

# Maternal Mortality Rate Reduction Program Implementation During The Coronavirus Diseases 19 Pandemic in West Java Province

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## Kata Kunci

Pandemi Covid-19;  
Angka kematian ibu;  
Program Penurunan

## Abstrak

Kasus kematian ibu selama pandemi Covid-19 di Provinsi Jawa Barat mengalami peningkatan. Penelitian ini bertujuan untuk mendeskripsikan program penurunan kematian ibu pada masa pandemi Covid-19 di Provinsi Jawa Barat. Penelitian ini dilakukan dengan menggunakan metode literature review dengan tujuan memberikan gambaran tentang masalah penelitian. Selama pandemi Covid-19 di Jawa Barat, Covid-19 menjadi penyebab kematian ibu hamil yang paling signifikan. Program penurunan angka kematian ibu hamil akibat Covid-19 di Jawa Barat dilakukan untuk menindaklanjuti program pemerintah pusat antara lain penyusunan regulasi terkait perlindungan ibu dan anak, pelaksanaan program vaksinasi ibu hamil, pemeriksaan PCR ibu hamil seminggu sebelum perkiraan tanggal lahir dan ibu hamil yang mengalami gejala mirip Covid-19, peningkatan kesiapan penanganan persalinan di puskesmas dan rujukan ke rumah sakit serta upaya peningkatan kesehatan ibu hamil melalui program 3M dan 5M. Program penurunan angka kematian ibu hamil selama pandemi Covid-19 di Provinsi Jawa Barat telah dilaksanakan dengan baik. Penelitian lebih lanjut diperlukan untuk menilai tingkat keberhasilan program.

## Keywords

Covid-19 pandemic;  
Maternal mortality  
rate;  
Reduction program

## Abstract

Maternal mortality cases during the Covid-19 pandemic in West Java Province have increased. This study aims to describe the maternal mortality reduction program during the Covid-19 pandemic in West Java Province. This research was conducted using a literature review method to provide an overview of the research problem. During the Covid-19 pandemic in West Java, Covid-19 became the most significant cause of death among pregnant women. The program to reduce the mortality rate of pregnant women due to Covid-19 in West Java was carried out to follow up on central government programs including the preparation of regulations related to the protection of mothers and children, the implementation of the vaccination program for pregnant women, PCR examination of pregnant women a week before the estimated date of birth and pregnant women who experience symptoms similar to Covid-19, increasing readiness for childbirth handling at the public health center and referrals to hospitals as well as efforts to improve the health of pregnant women through programs 3M and 5M. The program to reduce the mortality rate of pregnant women during the Covid-19 pandemic in West Java Province has been implemented well. More research is needed to assess the success rate of the program.

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## 1. Introduction

The National Medium-Term Development Plan for the years 2020 to 2024 outlines the trajectory of the health sector's advancement, with a vision centered on enhancing healthcare services through the implementation of national health insurance. This plan's strategic policies encompass five key areas: the enhancement of maternal, child, family planning, and reproductive health; the acceleration of nutrition improvement efforts; the bolstering of disease control measures; the promotion of a movement for healthy lifestyles; and the reinforcement of the healthcare system alongside drug and food regulation.

The enhancement of maternal and child health is aimed at reducing the maternal mortality rate (MMR), infant mortality rate (IMR), and neonatal mortality rate, and broadening the scope of vaccinations. Over the past three decades, the government's endeavors have successfully reduced the maternal mortality rate. However, the rate of decline has been relatively gradual. Notably, it remains substantially below the Millennium Development Goals (MDGs) target of 102 deaths per 100,000 live births. With an annual reduction rate of maternal mortality (MMR) at only 1.8%, it is projected that Indonesia might not achieve the Sustainable Development Goals (SDGs) target of 70 deaths per 100,000 live births by 2030 (Mufidayati, 2021).

Despite Indonesia's urgent need to reduce maternal mortality rates, the government's efforts in this area have fallen short of expectations, particularly considering the country's high neonatal mortality rate, which adds to the complexity due to the ongoing Covid-19 pandemic.

