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Sharing Management of COVID-19 in America as well as Public Health Centers and Primary Clinics in Indonesia

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INTRODUCTION

Since the Coronavirus-2019 (COVID-19) was declared by the World Health Organization (WHO) as a pandemic on March 11, 2020, and then Indonesia declared COVID-19 a national disaster on March 14, 2020, COVID-19 cases in Indonesia and the world have increased rapidly. Puskesmas and clinics are at the forefront of handling and preventing the transmission of COVID-19. Puskesmas and clinics must prepare their own resources and service protocols in order to serve the community without neglecting the safety and health of patients and health workers from the risk of transmission of COVID-19. Health workers meet with patients and visitors to health facilities every day, sometimes even with inadequate personal protective equipment (PPE), so they are very much at risk of being exposed to COVID-19, from patients or vice versa. With the increase in COVID-19 cases, a comprehensive effort is needed in case management and efforts to break the chain of transmission and keep health workers protected in conducting their duties. Modification of health service facilities in Puskesmas and clinics, changes in service flow, standard operating procedures for health services must be adjusted by paying attention to the safety of health workers and patients/visitors to avoid COVID-19 transmission. Preparedness of Puskesmas and clinics in facing the COVID-19 pandemic should be done by strict management according to the patient's condition by paying attention to PPE principles, conducting strict surveillance of suspected and positive COVID-19 cases, case reporting system within 1x 24 hours to the District/City Health Office, conducting epidemiology investigations and providing risk communication to the community as well as improving networks with stakeholders, across sectors and local community leaders.

How to prevent transmission

A rapid increase in COVID-19 cases has occurred worldwide, and health workers have also been affected. In the United States, 20% of cases are healthcare workers who are mostly doctors and nurses. Until now, the situation for COVID-19 at the global and national levels is still at very high risk. Prevention of COVID-19 transmission in primary services involves the following:

- Management of health services at primary level health care facilities is done to prevent COVID-19 transmission by separating infectious and non-infectious polyclinics, starting from registration, waiting rooms, examination rooms, laboratory services, cashiers, pharmacy services, where each patient/visitor is obligated using a mask and washing hands before entering the Puskesmas area. Triage is done by conducting temperature checks and screening patients for COVID-19 in both polyclinics, use of digital sphygmomanometer with wrists, and the use of barriers between health workers and patients. There is an inscription posted before the patient enters the *Puskesmas*, stating if patients have a fever, cough, runny nose, diarrhea, please go to the infectious ward for containment of possible transmission.
- Use of standard personal protective equipment (PPE). Health officers wear PPE according to standards such as surgical masks/N95, gloves, reusable gowns, nurse cap, googles/face shield glasses, and covered shoes.

Prevention of COVID-19 transmission conducted by clinics in the United States is the same as that in Indonesia, with health personnel required to use a face shield and mask when meeting with patients. Many COVID-19 patients have no symptoms when they come

to us but they can spread the virus even if they are there to only check their blood pressure. In America the number of COVID-19 cases is much higher than in Indonesia, so even in clinics, health workers check patients with positive COVID-19, so the PPE used include an N95 mask, face shield, hazmat clothes, and gloves. As in Puskesmas and clinics, the limited supply of PPE is also a problem in America.

- c. Maintain distance (social distancing).
Maintain a distance of 1-2 meters from other people. Polyclinic waiting rooms are arranged in such a way that patients can wait with a safe distance of at least 1 m between patients.
- d. Washing hands with soap and running water or using a hand sanitizer, as well as using surface disinfectants. Every time you enter the Puskesmas area or clinic, patients/visitors are required to wash their hands with soap and running water or use the hand sanitizer provided. Disinfection in clinics and health centers is done at least 2 times a day in the morning before services and after polyclinic services are completed. One often asked question is what percentage of alcohol is needed to stop the COVID-19 virus? In a study on viral infectivity, the research question asked how much is recommended? In that study, 60% alcohol was recommended. The figure below also shows that 30% alcohol has the same ability as 60% alcohol to disinfect on contact surfaces for 30 seconds.

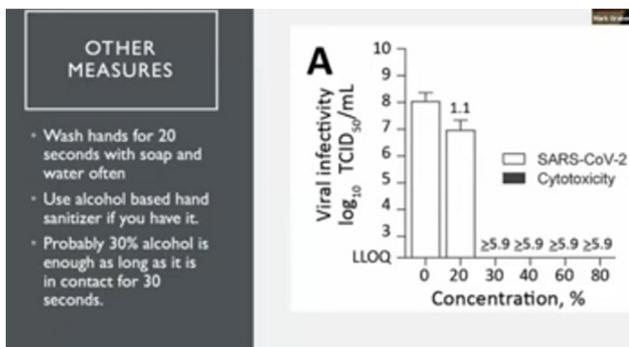


Figure 1. Effectiveness of alcohol concentration on viral infectivity.

