

# Situation Report: Maternal Health Management during COVID-19 Pandemic at Soetomo General Hospital and Universitas Airlangga Academic Hospital, Surabaya Indonesia

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## ABSTRACT

The case of COVID-19 in Indonesia has shown a significantly increasing curve. This condition affected the regulation of maternal health services in Indonesia, especially in East Java Province. The health services structure was a challenge in itself, where hospitals must be adaptive during the COVID-19 pandemic. This situation also caused changes in several components of maternal health services. The report focused on maternal services in two hospitals at East Java, Indonesia (Soetomo General Hospital and Universitas Airlangga Academic Hospital) that described five main components, including patient screening, hospital visit policies, intrapartum management, postpartum management, protection and safety for health workers, and funding issues.

**Keywords:** Management Health Services, Maternal COVID-19, Maternal Health Services

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## INTRODUCTION

COVID-19 cases in Indonesia show an inevitable increase curve<sup>1</sup>. To date, June 12, 2020, a total of 36,403 cases have been recorded, with 13,213 cases recovered and 2048 died. Meanwhile, official data on the number of pregnant women with COVID-19 in Indonesia have yet to be obtained. East Java Province has second ranks with the highest COVID-19 cases in Indonesia<sup>2,3</sup>. It is also found that many pregnant women are confirmed to be COVID-19 or have the status of Patients under Supervision (PDP). Reports from several countries, such as the New York Health System, indicate that the incidence of asymptomatic pregnant women with COVID-19 is around 16%<sup>4</sup>. Report of Sutton et al. in NEJM on May 31, 2020, out of a total of 215 pregnant women, 33 (15.4%) pregnant cases with positive COVID were found at New York-Presbyterian Allen Hospital and Columbia Medical Center<sup>5</sup>.

In addition, based on data from Dr. Soetomo Hospital, as a tertiary referral hospital in East Java from March 2020 to mid-June 2020, has received 110 COVID-19 maternal referral cases, with 63 rapid (+) tests and 23 COVID-19 confirmed cases with PCR. Furthermore, Universitas Airlangga Academic Hospital received COVID-19 maternal referral cases at about 47 cases: with 24 confirmed cases of COVID-19. Another report from the Universitas Airlangga Academic Hospital informed that 1 infant with PCR+ confirmed was born to the mother by a rapid (+) test<sup>6,7</sup>.

Generally, the COVID-19 service referral system already exists in the guidelines of the Indonesian Ministry of Health and the East Java Governor's Decree regarding the

appointment of several hospitals as COVID-19 referral hospitals<sup>8</sup>. However, the COVID-19 maternal referral system in East Java still becomes a challenge. This is because, at the beginning of the pandemic, hospitals in the regions were not ready with the facilities and infrastructure to handle COVID-19 cases, mainly related to the availability of negative pressure isolation rooms and personal protective equipment (PPE). This caused referral hospitals in East Java to be centered only in the provincial capital and several city districts, which resulted in difficulties in referring mothers from various regional hospitals.

This condition affects the flow of other referral services in Non- COVID-19 patients. As one example, operating room services in district hospitals were forced to close because health workers providing services there were infected with COVID-19. Other patients who need emergency surgery cannot be provided at the hospital. Therefore, they must be referred immediately to hospitals in the provincial capital and cause delays in care. The need for guidance on the maternal referral system in the pandemic era is necessary. PENAKIB (an organization that has focused on reducing maternal, neonatal mortality) with the East Java Health Department is currently trying to map hospitals that can facilitate maternal services optimally, both in districts and cities. This hospital is categorized as capable of handling pregnant women with COVID-19 when it meets the requirements, including the availability of adequate PPE for health workers. There are three specific rooms for COVID-19 for mothers, namely the delivery room, neonatal room, and isolation rooms.

The hospital's condition would be ideal if the hospital had a particular operating room and a post-operative isolation room with negative pressure. However, because investment in a negative pressure operating room is complicated and expensive, some COVID-19 referral hospitals in urban districts have made COVID-19 operating rooms separate from other operating rooms. The operation was carried out using level 3 PPE, and the operating room was given an air purifier with a HEPA filter. In addition, after each operation, the room will be sterilized with UV, and the patient is treated in an isolation room separate from other patients. The hope for maternal services in East Java in the future is that every hospital in the district/city can handle mild to moderate cases of COVID-19 mothers. So, referral system services are more organized, and there is no accumulation of patients in the capital city, which increases the morbidity and mortality rates of patients because the pyramidal referral is too long.