In the endeavor to lower maternal mortality rates in Indonesia, the Ministry of Health has introduced several programs. The Covid-19 pandemic has necessitated adaptations in the implementation of these programs, potentially impeding the achievement of the MMR target outlined in the 2020-2024 National Medium-Term Development Plan. Notably, the pandemic has led to a significant decrease in postpartum visits and a shift from the traditional home visit program to remote monitoring via online platforms. To ensure the attainment of the MMR target, the Indonesian government must give heightened attention to programs affected by the pandemic, including program evaluations to assess their efficacy during these challenging times (Gabriella et al., 2021).

The Covid-19 pandemic has introduced factors that contribute to the increased potential for maternal mortality rates to rise. A primary factor is the initial decline in healthcare services at the pandemic's outset. Additionally, the closure of primary healthcare facilities (Puskemas) due to high Covid-19 infection rates among healthcare

workers has led to a reduction in routine prenatal checkup services. This decline is attributable not only to the temporary closure of healthcare facilities, including district general hospitals, due to infected healthcare workers but also to pregnant women's concerns about contracting the virus during healthcare facility visits for prenatal checkups (West Java Provincial Health Office report, 2021).

In March 2020, the World Health Organization (WHO) declared the Covid-19 global pandemic. By March 29, 2022, West Java had confirmed 1,097,273 Covid-19 cases, resulting in 15,611 deaths, equating to a mortality rate of 1.4227% (Pusat Informasi & Koordinasi Covid-19 Jawa Barat, 2022).

Pregnant women face significantly elevated risks of neonatal morbidity and mortality due to the Covid-19 virus (Komdat Kesmas, 2021). As such, treatment strategies must also address the effects on both pregnant women and neonates (Mufidayati, 2021). Throughout the Covid-19 pandemic, pregnant women are classified within a high-risk group should they contract the virus, resulting in an elevated likelihood of unfavorable pregnancy outcomes (Mufidayati, 2021).

Emphasizing secure, accessible, and equitable maternity care within strategic responses to the pandemic and future health crises is of utmost urgency (Chmielewska et al., 2021).

The surge in Covid-19 cases has led to a rise in the number of pregnant women with confirmed infections, particularly severe cases, in numerous major cities across Indonesia. Pregnant women, especially those with specific medical conditions, are at a heightened risk of severe Covid-19. The Indonesian Ministry of Health has reinforced healthcare facilities' capacities and capabilities to effectively manage challenges faced by patients. Furthermore, primary healthcare facilities are encouraged to proactively detect abnormalities in pregnant women's health, strengthen promotive and preventive efforts, and empower the community. Notably, the government has directed significant attention toward easily accessible healthcare facilities, and the Ministry of Health has spearheaded digital-based integrated health service innovations that can be accessed at any time and from anywhere.

The reinforcement and development of the healthcare system are being facilitated through initiatives such as online registration, telemedicine, electronic prescriptions (e-Resep), and more, aimed at providing easily accessible healthcare services. The Ministry of Health has also published a guidance manual to assist in patient care management within hospitals, safeguarding them from virus exposure. Consequently, individuals, particularly pregnant women, can comfortably undergo prenatal checkups at hospitals while adhering to health protocols. Moreover, the ministry has issued guidelines for prevention and self-isolation for mothers and newborns.

Initiated on August 2, 2021, Covid-19 vaccination for pregnant women represents one of the strategies to ensure the survival of both mothers and children. While the risk of Covid-19 contraction is comparable between pregnant and nonpregnant women, pregnant women face a higher risk of severe illness due to the virus.

The Health Ministry issued Circular Number HK. 02.01/1/2007/2021 outlining Covid-19 Vaccination for Pregnant Women and Adjustments to Screening Implementation. Commencing on August 2, 2021, Covid-19 vaccination has been administered to pregnant women, with a focus on high-risk regions. The vaccines administered include mRNA-based platforms such as Pfizer and Moderna, as well as the inactivated platform Sinovac, contingent upon availability. The administration of the first dose begins during the second trimester of pregnancy, while the second dose is administered using varying intervals between vaccine types.

