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### **POSITION AND ATTACHMENT MODEL OF EXPENDITURE COLOSTRUM AND BREAST MILK PRODUCTION USING THE TRIANGULAR OF LOVE THEORY APPROACH**



# IMPLEMENTATION OF PREVENTION PROGRAM FOR HEPATITIS B TRANSMISSION FROM MOTHER TO CHILD IN PUBLIC HEALTH CENTER OF SURABAYA

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## ABSTRACT

**Introduction:** The number of women with Hepatitis B in Surabaya has increased since 2015; the most significant increase occurred in Public Health Center (PHC) A and a consistently high at PHC B. The state has issued a guideline for preventing vertical hepatitis B transmission from mother to child through the Indonesian Ministry of Health issued the Minister of Health Regulation No. 52 of 2017. This program was in the open-access stage and focused on first-level health facilities in 2018-2019. **Methods:** For this reason, this study aims to analyze the implementation of the prevention program for Hepatitis B transmission from mother to child in PHC A and B, Surabaya, in 2019. This research was an exploratory, descriptive study with a qualitative approach through in-depth interviews and document review. **Result:** The study results indicated the lack of specificity of counseling materials and gaps in recording forms at PHC A. The presence of hepatitis B cadres as a promotion strategy at PHC B, incompleteness of filling out forms, achieving early detection coverage, not optimal pre- and post-early detection counseling activities, and coverage of case management were still below the target at both PHCs. **Conclusion:** the implementation of the prevention program for Hepatitis B transmission from mother to child is still not optimal, especially in health promotion at PHC A, surveillance, and case management at both PHC.

**Keywords:** Implementation, Prevention, Transmission of Hepatitis B

## INTRODUCTION

Hepatitis B is a liver infection that has the potential to cause death. The disease is caused by the Hepatitis B virus, which is transmitted vertically (perinatal) and horizontally (WHO, 2020). According to the Data and Information Center of the Ministry of the Health RI in 2018, most Hepatitis B transmission is 95% vertical. Half of the deaths due to hepatocellular carcinoma and cirrhosis in Asia and Africa are caused by vertical Hepatitis B transmission (Stanaway et al., 2016). However, this vertical transmission can be prevented by early detection in pregnant women and giving vaccines to babies born from mothers infected by Hepatitis B (Schillie et al., 2018).

Efforts to prevent vertical Hepatitis B transmission need to be done because the

number of women infected by Hepatitis B continues to increase. In Surabaya City, there were no women infected by Hepatitis B in 2015. However, there were 201 cases in 2016 and 920 cases in 2017. An increase in the number of cases of women infected by Hepatitis B also occurred in PHC A in 2017 by 42 times compared to the previous year; this increase was the highest compared to other PHC in Surabaya City. The increase in cases also occurred in PHC B, from 19 cases of Hepatitis B infection in women in 2016 to 38 cases in 2017. Hepatitis B infection cases in women in PHC B were the highest in 2016 and the second highest in 2017 in Surabaya City (Surabaya City Health Office, 2017).

The state is responsible for ensuring the child's survival by breaking the chain of Hepatitis B transmission from mother to child to prevent transmission of Hepatitis B

from mother to child (Ministry of Health of the RI, 2017). The Indonesian Ministry of Health issued the Minister of Health Regulation No. 52 of 2017, consisting of four activities. They are promotion, surveillance, early detection, and case management. From this policy, it is hoped that by 2030 it can achieve the SDG's three targets, namely the elimination of Hepatitis B (Ministry of Health of the RI, 2017). In 2018 – 2019, the Hepatitis B vertical transmission elimination program was at the open-access stage; namely, its implementation is carried out at the first level health facility, the PHC (Ministry of Health of the RI, 2017).