## METHOD

This research was delivered descriptively. The report described COVID-19 maternal health services in two hospitals in Surabaya, East Java, Dr. Soetomo (tertiary hospital), and Universitas Airlangga Academic Hospital (secondary hospital). This report will focus on five main components, including patient screening, hospital visit policy, intrapartum management, postpartum management, protection and safety for health workers, and funding issues. The situation report is based on maternal health service conditions from March to June 2020.

## RESULTS AND DISCUSSIONS

### Patient Screening

Adequate screening for patients and their families is essential in protecting both patients and health workers in the emergency room and delivery room<sup>5,9</sup>. This includes questionnaire questions that ask for complaints and clinical symptoms related to COVID-19. For example, taste and smell disturbances, digestive tract symptoms such as loss of appetite, diarrhea, as well as symptoms that often appear such as fever, shortness of breath, cough, and travel history, as contact history with COVID-19 patients. For the screening at Dr. Soetomo General Hospital is using EWS (Early Warning System) screening recommended by POGI by adding some modifications, including replacing the CT scan of the chest with X-Ray Thorax and adding a rapid test of COVID-19 antibodies to all patients who come to the delivery room. One or several conditions suspected of being COVID-19 are based on anamnesis examination (clinical symptoms and or contact with patients with COVID-19), laboratories (Neutrophil to Lymphocyte Ratio  $\geq 5.8$ ), X-ray images of the suspicious chest to COVID -19 or positive antibody in the rapid test. Then the total score will be summed<sup>10</sup>.

EWS (Early Warning System) Scoring at Dr. Soetomo is assessed by summing the total score of the major and minor criteria. If the score is 1-4 (low risk), patients are treated according to PPK, and if a score of 5-19 (moderate risk), the patient can be examined rapid test. Meanwhile, if the score > 20 (high risk), it is necessary to do RT-PCR examination of the patient. However, we propose that every patient can take a rapid test specifically for obstetric patients regardless of the total score. This is to consider because most obstetric patients require emergency measures, so the decision to declare the patient's status as COVID-19/Non-COVID-19 can be made immediately,

considering the management of patients can be different. With patients who come to the emergency room, Dr. Soetomo is bringing rapid tests (+) results from the outside, so the rapid test does not need to be repeated. The patient is treated as a PDP, and then a PCR swab is performed. If there are doubts about the patient's COVID-19 status, and the patient requires emergency action, the patient can be tested for TCM (Molecular Rapid Test) where results can come out after 3- 4 hours.

Dr. Soetomo General Hospital also courted the delivery room by providing a specific space as a maternal triage when coming to the delivery room. If a negative COVID-19 suspicion is obtained at the time of screening, the patient will be treated in a regular delivery room. Meanwhile, in a condition of suspicion of COVID-19, the patient can be moved to a particular transitional isolation room. In cases that are still indistinguishable or doubtful, we will place it in the triage. It is important to properly allocate patients to prevent transmission in the hospital, both patients and health workers.

Furthermore, Universitas Airlangga Hospital provided general screening in the emergency room. All patients with symptoms will be tested for rapid tests, chest radiographs, and other examinations as indicated. PDP or ODP classification, along with the conclusion of treatment for patients, is determined by the COVID-19 Task Force and the chief doctor. The principle of "All or None" is applied to prevent patients with suspicion of COVID-19 entering a safe area at Universitas Airlangga Hospital. If the patient is declared unrelated to COVID-19, it will be transferred to the 5th-floor maternity room. Conversely, if the patient is found to have a suspicion of COVID-19, the treatment is at the RSKI (infection specific hospital). All patients with suspected PCR swabs were performed.

### Hospital Visit Policy

The number of visitors must be kept to a minimum number to reduce the risk of transmission<sup>11</sup>. The amount will be determined by hospital policy. Visitors are screened for COVID-19 symptoms, but they also need to be asked about a history of comorbidities. For example, diabetes, cardiovascular disease, lung disease, undergoing cancer therapy) and for people over 65 years of age, where the condition increases the chance of severe COVID-19 disease if an infection occurs.