In West Java, the maternal mortality rate experienced a significant increase in 2021, primarily attributed to Covid-19. In response, the government has undertaken numerous endeavors to reduce this number. Given the elevated cases of pregnant women contracting Covid-19 and the heightened risks they face during pregnancy and childbirth, the administration of Covid-19 vaccinations to pregnant women is deemed essential. This recommendation is also supported by the Indonesian Technical Advisory Group on Immunization (ITAGI). The present study aims to illustrate the implementation of the maternal mortality rate reduction program during the Covid-19 pandemic in West Java Province.

## **2. Literature Review**

### **Program Implementation**

The execution of policies involves program implementation, with the core concept of integrated programs defining the extent to which program success aligns with predetermined plans (Duerden, M.D., & Witt, P.A., 2012). The significance of effective policy implementation is emphasized, with identification of key implementation factors, presentation of steps for achieving quality implementation, and establishment of accountability for quality execution.

The basis of many programs lies in their theoretical foundations (Duerden, M.D., & Witt, P.A., 2012). Program theory explains the interaction process of program components to achieve desired outcomes. While some program implementations lack theoretical basis, they must still effectively elucidate the various service mechanisms within the program (Sheirer, 1987).

### **The Maternal Mortality Rate**

The Maternal Mortality Rate (MMR) serves as a pivotal indicator of successful health sector development, reflecting maternal health quality (Syahrir et al., 2020). Defined by the International Classification of Diseases (ICD)-10, maternal mortality encompasses a woman's death during pregnancy or within 42 days post-delivery (WHO, 2012). It has evolved into both a national and international concern and serves as a critical metric in public health measurement, aligning with the goal of improving overall well-being and ensuring a healthy life for all.

### **Vaccination Programs**

Vaccination programs are integral to achieving herd immunity. A higher level of immunity yields greater benefits; hence, widespread vaccination is imperative (D'Souza G & David, 2021). Effective planning for vaccination programs, whether in developing or developed countries, necessitates a comprehensive understanding of herd immunity principles and the multitude of factors influencing its realization (Fox JP, et al., 1971).

Herd immunity provides group protection, rendering the majority immune to infectious diseases, which indirectly safeguards individuals without immunity (D'Souza G & David, 2021). This phenomenon, while a collective resistance to disease attacks, is contingent upon most population members being immune. Notably, the concept of herd immunity must consider regional dynamics, as it manifests in smaller epidemics within populations rather than openly in large communities (Bailey, 1957). Herd immunity is achieved either through a substantial portion of the population being infected or via protective vaccination. To attain herd immunity against the coronavirus, at least 70% of the population must be immune, a challenge influenced by factors including the emergence of new variant viruses, their infectiousness, and human interactions (D'Souza & David, 2021). A pandemic's progression hinges on vulnerabilities, contact levels with infectious cases, and population susceptibilities (Fox et al., 1971).

**4. Methods**

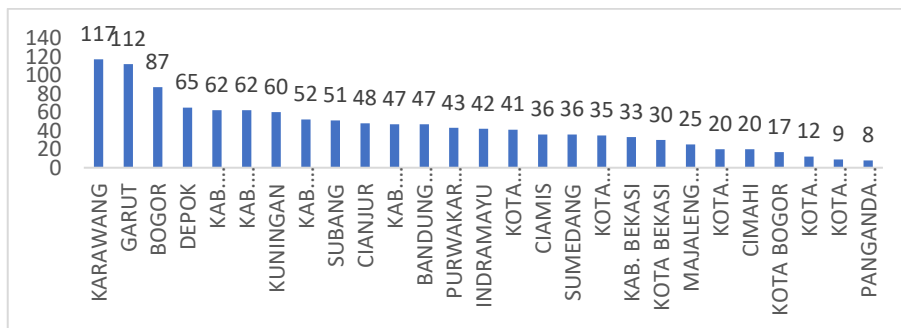
This research employs a literature review methodology to provide a comprehensive overview of the research problem (Snyder, H., 2019). The author, being a key policymaker at the Health Office of West Java Province, possesses the authority to access various relevant documents and reports. Additionally, the selection of this research method is supported by previous research endeavors. The findings from this study can serve as a foundational basis for future research, encompassing both qualitative and quantitative approaches.

