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Overview of Basic Immunization Coverage in Infants During the Covid-19 Pandemic in North Sumatra

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Abstract

Immunization is a health program that aims to increase immunity or avoid a disease. Around 800 thousand children in the whole of Indonesia risky tall to diseases That can prevented with vaccines ie tetanus, diphtheria, measles, rubella, as well as polio due to the COVID-19 pandemic in Indonesia. This research uses descriptive methods and this research uses secondary data obtained from the North Province Health Office. During the Covid-19 pandemic, immunization coverage was obtained, namely in 2020 infants who had received complete immunization, namely 221937 infants while those who received incomplete immunization were 70953 infants. Furthermore, in 2021 those who have received complete immunization are 215919 babies while those who have received incomplete immunization are 51617 babies. In 2022 those who have received complete immunization are 243320 babies while those who have received incomplete immunization are 23675 babies. Infants aged 0 - 1 1 month in North Sumatra Province have not all been fully immunized due to the side effects of the Covid-19 pandemic.

Keywords: Immunization; Babies; Covid-19 Pandemic; North Sumatra Province

Introduction

Immunization is something that is done to increase the body's immunity against a disease. Infectious diseases that can be prevented by immunization (PD3I), namely diseases that can be prevented decreased, or even expected to be eliminated with the implementation of this immunization program. Immunization I have one role important in maintaining health primary and specifically in reducing the number of deaths babies. Until the moment, immunization has proven to become a program health public effective and efficient for preventing and lowering pain, disability, and death consequences of PD3I (Irawati, 2022).

Minister of Health Regulation No. 42 of 2013 concerning the Implementation of Immunizations Article 3 states that the government has required each individual to carry out immunizations to protect the person concerned and the surrounding community from certain infectious diseases. The government, families, and parents are required to immunize babies to avoid certain diseases (Nasution, 2022).

The impact of the COVID-19 pandemic can be felt by all corners of society and has disrupted life sectors such as the economy, education, and health services sectors which are hampered. Health services and programs were disrupted due to decreased visits to health facilities such as the *Puskesmas* and *Posyandu* due to adjustments to the Implementation of Restricting Community Activities (PPKM)

Around 800,000 children in Indonesia risk tall to diseases That can prevented with vaccines like tetanus, *diphtheria*, measles, rubella, as well as polio. Based on the data routine from the Ministry of Health RI, vaccination experience declined significantly since the beginning of the pandemic COVID-19, from 84.2% on year 2020 become 79.6% on year 2021. Decline vaccination routine recently This is. Several factors between other disturbance chain supply, restrictions activity, and availability of service health for power Work, cause closing part service immunization during the peak pandemic COVID-19 (UNICEF Indonesia, 2022).

Complete basic immunization coverage in North Sumatra Province in 2016 was 79.4%, in 2017 was 82.5%, and in 2018 there was an increase of 84.0%. The complete basic immunization in 2016-2018 tends to fluctuate or not be fixed due to the replacement of the tOPV vaccine, namely to bOPV, the introduction of the IPV vaccine, and the promotion and introduction of the Measles Rubella (MR) vaccine. In addition to the dense additional immunization activities, the availability of vaccines, especially new vaccines, also experienced

delays, and limited numbers of vaccines, and public rejection of immunization (North Sumatra Provincial Health Office, 2020).

Based on this background exposure, there are several descriptions of basic immunization coverage in infants. Therefore, the authors in this study aim to describe the coverage of basic immunization in infants during the Covid-19 pandemic in North Sumatra Province in 2020 – 2022

Methods

This research methodology uses quantitative research with a descriptive approach. Sampling was done by random sampling. Determination of the number of samples using the Slovin. The population in this study were all infants who carried out basic immunization for infants aged 0-1 1 month in 2019 - 2022 in North Sumatra Province. population in this study was 131 medical records.