PHC A and B are different sub-districts, but the distance between both PHCs is about 2 km. The characteristics of both PHCs are almost the same, including dense urban areas with a population density of more than 20,000 population/km<sup>2</sup> and the number of emigrants and immigrants in each region are also high, namely both of them more than 1,000 immigrants or emigrants. The majority of the population in both PHCs are similar, namely domination with Javanese and Madurese in PHC A and B (Central Bureau of Statistic for the City of Surabaya, 2020). In this study, the selection of PHC A as the PHC studied was based on the number of Hepatitis B cases in women who experienced the highest increase in Surabaya City in 2017. However, the selection of PHC B was based on the cases number of Hepatitis B in women who persisted high in 2016 and 2017.

Implementing a prevention program for Hepatitis B transmission from mother to child at first-level health facilities is very important to eliminate Hepatitis B transmission from mother to child so that the government's target is to eliminate mother-to-child Hepatitis B transmission can be achieved. Therefore, this study aims to analyze the implementation of the prevention program for Hepatitis B transmission from mother to child in PHC A and B Surabaya City in 2019.

To the authors' knowledge, no one has ever conducted qualitative research on the prevention program for hepatitis B transmission from mother to child, especially in Surabaya. Several previous studies have taken a quantitative approach and focused more on factors influencing early detection and hepatitis B vaccination. At the same time, this research explores how programs are implemented, from health promotion, surveillance, early detection to case management. The results of this research are likely to be input or evaluation material for the Health Office, policymakers, and especially PHC related to the policies being implemented.

## METHODS

This research was a study with a qualitative approach and descriptive explorative research methods with triangulation validity testing sources (in-depth interviews and previous document review). In-depth interviews with public health center staff and pregnant women were conducted to see from both perspectives. There was no population or sample in qualitative research, but there are subjects to be studied. The sampling technique in this study was purposive sampling. The number of subjects in this study was four informants from PHC A, namely Communicable Disease Eradication (P2M) coordinator, Maternal and Child Health (MCH) coordinator, a midwife in charge of Hepatitis B, and pregnant women.

In comparison, the informants from PHC B consisted of 5 informants, namely Hepatitis B cadres, P2M coordinator, MCH coordinator, a midwife in charge of Hepatitis B, and pregnant women. Primary data were obtained from in-depth interviews, and secondary data in this study were obtained from the document review. This study was conducted from January until June 2020 at PHC A and B, Surabaya. The data analysis stage used Colaizzi's steps, namely transcription, determining keywords, grouping respondent answers

into various categories and integrating the overall results of the influencing factors into a descriptive narrative form. This research was conducted after obtaining a recommendation from the ethical review team of the Faculty of Medicine Universitas Airlangga, and it was declared feasible based on certificate Number 197/EC/KEPK/FKUA/2020.

## RESULT

Implementing a prevention program for Hepatitis B transmission from mother to child based on the Minister of Health Regulation No. 52 of 2017 consisted of four activities: health promotion, health surveillance, early detection, and case management.

### Health Promotion

Socialization regarding the prevention program for Hepatitis B transmission from mother to child at PHC A and B was carried out to all employees through monthly meetings. It can be happened to independent practicing midwives (BPM) in the PHC working area through facilitative meetings so that BPM in the future can provide counseling to pregnant women patients for conducting antenatal activities at the PHC. Apart from socialization, training on this program has also been obtained by PHC A and B. The particular health promotion strategy carried out by PHC A included the use of Integrated Healthcare Posts and Mobile PHC (*Pulling*), while PHC B included Integrated Healthcare Posts and Hepatitis B cadres. Besides providing counseling, Hepatitis B cadres also assisted pregnant women infected by Hepatitis B and mothers infected by Hepatitis B who have babies less than 1-year-old.