**5. Result and Discussion**

The West Java Superior Program for 2018-2023 aimed to enhance educational access and decentralize health services. This initiative aligns with Health Ministry policies and the global commitment outlined in the 2030 Sustainable Development Goals (SDGs), with the maternal mortality rate being a crucial indicator. Notably, the 2015 Inter-Census Population Survey (SUPAS) indicated Indonesia's maternal mortality rate at 305 deaths per 100,000 live births, with a target of reducing it to 183 deaths per 100,000 live births by 2024.

The report on West Java's maternal mortality rate in 2021 compared to 2020 reveals an increase from 745 to 1,217 pregnant women, equating to 149.21 deaths per 100,000 live births. Covid-19 was attributed to 41% of this mortality. To address this, the Health Ministry designated West Java as a focus area for maternal and infant mortality reduction efforts in 21 regencies, with support from Specific Allocation Funds (DAK) for both physical and non-physical interventions.

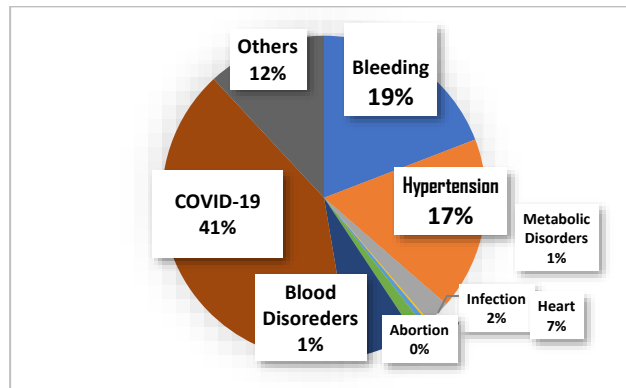
**Image 1. The 2021 West Java Maternal Mortality Rate**



Source: The 2021 communication data of public health (Komdat Kesmas) Report

In 2021, West Java's maternal mortality rate was reported at 1,217 cases, with Karawang having the highest count at 117 cases, resulting in a ratio of 149.21 deaths per 100,000 live births. The intensified endeavors to reduce maternal and infant mortality rates were realized through a holistic approach, encompassing the enhancement of health workers' skills, strengthening healthcare facilities, community empowerment, and stakeholder collaboration, all guided by life cycle goals.

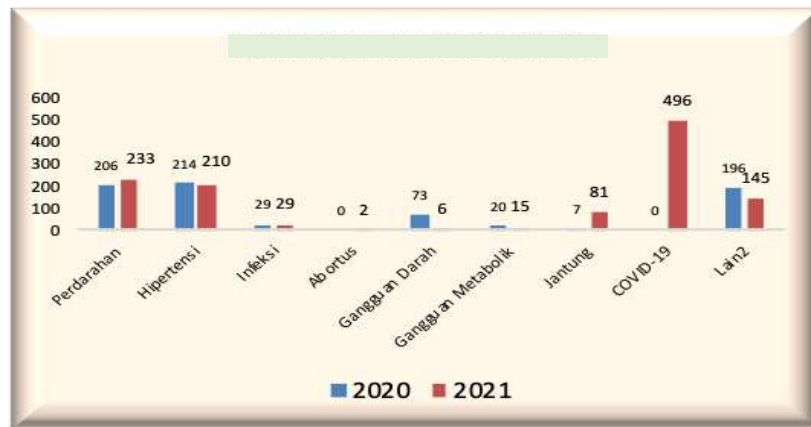
**Image 2. The Maternal Mortality Causes in 2021**



Source: The 2021 Communication Data of Public Health (Komdat Kesmas) Report

As is shown by the graph, the maternal mortality rate was mostly caused by Covid-19 at 41% followed by bleeding at 19%.