Data analysis involved descriptive statistical approaches, including frequency calculations, percentages, and averages to portray the basic immunization coverage during the COVID-19 pandemic. Data collection was conducted through direct observation of infant medical records in selected healthcare facilities, utilizing pre-prepared forms to record relevant information such as vaccination dates, vaccine types administered, and infant identification numbers. Additionally, data were obtained through interviews with healthcare personnel responsible for administering basic immunization. These methods ensured a comprehensive overview of basic immunization coverage and compliance with vaccination schedules, contributing to a thorough understanding of the research outcomes.

Results

Table 1. Distribution of Basic Immunization in North Sumatra Province

No	Immunization Type	2020			2021			2022		
		Number of Babies	Achievements		Number of Babies	Achievements		Number of Babies	Achievements	
			Amount	%		Amount	%		Amount	%
1	HB0	292890	239434	80	267536	237434	85.4	266995	237557	85,3
2	BCG	292890	245880	82,2	267536	225687	81.2	266995	251774	90.5
3	DPT/HB1	292890	249248	85,1	267536	226621	84.7	266995	254386	95.3
4	DPT/HB2	292890	245142	83.7	267536	219735	82,1	266995	250995	94
5	DPT/HB3	292890	241057	82.3	267536	215648	80.6	266995	248437	93
6	Polio 1	292890	249272	83.3	267536	236390	85	266995	253610	91.1
7	Polio 2	292890	248434	84.8	267536	235436	88	266995	252561	94.6
8	Polio 3	292890	244404	83,4	267536	228213	85,3	266995	248421	93
9	Polio 4	292890	241992	82.6	267536	224389	83.9	266995	247486	92.7
10	IPV	292890	88947	30,4	267536	164051	61.3	266995	201312	75,4
11	Measles/Mr	292890	234120	0	267536	231173	0	266995	253339	0

Table 2. Distribution of Complete and Incomplete Basic Immunizations for 2020-2022 in North Sumatra

No	Year	Provision of Basic Immunization	Award Amount	Amount
1	2020	Complete	221937 (75,8 %)	292890
		Incomplete	70953 (24,2 %)	
2	2021	Complete	215919 (80,7 %)	267536
		Incomplete	51617 (19,3 %)	
3	2022	Complete	243320 (91,1 %)	266995
		Incomplete	23675 (8,9 %)	

Discussion

Based on Table 1, it can be seen that the coverage of HBO immunization in 2020 is 80%, then in 2021 it will increase to 85.4%, then in 2022, the coverage of HBO immunization will decrease but very little at 85.3.

Then the coverage of BCG immunization experienced a change from 2020 of 82.2%, in the following year in 2021 it decreased to 81.2% then in 2022 there was an increase again to 90.5%. Then the DPT/HB1 immunization coverage in 2020 will be 95.3 %. and became the highest number of DPT/HB1 immunization coverage during the post-pandemic period. Then in 2020, DPT/HB2 immunization coverage was 83.7%, then in 2021 it decreased to 82.1% and this figure changed in 2022 to 94%. The DPT/HB3 immunization coverage in 2020 is 82.3%, then in 2021 it will decrease to 80.6% and this coverage rate will increase again in 2022 by 93%. Then the Polio 1 immunization coverage for the 2020 period has experienced a consistent change, namely by 83.3%, increasing to 85% and in 2022 reaching 91.1%.

Then the coverage of Polio 2 immunization in 2020 is 84.8%, then in 2021 it will increase to 88%, and in 2022 it will continue to increase to 94.6%. The coverage of Polio 3 immunization in 2020 is 83.4%, then in 2021 it will increase to 85.3% and this figure will change by 2022 to 93%. Then the coverage of Polio 4 immunization in 2020 was 82.6%, then in 2021 it increased to 83.9% and this figure changed in 2022 to 92.7%. Then the IPV immunization coverage rate from the 2020 period increased to 30.4 doubled in the following year, namely in 2021 to 61.3% and in 2023 coverage of 75.4%. Then the coverage rate for Measles / IMR immunization in 2020-2022 the coverage rate has not changed at 0%. So it can be concluded that the coverage rate for basic routine immunization in North Sumatra Province in 2020-2022 is highest in 2022 for DPT/HB 1 basic routine immunization (95.3) while the lowest is in the Measles/MR period (0%).