*"I got a certificate as a cadre on September 26, 2019. There are a total of 10 cadres. Previously, the activity started with the name I-HBV (Inhibit Hepatitis B Virus Infection) under the auspices of a doctor from Airlangga University (UNAIR). This*

*event was held on to tackle the high number of hepatitis B cases in PHC B. The I-HBV activity was training, and it goes directly to the community. We got guidelines about Hepatitis B and provision to go to the community to be ready and not nervous."* (Cadre of Hepatitis B in PHC B)

*"Hepatitis B is jaundice. The signs are yellow eyes and nails, and swollen feet. Pregnant women infected by Hepatitis B have many risks, can transmit, but can be prevented by immunization."* (Cadre of Hepatitis B in PHC B)

*"Every month, we hold meetings with Family Welfare Development (PKK) women and conduct counseling to them. Patients from PHC are monitored, and if we are asked by PHC staff, we will also take the patient to the PHC for a laboratory check. So far, we have four people. Two of them are women who are also Hepatitis B patients. We are coordinating with the PHC in the form of contacting patients when asked by the PHC, especially for patients who disobey appropriate immunization, etc. We also have a WhatsApp group for coordination. Every month, we conducted training in PHC from doctors administering I-HBV and have had meetings several times. If only for the cadres meeting themselves, we only got together once for sharing."* (Cadre of Hepatitis B in PHC B)

The obstacle faced by cadres is being asked difficult questions when conducting counseling.

*"if there is a question that cannot be answered during counseling, we have to look at the book first or ask the doctor by chat, there are participants in the counseling moment who do not pay attention, so it would be better if health promotion is door to door."* (Cadre of Hepatitis B in PHC B)

Health promotion was carried out by PHC A and B directly, but also, at PHC B provided leaflets as a medium for health education. During counseling at PHC A, the information conveyed did not specifically discuss Hepatitis B, namely information related to pregnant women and how to

register and the intended poly when they were at PHC. At the same time, PHC B provided information primarily on early detection of Hepatitis B, besides explaining the definition of Hepatitis B, its causes, symptoms, prevention, and treatment.

The PHC has also installed service channels to provide convenience and certainty of service to the community to make services easier. The flow of MCH services at PHC A was that after entering the MCH poly, patients could go to the general poly, nutrition poly, dental poly, or laboratory. After getting the examination results, the patient can be referred to the hospital or directly to the pharmacy and go home or reproductive health counseling. Meanwhile, the service flew at PHC B. After entering the MCH poly, patients who need a laboratory examination will go to the laboratory and return to the MCH poly again. If they did not need a lab examination, the patient would immediately take the drug at the pharmacy and go home. The patient from the MCH poly who also needed a nutritional consultation and sanitation will conduct a nutrition or sanitation consultation and return to the KIA poly again afterward.

### Health Surveillance

The recording of Hepatitis B cases in PHC A is carried out in two fields. They recorded the Hepatitis B early detection registration form (RR DDHB) and the immunization monitoring form by MCH poly. They filled out the information system and digestive tract infection disease (SIHEPI) form online by P2M. Recording in the SIHEPI format included the date of early detection, patient identity, pregnancy status, HBsAg examination results, treatment and referral status, delivery, and monitoring of infant hepatitis (0-12 months). Recording in the RR DDHB format for pregnant women included the date of registration, the identity of the pregnant woman, pregnancy status, history of hepatitis symptoms, history of hepatitis

detection and examination results, history of blood transfusions, history of hemodialysis, history of having other sex partners, history of using drugs and syringes, history of hepatitis B immunization status, history of one domicile with hepatitis B sufferers, history of HIV and CD4 examination and results, history of taking ARVs, history of suffering from symptoms of sexually transmitted diseases in the last 1 month, history and examination results after early detection (HBsAg, Anti Titer HBs, SGPT, Anti HBe, HBeAg, HBV DNA), recommendations given if HBsAg is reactive (check anti-HBS, monitors, and therapy), place and time of delivery, monitoring of infants (date of immunization HB0, HBIG, DPT/HB1 (given in the form of pentavalent immunization), DPT/HB2 (given in the form of pentavalent immunization), DPT/HB3(given in the form of pentavalent immunization), and HBsAg examination results and anti-HBS titer), and maternal immunization and maternal counseling. Last, monitoring forms for pregnant women with hepatitis B and infant immunization include the date of registration, the identity of the pregnant woman, pregnancy status, estimated delivery, date and place of delivery, weight and length of the baby, method of delivery, the identity of the baby, date of HBIG immunization, date of HB < 7 days, BCG, P1, Penta 1, P2, Penta 2, P3, Penta 3, P4, MR, and additional immunizations.