- e. Avoid procedures that cause aerosols. Actions that can cause aerosols, such as a nebulizer, can increase the infection rate. There are many procedures that will not be done because it is not within the competence of family medicine, such as sputum induction with a nebulizer, endotracheal intubation, BiPAP / CPAP, suctioning, CPR, and autopsy. The nebulizer can be replaced by using a metered-dose inhaler with a spacer instead, every 4-6 hours if needed.
- f. Limitation on the number of visitors. Visitor restrictions by reducing patient registration opening hours. In America, pediatric patients who are hospitalized are cared for by one adult for 24 hours. There are no visitors to the adult patient in the hospital unless the emergency room can be visited only briefly. This is a difficult rule to enforce in every family-oriented

society including America and Indonesia, because most people are used to living with their family.

Incubation

Incubation for about 5 days. After 14 days of quarantine, only 1 in 10,000 people had positive PCR results. This is why 14 days of self-quarantine is recommended. In America, about 55% of patients positive for COVID-19 have no symptoms at the first positive PCR result.

Symptoms

About 81% of COVID-19 patients will have mild disease and may not even have symptoms. About 14% of patients required admission, 5% had to go to the ICU, and 2-10% died. Fever was complained about by 44% when they arrived to the emergency room and 89% when hospitalized, fatigue 70%, myalgia 17-35%, cough 68-82% (mostly not productive cough), swallowing pain, stroke, headache, chills, loss of the sense of smell and taste (anosmia and ageusia), other symptoms such as dyspnea, cough with phlegm and diarrhea as much as 3.8%.

In America, when triage is done outside of an emergency department, officers give screening questions to residents who come to the emergency department. The screening, starting from checking the temperature and the risk of COVID-19, is all very helpful. Meanwhile, Puskesmas uses a screening sheet to triage patients who visit the Puskesmas. Complementary diseases should also be asked to detect the initial risk of a person against COVID-19. This screening sheet is made to make it easier for officers to categorize patients at risk or not for COVID-19, and this is only available in Bahasa Indonesia.

The criteria for the COVID-19 case must be understood by defining and following-up the handling of the COVID-19 case¹.

1. ODP or *Orang Dalam Pemantauan* (Insider Monitoring) People who have fever (≥ 38 °C) or a history of fever; or symptoms of respiratory system disorders such as runny nose, sore throat, cough AND no other cause based on a convincing clinical picture AND in the last 14 days before symptoms appear having a history of travel or living in a country/region reporting local transmission OR have a history of contact with a confirmed case of COVID-19.

2. PDP or *Pasien Dalam Pemantauan* (Patient Under Supervision)

People with acute respiratory infections (ARI), namely fever (≥ 38 °C) or a history of fever; accompanied by any of the signs of a respiratory disease such as: cough, shortness of breath, sore throat, mild to severe cold pneumonia AND no other cause based on a convincing clinical picture AND in the last 14 days before symptoms appear, have a history of travel or live in a country/region that reports transmission local.

People with fever (≥ 38 °C) or a history of fever or ARI AND in the last 14 days before symptoms develop have a history of contact with a confirmed case of COVID-19.

People with severe ARI or severe pneumonia requiring

Nama :
 Tanggal Lahir :
 Telepon :
 Alamat :

FORMULIR DETEKSI DINI CORONAVIRUS DISEASE (COVID – 19)

Berilah tanda centang (V) pada kolom yang sesuai

GEJALA

NO	PERTANYAAN	YA	TIDAK
1	Demam / Riwayat Demam		
2	Batuk / Pilek / Nyeri Tenggorokan		
3	Sesak Nafas		
4	Keluhan lain :		
	a. Lemah (malaise)		
	b. nyeri otot		
	c. mual atau muntah		
	d. nyeri abdomen		
	e. diare		
	f. keluhan lainnya :		

FAKTOR RISIKO

NO	PERTANYAAN	YA	TIDAK
1	Pada 14 hari terakhir sebelum timbul gejala memiliki riwayat perjalanan atau tinggal di negara/wilayah yang melaporkan transmisi lokal		
2	Pada 14 hari terakhir sebelum timbul gejala memiliki riwayat kontak dengan kasus konfirmasi COVID-19		

PENYAKIT PENYERTA

NO	PENYAKIT	YA	TIDAK
1	Diabetes		
2	Penyakit jantung		
3	Hamil		
4	Penyakit keganasan		
5	Gangguan imunologis		
6	PPOK		
7	TBC		
8	Gagal ginjal kronis		
9	Gagal hati kronis		
10	Penyakit lainnya :		

CARA PENILAIAN

PASIENT DALAM PENGAWASAN (PDP)	ORANG DALAM PEMANTAUAN (ODP)	Orang tanpa gejala
Gejala No. 1 + No. 2 + No. 3 DAN Faktor risiko No. 1 ATAU Gejala No.1 atau 2 DAN faktor risiko No.2	Gejala No.1 atau No. 2 DAN Faktor Risiko No. 1 ATAU Gejala No. 2 DAN faktor risiko No.2	Tidak ada keluhan DAN Faktor risiko No 2

TINDAK LANJUT

PDP atau ODP atau OTG	Rapid test
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Figure 2. Covid-19 screening sheet at Puskesmas.

hospitalization AND no other cause based on a convincing clinical picture.