**Image 3. The West Java Maternal Mortality Causes between 2020-2021**



Source: The 2021 Communication Data of Public Health Report

The success of the program is highlighted by achieving the 4th antenatal care (ANC) visit indicator (K4), signifying the quality of pregnant women's services. West

Java's achievement stood at 98.7%, indicating significant progress. Family health programs aimed at maternal mortality reduction included counseling, orientation meetings, family planning services, premarital services, integrated ANC, post-neonatal care, and resource orientation for maternal and neonatal health services.

The increase of family health programs through activities related to the attempts at maternal mortality rate reduction was:

1. Counseling Orientation Meeting and Family Planning Service.
2. Premarital Service Implementation Coordinated Meeting
3. Provincial Integrated ANC Orientation and Post Neonatal Care (PNC).
4. The Fortification of Premarital Reproductive Health Service Implementation Orientation.
5. Human Resources Orientation in Maternal and Neonatal Health Service.
6. Coordination Meeting for Covid-19 Prevention and Countermeasures focusing on Pregnant Women.

To advocate the above program, several activities were done:

1. Adding the Pregnant Women Criterion required early detection to endure labor which was done 7 days before labor for pregnant women infected by *Influenza-like illness*. It was done to check their condition and during labor (twice)
2. Coordination between Health Office and primary health care and their network along with laboratories and hospitals related to health services for pregnant women.
3. Administering Polymerase Chain Reaction (PCR) to pregnant women in primary health service facilities, midwife practices, and hospitals performing ANC checkups and labor assistance
4. The Improvement of Communication, Information, and Education (KIE) was optimum for women and families including primary and referral healthcare facilities to utilize PCR.

Health Ministry data displays 84% of Affected Health Facilities within the first 6 months of the pandemic. On the other side, 83.6% of primary health care experienced a decline in patients' visits. The challenge to suppress and reduce maternal mortality rate (MMR) and infant mortality rate (IMR) in Indonesia comprising thousands of inhabited islands and varied plains was considered formidable. Rigorous health facilities access experienced by those who inhabited mountains and small islands, terrible infrastructures in remote areas, a limited number of midwives and doctors to accommodate all regions, a sizeable population, and tradition were some of the challenges.

There were still many villagers who trusted more in traditional birth attendance called *dukun beranak* or *paraji* and native mythologies in in-house delivery or even forest worsened by lack of awareness in using healthcare services. In addition, child marriage



whether it was due to tradition or circumstance still commonly took place. It then led to early childbearing which was risky (Mufidayati, 2021).

Health systems with limited resources most likely encountered further challenges in terms of Covid-19 preparedness and handling which generated maternal, infant, children, and teenagers' health service and essential nutrition distraction risk. It could potentially induce mortality and pain that were evitable (WHO, 2021).

Pregnant women's increased vulnerability during infectious disease outbreaks stems from altered physiology, susceptibility to infections, and compromised immunity. Safeguarding both mother and fetus poses unique challenges, warranting cautious healthcare management (Dashraath et al., 2019).

Pregnant women and neonates are considered high-risk groups during the Covid-19 pandemic. While Covid-19 presents similar characteristics in pregnant and non-pregnant women, pregnant women in their third trimester are more likely to require intensive care. However, a lower threshold for intervention may result in more severe disease outcomes. Pregnant women with symptomatic Covid-19 are at greater risk of severe maternal outcomes, including death, although the absolute risk remains relatively low (Elsaddig, M., & Khalil, A., 2021).

It was important for them and the people around them to protect themselves from the virus. If they experience symptoms (including fever, cough, and shortness of breath), they need to seek medical help from health workers.

The prevention, which includes personal hygiene, social distancing, and early quarantine of confirmed or suspected cases, is of absolute necessity. As part of preventive measures, vaccination should always constitute a fundamental part of the advice given to pregnant women and should be accompanied by proper guidance, always by the updated literature. In case of hospitalization, supportive care with close monitoring of vital signs and respiratory status is required (Pountoukidou et al., 2021).