Visitors should be notified of these risks, especially when visiting a patient with a positive COVID-19, and the hospital gives the option for the patient to revoke their visitor status. Visitors suspected of being infected with COVID-19 based on testing or screening are not permitted to enter the hospital. In addition, the hospital is considered to have an obligation to visitors to conduct screening or triage. Includes instructions on the use of masks, hand washing, and physical distancing to avoid the risk of infection. Replacing family keeper patients with another is not recommended. Visitors also may not roam around the hospital (for example, using a telephone); transit back and forth to get food and coffee must be maintained.

Visitors who are infected with COVID-19, there is a distance between the seats of the visitors and pregnant women who will antenatal care. Hospitals must make reasonable cost arrangements during treatment during the COVID-19 pandemic and provide preferred nutritious food. In addition, visitors must be outside during the aerosolization procedure<sup>12</sup>.

Dr. Soetomo General Hospital imposed restrictions on visits to patients. Each patient can only be visited by a

maximum of 2 people, with a maximum time of 10 minutes. In addition, visitors must wear a mask and wash their hands with soap and running water while visitors who have symptoms of cough, runny nose, or fever are prohibited from visiting Dr. Soetomo. RSUD Dr. Soetomo also limits access to and out through doors, where at each access door is guarded by security officers who are on standby for 24 hours to implement screening of visitors. At Universitas Airlangga Hospital, a patient's family is wearing a patient keeper necklace that has been exchanged with an ID card. Visiting hours are canceled, and other patients' families are not allowed to enter the hospital. All patients and families are required to wear masks and are educated about clean lifestyles such as hand washing, sneezing, and cough ethics.

### Intrapartum Management

Maternal service standards must comply with referral system guidelines<sup>9</sup>. According to the Indonesian Gynecological Obstetrics Association (POGI), there has been no reliable clinical evidence to recommend a method of delivery. Therefore, labor is based on obstetric indications regarding the wishes of the mother and family, except mothers with respiratory problems that require emergency measures in the form of c-section or vaginal birth. If there are indications of a planned operation for pregnant women with confirmation of PDP or COVID-19, an emergency evaluation is carried out and, if possible, delayed to reduce the risk of transmission until the infection is confirmed or the acute condition has been resolved. If the operation cannot be postponed, then the c-section can be carried out with infection prevention must meet the standard and complete PPE<sup>10</sup>.

### Postpartum Management

It is recommended to separate a COVID-19 mother from her baby immediately, including avoiding delayed cord clamping because there is insufficient evidence of its benefits for the baby. There is not enough evidence to support vertical transmission. However, the possibility of mother-infant transmission is clinically acceptable based on reports of small cases of infection in neonates at 30 hours of life and in maternal infants with suspected or confirmed COVID-19<sup>13</sup>.

Therefore, it is suggested that the benefits of the separation of early infants should be discussed with the mother. If approved, the baby must be kept in a separate and observed isolation area. There is no evidence of transmission of the virus through breast milk. For those who choose to breastfeed, patients should be given a breast pump to extract and store breast milk for the next bottle feeding. For mothers who choose to enter a room with the baby, a 6-foot separation distance is recommended with an intervening barrier curtain. For mothers who are COVID-19 positive who choose to breastfeed, wash their hands and face thoroughly, wear masks continuously, and cleanse the breasts before breastfeeding needs to be maintained. It is recommended to separate a COVID-19 mother from her baby immediately, including avoiding delayed cord clamping because there is insufficient evidence of its benefits for the baby. There is not enough evidence to support vertical transmission. However, the possibility of mother-infant transmission is clinically acceptable based on reports of small cases of infection in neonates at 30 hours of life and in maternal infants with suspected or confirmed COVID-19<sup>14</sup>.

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Universitas Airlangga Hospital and Dr. Soetomo General Hospital are implementing a policy of separation between mother and baby. At the Dr. Soetomo General Hospital, every mother patient giving birth with COVID-19 will be treated according to the clinical status, if the patient's case is confirmed. However, without symptoms or with mild symptoms and without obstetric problems, the patient will be treated in the usual isolation room without negative pressure. However, patients with severe clinical symptoms, with symptoms of dyspnoea or comorbidities in the form of diabetes, hypertension, kidney failure, then these patients will be treated in a particular isolation room with negative pressure equipped with a ventilator. In this isolation room, patients are closely monitored for 24 hours and treated by a multidisciplinary team. The criteria for discharge planning patients are if the patient has good clinical status and a negative PCR swab.