Based on Table 1, the results of the documentation review showed that the difference in performance achievement of early detection of Hepatitis B in the recording carried out by PHC A was 39.9%. This condition was due to the difficulty in retrieving separate data between each field which held many PHC programs. Meanwhile, recording at PHC B from filling in the RR DDHB form for pregnant women to the SIHEPI form was only implemented by midwives from the MCH poly.

**Table 1.** Hepatitis B Early Detection Coverage in Pregnant Women at PHC A in 2019

Type Form	Number of Targets	Number of Early Detection		Performance Achievements (%)	
	2019 year	RR DDHB Form	SIHEPI Form	RR DDHB Form	SIHEPI Form
Total	1,593	1,585	949	99.5	59.6

Also, filling in the forms at both PHCs was incomplete, namely that there was monitoring that was not filled in, 17 out of 33 (51.5%) and 13 out of 33 (39.4%) columns that were not filled in the RR DDHB form for pregnant women at PHC A and B, respectively (Table 2).

Meanwhile, the recording was also carried out in pregnant women's Maternal and Child Health book.

*"The result of test lab are recorded in the MCH Handbook" (IP1)*

*"The results are recorded in the MCH book because when I wanted to give birth, the doctor at the hospital knew that I was Hepatitis B positive from that book" (IP2)*

All recorded data will be exported online to the Surabaya City Health Office and will be validated once every 3 months.

The data obtained by PHC A will be analyzed to get an overview of the coverage of early detection, the management outcomes of referring to pregnant women. Besides that, data on pregnant women in both PHCs will be grouped based on delivery time to recap the number of HBIG vaccines that need to be prepared.

Barriers to conducting this surveillance.

*"Yes, there are separate data on different computers, and it makes it difficult to retrieve" (PP1)*

*"One officer holds many programs." (PP2)*

*"Yes, officers are lazy to input data, and now the entry in the application also takes time, and SIHEPI still has to update, so sometimes, there is double data." (BP2)*

**Table 2.** Completeness of Filling in the RR DDHB Form Column in PHC A and B

Completeness of Filling in the RR DDHB Form Column	PHC A (%)	PHC B (%)
Completely filled	6.1	6.1
Partially Filled	42.4	54.5
Not Filled	51.5	39.4

### Early detection

Pregnant women who visit PHC are required to carry out Hepatitis B surface Antigen (HBsAg) tests. In 2019, 99.5% of pregnant women who visited PHC A had early detection, and 1.7% were reactive HBsAg. Meanwhile, 97.9% of pregnant women performed early detection of Hepatitis B, and 3% of them were reactive HBsAg. During pregnancy visits, information was conveyed to pregnant

women to detect early. However, some pregnant women say that what they did was laboratory tests without knowing what benefits they got. Post-early detection counseling was delivered to all pregnant women with reactive HBsAg, but those with non-reactive HBsAg have not been carried out according to guidelines.

The obstacles to implementing early detection activities in both PHC are lack of

reagents and indiscipline of pregnant women patients to control.

*"Discipline of the patient for routine control."* (PP1)

*"Sometimes, stock of reagents was empty."* (BP2)

The empty reagent preparations for laboratory tests became one of the obstacles in early detection activities in PHC B. This was due to PHC B employees who had not had time to report the reagents to the city pharmacy building (GFK) or the empty reagent stock at GFK.

**Case Management**

Management of cases in pregnant women with reactive HBsAg, namely being referred to the hospital and asked for their availability to sign a vaccine request for their baby. Meanwhile, the treatment for infants of mothers with reactive HBsAg was administering Hepatitis B Immunoglobulin (HBIG) vaccine <24 hours. In addition, there was immunization for HB0 <24 hours, HB1 (given in the form of pentavalent immunization), HB2 (given in the form of pentavalent immunization), HB3 (given in the form of pentavalent immunization), and checking for HBsAg at the age of 9-12 months.