The specific handling of pregnant women contracting Covid-19 was substantial because of the high risk of contraction. It generates a serious impact on pregnant women if it is handled improperly specifically during the 3<sup>rd</sup> trimester. They needed to avoid and do immediate countermeasures to the swift spread of the virus by being vaccinated. Initially, pregnant women vaccination experienced serious debate between the government and experts. During the virus' growth which enabled them to mutate, the vaccine eventually became a recommended program to avoid getting infected by the virus. It was claimed safe for pregnant women with the approval from doctors in hospitals or health facilities where the checkups took place. The vaccine administration was suggested to be done from the 12<sup>th</sup> week to the 33<sup>rd</sup> (Cory, 2021).

Covid-19 vaccination is the safest and most effective way for people who are pregnant to protect themselves and their babies against severe covid-19 disease. Vaccination should be recommended as the benefits of it seem to outweigh any potential risks. The immunogenicity of vaccinations in pregnancy seems to be similar to that in the non-pregnant population. However, the optimal timing of vaccination in pregnancy for neonatal/infant benefit remains uncertain. Additional information on non-mRNA vaccines, early vaccination during pregnancy, and longer-term infant outcomes are also needed. Given that pregnant people are at increased risk for severe complications from Covid-19, increasing the data and knowledge surrounding vaccination in this population is vital to help to reduce vaccine hesitancy. Along with more data, directed personal vaccine counseling by obstetric providers to pregnant patients may also improve vaccination rates. To achieve these objectives, pregnant women around the world must be the priority in Covid-19 vaccine research (Badell et al., 2022).

It was essential to not only get vaccinated but also take care of the body's immune. With the rise of Covid-19 cases, improving immunity had been one of the solutions for pregnant women from contracting the virus. Another program to reduce the maternal mortality rate was by generating pregnant women's health services accompanied by simultaneous vaccination. Those who expected to get pregnant with a pregnancy program and hadn't been vaccinated were required to consult with their doctors.

## 6. Conclusion

In juxtaposing the maternal mortality rate data for West Java in 2021 with the preceding year, a notable escalation is evident. The figures surged from 745 to 1,217 pregnant women, constituting a rate of 149.21 per 100,000 live births. The deleterious impact of the Covid-19 pandemic was substantial, accounting for 41% of the reported mortalities. The proactive endeavors aimed at curtailing the maternal and infant mortality rates within the purview of the West Java Provincial Health Office were orchestrated through a multifaceted approach. This approach encompassed augmenting the competencies of healthcare personnel, reinforcing the infrastructure of healthcare facilities, fostering community empowerment, and fostering synergistic engagement with stakeholders. These multifarious strategies were systematically aligned with overarching life cycle objectives.

The vulnerability of pregnant women, particularly those with underlying comorbidities, to contracting Covid-19 stands as a palpable concern. The imperative of concurrent administration of pregnancy health services and Covid-19 vaccination during the pandemic is paramount in mitigating the risk of contraction. To address this exigency,

the Health Ministry of Indonesia instituted a comprehensive COVID-19 program tailored to mitigate the mortality risk entailed by the contraction of the virus among pregnant women. This strategic initiative, spearheaded by the Health Ministry, culminated in the issuance of guidelines for the administration of Covid-19 vaccinations to pregnant women in August 2021, following a meticulous research assessment by experts in the field.

The unequivocal implementation of health protocols occupies a pivotal role in arresting the propagation of the Covid-19 contagion, particularly in the context of the emergent paradigm characterized as the "new normal." This evolving framework necessitates that each individual assumes a proactive role in safeguarding their well-being against the looming threats posed by the disease. In this context, the conscientious adherence of pregnant women to prescribed health protocols assumes profound significance. Concomitantly, this entails the consistent pursuit of regular antenatal care visits, assiduous observance of directives imparted by healthcare practitioners, and availing themselves of the Covid-19 vaccination initiatives. These collective actions are quintessential in fortifying the well-being of pregnant women during gestation and in the postpartum phase.

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