### Protection and Safety for Health Workers

Protecting the health of obstetricians and other health workers is at the core of every successful strategy against the COVID-19 epidemic. For individual obstetricians, careful attention to national and local hospital guidelines is needed because this is developing rapidly. Doctors and leaders must maintain an ongoing dialogue with hospital leaders to continue to improve and optimize infection prevention and control measures and to uphold best practices. The Ministry of Health, BNPB and POGI have issued guidelines on the use of PPE in childbirth assistance, and are advised to use PPE level 3<sup>16</sup>.

The experience in Wuhan, China, illustrates the effectiveness of using appropriate PPE along with population control measures to reduce infections in health workers. Before understanding the transmission mechanisms, and using protective equipment, an infection rate of 3% -29% was reported among health workers. With the use of careful mitigation strategies and population countermeasures, including the use of PPE consistently, health worker infection rates are reported to fall to zero cases<sup>17,18</sup>.

In outpatient services, all staff and health workers must wear masks and PPE at least level 2 at all times and be involved in maintaining social distance and often doing hand sanitation. Patients should be strongly recommended to wear masks during hospital visits and beyond when they are in close physical contact with other individuals outside the home<sup>18</sup>. Reports from epidemic areas describe transmission from household sources as a significant cause of infection by health workers. This information emphasizes the need for ongoing vigilance and attention to sanitation measures, even when at home. An additional benefit is reducing the risk of transmission from health workers to family members.

### Funding Issues

The Indonesian government has determined funding for health services due to COVID-19. This has been stipulated in the decree of the Minister of Health No. HK.01.07/MENKES/104/2020 concerning Determination of Corona Virus Infection as Disease Can Cause an Outbreak and its Countermeasures stipulated by the Minister of Health on February 4, 2020. Given the tendency of high escalation of COVID-19 cases and requires treatment in a hospital, causing the referral hospital's capacity to be unable to accommodate COVID-19 cases. Then it is necessary to involve all health service facilities that can provide COVID-19 services so that health services for patients can be optimal<sup>19</sup>.

The ability of hospitals in financial management must be supported by regulations that have been established by the government regarding the technical submission of claims for the care of emerging infectious patients for hospitals that provide health care services for COVID-19. The regulation can be a reference for hospitals to maintain the quality, cost efficiency, and sustainability of COVID-19 patient services<sup>20</sup>. The following are the criteria for the patients whose treatment costs can be claimed: a. Persons in Monitoring (ODP) over 60 years of age with or without concomitant diseases and ODP less than 60 years with concomitant diseases. b. Patients in Oversight (PDP) c. The patient confirmed COVID-19. This criterion applies to Indonesian citizens and foreigners at the service location in outpatient and inpatient care at referral hospitals and other hospitals.

Services that can be funded must follow the standards in the management guidelines according to the patient's medical needs. Funding services for outpatient and inpatient services include administration of services, accommodation (rooms and services in emergency rooms, inpatient rooms, intensive care rooms, and isolation rooms), doctor services, actions in the room, use of ventilators, consumable medical materials, diagnostic support examinations (laboratory and radiology by medical indications), drugs, medical devices including the use of PPE in the room, referrals, corpses, and other health services according to medical indications.

Refer to the Minister of Health Decree number HK.01.07/MENKES/238/2020 regarding Technical Guidelines for Claiming Reimbursement of Emerging Infection Patient Care Costs for hospitals that provide COVID-19 services, namely Hospitals that treat patients with COVID patients -19 can submit claims to the Ministry of Health. The payment pattern in COVID-19 claims is based on Ina CBGs rates given top-up according to the length of treatment, which is calculated as cost per day for effective and efficient financing.

The procedure for claims starts with the hospital filing a claim for reimbursement collectively to the Director-General of Health Services, forwarded to BPJS for verification and the District/City Health Department via email. The claim file for reimbursement of COVID-19 patient care costs that can be submitted by the hospital is that of patients treated since January 28, 2020. Filing a claim can be submitted by the hospital every 14 working days. Furthermore, BPJS issues a Minutes of Verification of Claims on Claims Services Bill no later than seven working days after BPJS receives the claim. The Ministry of Health will pay to the hospital within three working days after receipt of the Minutes of Claim Verification Results from BPJS. BPJS in the role of COVID-19 service present has a

role as a verification of claims for COVID-19 and guarantees in comorbid/co-incidence/complication care after COVID-19 service is declared complete (recovering according to MOH service standards).