The number of pregnant women with reactive HBsAg at PHC A with an estimated date of birth in 2019 is 25 people. As many as 16 out of 25 or 64% were recorded as having been delivered at the hospital, and 9 out of 25 or 36% had no data regarding where the delivery was carried out. In contrast, the number of pregnant

women with reactive HBsAg at PHC B with an estimated date of birth in 2019 was 23 people. As many as 20 out of 23 or 87% were recorded as having been delivered in the hospital. 1 out of 23 or 4.3% was recorded to have delivered in independent midwives, and 2 out of 23 or 8.7% had no data regarding their place of delivery.

The case management coverage in infants of mothers with reactive HBsAg can be seen in Table 3. The coverage of case handling was not optimal due to pregnant women who were late in carrying out early detection of Hepatitis B so that they did not get the HBIG vaccine. Also, the lack of monitoring of mothers with reactive HBsAg by PHC employees and the high number of population mobility in PHC A and B working areas so that some pregnant women and their babies are difficult to monitor.

The obstacles to implementing case management for hepatitis B transmission from mother to child are inactive of monitoring patients and their infants. Hepatitis B patients did not report to the health center when they moved to another village, thus complicating the immunization monitoring.

*"Monitoring is not active. Some patients were missing, some patients who had received vaccines moved to the village with no news or notification. Patients sometimes give fake addresses or addresses outside the work area of the PHC. Usually, we only ask for monitoring and evaluation from their area so as not to interfere own territory."* (BP2)

**Table 3.** Coverage of Case Management in Infants of Mothers with HBsAg Reactive in 2019

Intervention	PHC A			PHC B		
	Number of targets	Number of case management	Coverage (%)	Number of targets	Number of case management	Coverage (%)
HBIG	25	13	52	22	20	90.9
HB0	25	12	48	22	20	90.9

Intervention	PHC A			PHC B		
	Number of targets	Number of case management	Coverage (%)	Number of targets	Number of case management	Coverage (%)
HB1	23	10	43.5	20	15	75
HB2	22	11	50	20	15	75
HB3	24	12	50	19	12	63.2
HBsAg Test	27	2	7.4	24	14	58.3

## DISCUSSION

In this study, the authors analyzed the implementation of the prevention program for hepatitis B transmission from mother to child in PHC A and B, namely health promotion activities, health surveillance, early detection, and case management. The findings showed there were different strategies in health promotion activities in both PHC and not specified in the education material at PHC A. For Health surveillance activities, there were gaps in data recording in PHC B and incomplete form filling in both PHCs. In early detection, activities found coverage of early detection that met the target. Vacancy of rapid test reagents and minimal post-early detection counseling was carried out, in case of management activities found coverage of HBIG, HB0, HB1, 2, 3 vaccination and HBsAg examination in infants aged 9 -12 months which is still below 100%.

This study found that both PHC health promotion strategies and utilizing integrated healthcare posts activities were empowered several PKK mothers around the PHC area to become hepatitis B cadres in PHC B. In other studies, there was a significant relationship between the role of health workers and the provision of Hepatitis B immunization (Helmi, 2008; Rachman, Handayani and Ridwan, 2015; Harahap, 2016). Hepatitis B cadres as community leaders also have a significant role in giving Hepatitis B immunization

(Helmi, 2008; Harahap, 2016). The role of Hepatitis B cadres in PHC B is providing counseling and assistance to pregnant women with Hepatitis B or to babies of mothers with Hepatitis B. They do not immunize properly, which can be a consideration for other health centers with a high number of pregnant women with Hepatitis B and empower the community.

