance with the WHO report to reduce contact by 50% would minimize the cases as much as 44%, whereas if the contact can be prevented up to 90% will reduce the cases of as much as 65%. While it's one of the only studies that assess the impact of the quarantine of the community based on the data of the Wuhan study is reported of the quarantine community and closing the school reduce the peak transmission of each of 45.7% and 29.9% (27).

Research Disease Control and Prevention Bureau of NHC increasingly strengthen that direct contact may exacerbate the situation and accelerate the rate of spread of the virus, the following groups of people who range exposed by contact with the patient Covid19 i.e. a person who lives with the patient, the second group of medical staff who care for patients, the third group of people who never had one vehicle with the patient or family, colleagues who accompany the patient and the last group is those who have a close relationship with the patient (28).

Some people consider this virus only infects certain groups but in fact does not like it, Covid19 does not know race, gender, age and religion, even in a hospital environment, this is evidenced by the number of medical personnel who are exposed to the virus, in addition to infection nosocomial is of particular concern in hospitals, efforts must be made, namely training prevention or reduction of infection, isolation (29), because it is highly recommended that adhere to the protocols of health and the advice of the government.

### **Global Response**

On March 31, 2020, the WHO officially called for a system of coordinated and comprehensive in addressing the pandemic, the prevention of short-term by limiting travel, as well as gathering in public places should continue to remain to be done. The response of the countries in the World to break the chain of spread of Covid19 indeed diverse, but in general aims at building the capacity of health workers including the use of technology, add the power of the health professional, in collaboration with the private sector in providing the basic needs of personal protective equipment (PPE) (30).

The response of the Country of China, Vietnam, Korea and Taiwan face the pandemic provides many lessons, the country is rapidly and aggressively as well as the emphasis on early prevention, Wuhan city in China with a total population of about 11 Million people are not responsibility-responsibility by implementing a lockdown on January 23, 2020 (31). The effort is not without reason, but is a form of the seriousness of the government against the spread of the virus that is already widespread around the world.

The Country of Vietnam are examples of countries that have limited resources but the government is very proactive in responding to this pandemic, on January 23, 2020 recorded the first case in this Country, efforts which closed the airport and schools. On May 5<sup>th</sup>, 2020 this country do the test as many as 200,000 samples and there are only 271 cases, this is evidence of the seriousness and successful in preventing the spread of the virus (32). New Zealand is also proactive in responding to this pandemic, proven on May 5<sup>th</sup>, 2020 amounted to only 1,500 cases in the 308 million/capita with only 20 deaths, is not apart from the awareness of their citizens to quarantine themselves.

Some other countries also do quarantine the region, and restrictions on large-scale social (PSBB) as happened in Indonesia, the advice is in line with

the research Sahu that require do contact tracing, quarantine hospital as well as screening in the case of symptomatic (33), in addition to do the screening examination of the mass in the form of rapid test and a swab is also recommended even developed countries have developed a screening system with telemedicine, while for Countries that are not able to adopt this system, can use the health care system in each country (34).

Singapore belongs to the country which is responsive to the pandemic, the efforts and actions of surveillance and containment proved to be effective to slow down the spread of the virus, in addition the Country is strict in controlling the border, including stopping the international flights from countries such as Wuhan, Italy, Korea and Iran. For the citizens coming from this country and already entered should be quarantined mandatory for 14 days (35). On the other side of the country of Iran is depressed and failed to cope with the pandemic, the failure to restrict travel as well as hospitals and health facilities to be the trigger, in addition the country is distressed by the conflict with the United States

More the WHO recommends six (6) priority strategies that can be implemented by the government in a country in the face of a pandemic, i.e., first train, expand and deploy the health workforce, second to implement a system if there are cases found, the third test mass and ensure the willingness of the test tool, the fourth identify health facilities that serve as the central health Covid19, the fifth to develop the planning of quarantine and the last namely the government must continue to strive in suppressing the spread of the virus (36). Especially in Indonesia has its own way of breaking the chain of spread of this virus, fsuch as rules initial screening becomes a reference for the government (18). Preventive measures and management are very powerful in overcoming the spread of the virus should be done immediately i.e. Non-pharmaceutical interventions (NPIs) or intervention non-pharmaceutical. NPIs do not require much cost and labor, but the habit of living as well as discipline is the main key to success of this action. Wear a mask, frequent hand washing should be routine all the citizens of the Countries in the World, this is mandatory and if necessary recommended for publish government rules regarding this policy.

### CONCLUSION

Management and control of the spread of Covid19 is an attempt to prevent the spread of this virus, this strategy is appropriate now because the

anti-virus Covid19 has not yet been found. Preventive measures can be undertaken early. The discipline of the citizens as well as continue to do the government's recommendation in accordance with the protocol of health can't be ignored again, but the management of the prevention of the spread of Covid19 should be started first in yourself. Some researchers in the literature one of them is in preventing the spread of the virus required the coordination and cooperation between the government with the world health organization WHO as a reference in making policy, the participation of health workers as well as residents of the community are also a factor can't be forgotten, the importance of awareness and discipline community and always strive to maintain a minimum distance of 1-2 meters, maintain personal hygiene with the familiar hand-washing using soap and hand sanitizer, wear a mask and face-shield as well as adhere to the protocols of the health.

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