3. OTG or *Orang Tanpa Gejala* (Asymptomatic Patient)

A person who is asymptomatic and has a risk of contracting it from a person with confirmation of COVID 19. A person without symptoms (OTG) who is in close contact with a confirmed case of COVID 19.

Close contact is someone who makes physical contact or is in the room or visits within a radius of 1 meter with the patient’s case under surveillance or confirmation within 2 days before the case develops symptoms and up to 14 days after the case develops symptoms.

4. Confirmation Case

Patients infected with COVID-19 with positive test results through PCR examination.

Differential diagnosis

A diagnosis of disease needs to be considered if you encounter symptoms similar to COVID-19 such as pulmonary edema, pulmonary embolism, acute exacerbation of COPD, asthma, pneumonitis, cor pulmonale, adenovirus, Chlamydia pneumoniae, ARDS, heart disease, tumors, and others.

Testing

Testing in America and Indonesia does not differ much. In America, it is often conducted by walk-in testing for residents who do not own a car. Types of testing performed in America:

- a. Rapid IgM antibody test.
The sensitivity is as low as 36%, with specificity around 91.7%
- b. Rapid test using isothermal nucleic acid from Abbott’s laboratory.
Sensitivity around 85%, with specificity 99%
- c. Reverse Transcription PCR
RT PCR examination by taking nasal swabs, sputum and bronchoalveolar lavage². The sensitivity of the nasal swab will be positive 63%, 72% sputum, and 93% Bronchoalveolar Lavage³.

Tests performed at the Puskesmas and clinics include complete peripheral blood tests, low white blood cell counts (lymphocytopenia occurs in 82% and a few are leukocytosis), neutrophil-lymphocyte ratio (NLR), absolute lymphocyte count (ALC) and rapid antibody tests can be helping to make a clinical diagnosis. If diagnosed clinically, then an RT-PCR test is performed to diagnose COVID-19. Other tests that cannot be done at the Puskesmas and clinics include increased LDH (98%), increased CRP (85%), increased D-Dimer, interleukin-6 (IL-6), liver function, and in patients with cytokine storms, there is an increase in ferritin. On chest X-ray, patchy bilateral infiltrates are found, and early lung infection can be seen on CT scan of the chest.

Governance

In America, if someone is suspected or infected with COVID-19 or who are caring for patients infected with COVID-19, they can isolate themselves at home. If within

72 hours the patient improves without fever, without ibuprofen or paracetamol and the respiratory symptoms improve (cough, shortness of breath) and 7 days of isolation from the first symptoms appear, the patient can end the isolation.

Puskesmas are obliged to monitor the health of patients or residents who are conducting independent isolation or quarantine. Health monitoring is usually done by surveillance officers as well as hamlet supervisors (*gasbinsun*). Monitoring is conducted by visiting the field or via WhatsApp. The Puskesmas also coordinates and collaborates with cross-sectors (village heads, hamlet heads and village/hamlet task forces) for monitoring.

The clinic performs early detection and rapid responses by taking steps to identify, monitor contacts, then make referrals or report cases to the Puskesmas. Puskesmas conducts referral of suspected or positive COVID-19 patients to COVID-19 referral hospitals. The medical staff will make a medic-to-medic call with the responsible pulmonary specialist at the referral hospital before referring the patient.

Communication of the risk to patients and to related groups or families concerns how we break the chain of transmission, and this is the obligation of clinics and Puskesmas. Involvement of family doctors with patients, with minimal emphasis on family, then providing needed health information and solutions to patient health problems, providing support to patients and families, needing assessment and intervention, as well as family therapy for COVID-19 patients and their families. Here we can judge whether a patient can perform independent isolation or not. And in family management, we can identify the role of the family in recognizing problems related to COVID-19. Then it is important to determine how the family can care for the sick. It is hoped that this will be part of how families can become partners in the treatment of cases.