However, the material presented by PHC A to the public was not specific to discussing hepatitis B. It was limited to only discussing the health of pregnant women in general, while PHC B discussed the definition, symptoms, causes, prevention until management. Another study said that understanding the material presented to pregnant women and mothers with Hepatitis B is required when conducting counseling. It was due to the mother's good knowledge about Hepatitis B has a significant effect on the mother's behavior in immunizing her baby for Hepatitis B (Helmi, 2008; Pontolawokang, Korah and Dompas, 2016). In a study in northern Vietnam, educational exposure to Hepatitis B during pregnancy was the only factor that influenced pregnant women's knowledge about Hepatitis B (Hang Pham et al., 2019). Education for pregnant women about Hepatitis B during the first trimester also has a big influence on the actions of pregnant women to carry out early detection of Hepatitis B (Putri, Hanum and Simanjuntak, 2019; Effendy and Yustiari, 2019). In PHC Sei Jang, Tanjung Pinang study found that educational exposure can use individual counseling

methods and leaflet media (Rahmadona, Lestanti, and Respatiningrum, 2018). The use of flipchart media also provides a significant difference in knowledge between before and after exposure to education about Hepatitis B (Dewi, 2019). Also, (Ningsih and Rahmawati, 2017; Mukhoirotin and Ismawanto, 2015; Rachman, Handayani, and Ridwan, 2015) said a significant relationship between maternal knowledge about Hepatitis B immunization and the mother's decision to join the immunization program. For that, efforts are needed to increase maternal knowledge about Hepatitis B and immunization. This can be done by providing education about the definition, causes, route of transmission, symptoms, prevention of transmission, and treatment of Hepatitis B, as well as information about Hepatitis B immunization, through the delivery of immunization schedules, service places, and reactions that generally occur after immunization.

The findings related to health surveillance in this study were that the recording of the two health centers was carried out offline using the RR DDHB form and the mother and child monitoring form. In contrast, the online recording was carried out at SIHEPI. It was found that a gap in data filling in PHC B was 39.9% between RR DDHB and SIHEPI. Another study about Prevention Mother to Child Transmission (PMTCT) HIV services in Depok City found that there was a gap in recording the coverage of HIV early detection from the family health (Kesga), HIV, and Aids Information System (SIHA) forms of 7.2%. Using each form according to their respective programs was due to limited personnel, time, and lack of understanding of implementing officers in taking notes (Puspitasari and Junadi, 2018). According to (Suharni and Hersumpuna, 2015), recording and reporting integrated with a general information system will increase the effectiveness and efficiency of recording and reporting. It takes a sense of responsibility and a good understanding in

implementing activities at PHC A. It must also be recording the results of screening and monitoring in a form integrated with SIHEPI from the Ministry of Health of the Republic of Indonesia so that the data obtained can be appropriately documented. The gap in the number of cases recorded in the RR DDHB and SIHEPI PHC B forms is due to the filling of offline and online forms by two people from different programs, namely offline filling by midwives at the MCH poly online filling by P2M employees. This is different from PHC A, whose filling is held by a midwife in charge of Hepatitis B in the MCH Poly.

Other findings related to health surveillance in this study were the incompleteness of filling out the data on the form in PHC A and B, namely 51.5% and 39.4% unfilled, respectively. In a study regarding the description of recording and reporting of maternal health at MCH Local Area Monitoring (PWS) in Jember, the recording could not be done optimally on all forms because types of forms had to be filled in are too much. At the same time, the workload of services was high. So automated data collection was needed (Rani and Hargono, 2012). In addition to computerized data collection, there are many programs in both PHCs. Some of them have information systems such as the Integrated Tuberculosis Information System (SITT), the HIV AIDS Information System (SIHA), the PHC information system, and other information systems. Those input data in each other information system and move independently.

For this reason, an integrated system that contains much data is needed by only doing input once. It will minimize repetitive data entry and establish cross-program coordination in efforts to deal with health problems. The possibility that the form filling is incomplete is the number of programs running in each poly. The large number of administrative forms that also need to be completed make filling in the form incomplete because the work is done two times, namely filling offline than online



to SIHEPI. It requires more time and effort and good coordination.