In COVID-19 service with Co-incidence of Pregnant Women, the replacement of funding comes from outside the Ministry of Health financing, following the participation of the patient (JKN/Other Health Insurance). This funding is as payment received by the Hospital with COVID-19 service guarantee (reimbursement of costs for services, additional accommodation for isolation rooms, PPE, and medicines that are under the standards in the form of Cost per Day. This is a challenge for hospitals in the management of patients as well as funding; the initial screening protocol for pregnant women is done for the referral hospital. The resources explicitly expended to be able to determine the diagnosis of COVID-19 is quite expensive. So, in the case of pregnant women who will be delivered with sufficient resources if the initial screening results and final diagnosis cannot meet the COVID-19 guarantee criteria of the standard The Ministry of Health, the final guarantee is BPJS.

Claims for reimbursement by BPJS in pregnant women following INA CBG's that have been determined, in this case, only sufficient for non-COVID-19 standard services. With the implementation of COVID-19 screening, which takes up many resources for COVID-19 services, it is difficult for hospitals to receive reimbursement, according to INA CBG's. However, the hospital must prioritize patient safety service standards by seeking cross - subsidies from other INA CBGs claims and COVID-19 treatment claims. If this vital screening is not done, infection transmission from patients who are not screened can lead to more severe health service disruptions and more funding for infected health workers.

During the claim process, the hospital only gets a 50% payment. The burden of the hospital during the COVID-19 outbreak was quite heavy due to a decrease in the number of patients visiting health facilities. Besides, there was a circular from Director-General of Health Services Number 1118 dated April 9, 2020, which contained an appeal not to practice routinely, except for emergencies<sup>19</sup>. The obstacle for hospitals to submit claims is that there are still differences in perception between the hospital and BPJS. So, the claim for COVID-19 patient services is made by BPJS, the claim payer is the Ministry of Health. There are service standards according to the decree of the Minister of Health. At present, BPJS is guided by all standards that must be met or cannot be claimed. Although in the initial stages of service, the resources to perform services according to the procedure are not yet available, regulations have not yet been set in technical terms. The cost of COVID-19 encountered many verification problems by the BPJS.

However, the condition of health financing regulations for COVID-19 also continues to develop. Several regulations have been improved according to conditions and difficulties that occur in the field. It is vital enough to be renewed, such as allowing non-referral hospitals COVID-19 to make claims COVID-19 services and more accessible discharge planning criteria for patients. Without waiting for a negative PCR result, clinical examination and X-Ray photographs will undoubtedly facilitate the flow of patients in the hospital. In some areas, some local regulations can help finance COVID-19 screening efforts, which are not covered by the ministry of health or BPJS, which certainly can help the hospital.

Coordination of various stakeholders must be encouraged, so the problems and obstacles in financing COVID-19 claims for hospital cash flow can be reduced or even avoided. The role of the Regional Government and the Health Department as a health authority in an area, BPJS as a COVID-19 claim verifier and INA-CBGs payer, PERSI, and professional organizations as health service providers will be significant to improve the ability and capacity for give health services to patient with COVID-19.

### CONCLUSION

The maternal health service system in East Java Province, Indonesia, especially at Dr. Soetomo General Hospital and Universitas Airlangga Academic Hospitals, showed better adaptive changes. This encouraged the maternal service system can remain stable and consistent with providing quality care services during the COVID-19 pandemic. These changes have been adapted to existing national regulations, the latest evidence, and hospital resource conditions.

### CONTRIBUTION DETAILS

MACL, PHH, MPW contributed to conceptualization. PR and ERD contributed to application for ethics review and approval. KEG, MY, and RP contributed to data collection. BA, EE, and BP contributed to analysis and discussions of situations. MACL, PHH, MPW, KEG, and ERD drafted the manuscript and submitted for publication. All authors reviewed and commented on drafts.

### CONFLICTS OF INTEREST/COMPETING INTERESTS

There are no competing interests.

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