This risk communication is very important for us to do with the key message that the public must know, recognize, understand COVID-19 starting from the causes, symptoms, signs, modes of transmission, and prevention that can be done by the community. Promotion and prevention is done by means of health advice through distributing leaflets, posters, banners, then through social media, WhatsApp group and so on. Then there is joint cross-sector outreach, to places of worship such as mosques, public facilities, such as in markets, and centers of hamlets. And what is no less important is the collaboration with the COVID-19 taskforce at the hamlet to sub-district level, because the disease control efforts really need handling not only in the health sector, but involves all sectors including security, social and logistical assistance.

In special conditions such as Ramadan

How about during Ramadan? According to the WHO, there has been no research linking fasting and increasing the risk of developing COVID-19 infection. Healthy Muslims can still fast as in previous years. But for COVID-19 patients, according to the WHO recommendations, it is better to pay

attention to religious provisions and consult a doctor.

Physical activity during Ramadan is also limited, by maintaining distance and maintaining hand hygiene. Good nutritious diet, especially food that is fresh every day and not preserved food, and fluid intake such as drinking enough water are very important during Ramadan, as always.

How about therapy?

- a) Many immune boosters, vitamin C, vitamin D, zinc, and supplements such as echinacea, garlic, are of no use. Elderberry might reduce influenza but there are no data for COVID-19 and its symptoms.
- b) Paracetamol and NSAIDs can be used, and there is no evidence to worsen the outcome.
- c) Steroids are only used for patients who are in shock in the ICU. The use of steroids will worsen the outcome in COVID-19 patients.
- d) Do not use chloroquine, hydroxychloroquine, or azithromycin. The latest and the two largest and best trials were both terminated early due to increased mortality (13% with placebo and 17% with chloroquine, hydroxychloroquine, and azithromycin).
- e) Patients with hypertension who have received ACEI and ARBS therapy can still be continued⁴.
- f) Lopinavir, and/or ritonavir are of no use⁵.
- g) Convalescent serum may be of benefit. In America, only 15 patients were tested⁶.

Concerning Remdesivir, there are no data to suggest that it works and there is one study that has shown no benefit.

CONCLUSIONS

1. There is no proven drug to cure COVID-19, the convalescent serum of patients recovering from COVID-19 is promising.
2. Drugs that are dangerous: steroids, hydroxychloroquine, chloroquine, and azithromycin.
3. Many patients are asymptomatic and can still spread the disease, so PPE is very important.
4. About 81% of patients had a good outcome.
5. Patients with age more than 60 years, patients with diabetes mellitus, hypertension, or heart disease are at risk of having a worse outcome.
6. There are several differences in handling COVID-19 in America and in Indonesia.
 - a. Testing in America is mostly done by walk-in testing and drive thru with car. Types of testing performed in America are generally more complete than in Indonesia.
 - b. Puskesmas and clinics cannot perform tests include LDH, CRP, D-Dimer, interleukin-6 (IL-6), liver function, ferritin and chest X-ray.
 - c. In America, if someone is suspected or infected with Covid-19 or who are caring for patients infected with Covid-19, they can isolate themselves at home, but in Indonesia, suspected cases or patients infected with COVID-19 must be isolated in a hospital.
 - d. Clinics make reports to Puskesmas if they have suspected cases or patients infected with COVID-19.
 - e. In America, treatment is currently not using any antibiotics, but in Indonesia some have used

azithromycin and chloroquine to treatment patients infected with Covid-19.

REFERENCES

1. Ministry of Health, Republic of Indonesia. Guidelines for the prevention and control of coronavirus disease (Covid-19) 4th revision. Jakarta: Ministry of Health, Republic of Indonesia; 2020.
2. Wang W, Xu Y, Gao R, Lu R, Han K, Wu G, et al. Detection of SARS-CoV-2 in different types of clinical specimens. *JAMA*. 2020;323(18):1843-4.
3. Chen C, Gao G, Xu Y, Pu L, Wang Q, Wang L, et al. SARS-CoV-2-positive sputum and feces after conversion of pharyngeal samples in patients with COVID-19. *Annals of Internal Medicine*. 2020;172(12):832-4. doi: 10.7326/M20-0991
4. Zhang P, Zhu L, Cai J, Lei F, Qin JJ, Xie J, et al. Association of inpatient use of angiotensin-converting enzyme inhibitors and angiotensin II receptor blockers with mortality among patients with hypertension hospitalized with COVID-19. *Circulation Research*. 2020;126(12):1671-81. doi: 10.1161/CIRCRESAHA.120.317134
5. Cao B, Wang Y, Wen D, Liu W, Wang J, Fan G, et al. A trial of lopinavir-ritonavir in adults hospitalized with severe Covid-19. *N Engl J Med*. 2020;382:1787-1799.
6. Shen C, Wang Z, Zhao F, Yang Y, Li J, Yuan J, et al. Treatment of 5 critically ill patients with COVID-19 with convalescent plasma. *JAMA*. 2020;323(16):1582-1589. doi: 10.1001/jama.2020.4783.