Both PHCs have exceeded the target coverage for early detection of Hepatitis B in pregnant women in 2019, which is 70% in the Minister of Health Regulation No.52 of 2017, and the prevalence of pregnant women with early detection of hepatitis B with HBsAg reactive results in PHC A and B of 1.7% and 3%, respectively. The achievement of Hepatitis B early detection coverage in pregnant women shows the quality of MCH services and contributes to detecting Hepatitis B cases (Ministry of Health of the RI, 2017). Some pregnant women at PHC B did not have their HBsAg checked because the rapid test reagent stock at PHC B was empty several times in several months. A better health service strategy is needed to improve the control and prevention of Hepatitis B to increase Hepatitis B screening for all pregnant women, especially in terms of stocking reagents or laboratory medical devices that are still available (Wuan and Molina, 2018). Thus, the exchange of data regarding reagent stock, both at PHC B and GFK, can be a strategy so that the implementation of early detection activities can run optimally. Research design aimed to fulfill the internal demand process and distribution of pharmaceutical preparations (drugs and medical supplies) in health services in Surabaya. Several problems in the supply chain process for health services in Surabaya are the availability of pharmaceutical preparations at GFK. The ability to supply pharmaceutical preparations (drugs and medical supplies) can result in PHC pharmaceutical preparations running out before the next period of demand for pharmaceutical preparations. The accuracy of planning pharmaceutical preparations is very low. The deficit of pharmaceutical preparations at PHC may require PHC to make sudden requests to GFK. Hopefully, pharmaceutical preparations can be fulfilled immediately so that this problem requires intervention from health service providers

and drug providers by providing information on drug availability at GFK (Dzulquarnain, Usman, and Lestari, 2016). To avoid the same thing in the future, PHC B and GFK should improve the data exchange relationship between reagent availability at PHC and GFK because the availability of resources (reagent) is crucial to implement this prevention program.

Also, pregnant women in PHC A and B as informants in this study did not know that early detection was carried out, but what they did know was blood tests. In another study at the PHC Sei Jang, Kepulauan Riau, pregnant women have already done blood tests at the PHC. However, some pregnant women do not know about this examination, one of which is for early detection of Hepatitis B. However, after intervention in health education, the result was an increase in the average score of pregnant women's knowledge about Hepatitis B compared to before being given health education (Rahmadona, Lestanti, and Respatiningrum, 2018). Providing information on early detection to pregnant women who visit PHC is very important to make pregnant women understand more about the reasons for early detection activities and avoid transmission of disease from mother to child. Counseling activities after early detection of Hepatitis B were also carried out by both PHCs but were more aimed at pregnant women with reactive HBsAg. Based on the Minister of Health Regulation No. 52 of 2017, pregnant women receive counseling after conducting early detection. They got messages to keep the results negative, suggest that they enter the class of pregnant women, ask their partners to be tested for Hepatitis B, and avoid risky behavior (Ministry of Health of the RI, 2017).

The findings obtained in case management activities are that the coverage of giving HBIG, HB0, HB1, HB2, HB3 is still below the coverage targeted according to the Minister of Health Regulation No.52 of 2017, which is 100%. Giving HB0

followed by the completeness of giving HB1, 2, and 3 can help prevent the vertical transmission of Hepatitis B, but it is even better if combined with HBIG vaccine <12 hours (Buckley and Strom, 2016). This study is also supported by a systematic review of 30 years of experience from (Van Den Ende et al., 2017), which shows that the efficacy of giving 3 doses of hepatitis B vaccine and giving HBIG to infants of mothers with reactive HBsAg is 96% when examined at 5 years of age. In the study in Magelang, the coverage of HB0 to infants of pregnant women with reactive HBsAg in 2014-2016 was 100%, and the vertical hepatitis B transmission rate in the study was 0% (Ahmad and Kusnanto, 2017). In another study by (Purwono et al., 2016), Indonesia's low birth dose coverage might contribute to the endemicity of HBV infection among children in Indonesia. However, a universal Hepatitis B vaccination program for the infant was adopted in 1997. Therefore, the coverage of HBIG and HB0 vaccines <24 hours after delivery plays a major role in terminating the vertical transmission of hepatitis B, and the coverage of implementation must be increased. Implementation interventions to increase HB0 coverage included promoting community awareness of the need for HB0 vaccine, building capacity and knowledge of health workers for HB0 administration, and promoting delivery in health personnel. It was because supporting pregnant women to deliver in health facilities can reduce neonatal mortality and morbidity by ensuring the mother and baby are examined by a health professional within 24 hours of delivery to increase HB0 coverage (Allison et al., 2017).

Meanwhile, the coverage of HBsAg examination in infants aged 9-12 months from mothers with reactive HBsAg in 2018 and 2019 at PHC A and B, respectively, was 7.4% and 58.3%. The coverage of the HBsAg examination is still below the target coverage based on the Minister of Health Regulation No. 52 of 2017, namely 100%. In a study conducted by (Yang et al., 2020),

regarding the prevention program of mother-to-child hepatitis B transmission in the Republic of Korea, the low PVST rate is also a concern, even though several efforts have been made since 2015. Health center officers are encouraged to use post or cell phones to remind mothers about the baby for examination. Besides that, it also adds a verification step at the visit of children aged 9-12 months to identify babies who missed vaccinations. Vaccination coverage, which is still below the target of the Minister of Health Regulation No.52 of 2017, is associated with the sudden demand for HBIG approaching the time of delivery that cannot be fulfilled, low infant monitoring, and the lack of participation and public awareness in vaccination. This can be seen from the presence of pregnant women who move houses after receiving the HBIG vaccine without notifying PHC or cadres, which can make monitoring difficulties. Besides that, monitoring is also low because of the high workload of PHC staff because each employee implements many programs. An integrated information system between health facilities can be a solution for patients who are migrants and those who have moved so that they can continue the process of treating their illness wherever the patient is in Indonesia. Also, health workers' role and maternal knowledge have a significant relationship with Hepatitis B immunization (Helmi, 2008; Rachman, Handayani, and Ridwan, 2015). However, PHC B, which has Hepatitis B cadres, has higher coverage than PHC A; this can be a strength to back up the limited time or staff of PHC staff in monitoring vaccinations so that vaccination coverage and HBsAg examinations are high. For this reason, training and supervision of health workers are needed to raise awareness about the importance of Hepatitis B immunization and infant outreach by monitoring cohorts to increase the coverage of vaccines and complete immunizations.

## CONCLUSIONS

This study aims to determine how to implement a prevention program for Hepatitis B transmission from mother to child. Based on the description above, it can be concluded that the implementation of health promotion activities has been running. However, the implementation has not been optimal, especially in PHC A, because the material presented has not led explicitly to early detection and prevention of infection with Hepatitis B immunization. Health surveillance activities have been running but not yet optimal in both PHCs; there was a gap in recording the coverage of early detection of Hepatitis B in PHC A and incomplete form filling in both PHCs. Early detection activities have been running and achieved the target coverage. However, the quick test reagent stock was empty at PHC B, and the pre-or post-early detection counseling activities are still not optimal in both PHCs. Case management activities have also been running but are still not optimal because the coverage of HBIG, HB0, HB1, 2, 3, and HBsAg examinations is still far below the target set based on the Minister of Health Regulation No. 52 of 2017.

There are several recommendations that researchers can provide. Implementing health promotion activities can make more efforts to convey messages of early detection and immunization activities to the community in their working area. Hence, coverage of early detection activities and understanding pregnant women has to do with the benefits of early detection and Hepatitis B immunization. It requires commitment and a good understanding between activity implementers in recording early detection results that have been integrated with SIHEPI. Therefore, it is better if the executors of these activities gather to equalize perceptions and make good commitments in the recording. MCH poly midwives should improve the infant monitoring system from mothers infected by Hepatitis B to increase the coverage of

complete immunization and increase the coverage of HBsAg examination in infants.

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