Distribution of Complete and Incomplete Basic Immunisation Table 2 explains that in 2020, the number of babies who received complete immunization was 221937 babies (75.8%). In 2021, the number of babies who received complete immunization was 215919 babies (80.7%). received complete immunization for as many as 243320 babies (91.1%).

From the results of the study, data obtained from the North Sumatra Provincial Health Office in 2020, the number of babies who received complete immunization was 221937 babies (75.8 %), and babies who did not get complete immunization were 70953 babies (24.2%). The recent decline in routine immunization coverage has been due to a variety of factors including disturbance chain supply, rules activity restrictions, and reduced availability of health workers, which led to a partial suspension of vaccination services at the peak of the COVID-19 pandemic. The survey The Ministry of Health and UNICEF carried out in 2020 also found that half of the parents and caregivers surveyed were reluctant to take their child to a health facility for fear of contracting COVID-19 or fear that there is no proper health protocol.

Complete basic immunization coverage has decreased during the COVID-19 pandemic due to many factors. Some of them are due to a lack of manpower and limited information media in remote areas causing a lack of outreach, budget efficiency, and no cooperation in each cluster, perceptions of halalness in rural areas, busy parents in urban areas, non-compliance with health protocols in rural and remote areas, perception of no benefits in urban and remote areas, anxiety and fear of contracting COVID-19 in each cluster. The diversity of perceptions in each cluster led to a decrease in complete basic immunization coverage during the COVID-19 pandemic in Pesisir Selatan District so clustering on the implementation of complete basic immunization is necessary (Trianto et al., 2022).

The effects of the COVID-19 pandemic have greatly affected the reduction in immunization coverage rates and the performance of VPD surveillance in Indonesia. Immunization coverage data from January to April 2020 compared to 2019 during the same period showed a decrease from 0.5 % to 87%. The COVID-19 pandemic has also had an impact on the measles-rubella/CRS elimination program where Indonesia is targeting measles-rubella/CRS elimination in 2021 for the Java and Bali regions (Kaharuddin et al., 2022).

Not only was the decrease caused by the COVID-19 outbreak, previous research also explained that there was a significant relationship between mothers' knowledge and immunization. The better a person's knowledge about immunization, the more likely it is that their child will be fully immunized, and vice versa, the lower a person's knowledge about immunization, the less likely their child will be immunization because they think that immunization is not necessary, it only makes the baby sick after being immunized (Mely et al., 2022)

Apart from that, research (Asrina et al., 2021) also mentions that family support for mothers is very influential in providing basic immunizations to infants. Family support can strengthen maternal behavior and can inhibit maternal behavior. Family support that strengthens mother's behavior includes support for immunizing her child so that she has immunity and avoids disease (especially diphtheria, pertussis and tetanus) reminding her baby's immunization schedule, reminding that the hot condition of the baby is an immunization reaction and a condition that is not dangerous, not a contraindication for the next immunization. Meanwhile, family support that weakens the mother's behavior to immunize her baby is the attitude of the family that does not support the mother because of the side effects of immunization after the baby has been immunized. Such as the baby gets hot and or there is a lump at the injection site, or redness at the

injection site, the baby is not allowed for the next immunization.

Apart from the fear of being infected with COVID-19, other factors that have disrupted routine immunization services are restrictions on mobility and limitations in accessing health services during the COVID-19 pandemic. Movement restrictions and social distancing: Movement restrictions and social distancing during a pandemic have made it difficult for parents to bring their babies to health centers or *Puskesmas* to get immunized. The following are among the COVID-19 that have had a major impact on reducing basic immunization coverage in infants:

1. During the pandemic, many health resources were diverted to treating COVID-19 patients, which resulted in reduced capacity to provide other health services, including immunization services.
2. Fears and concerns: Some parents may be worried about taking their babies to places deemed to be at risk of contracting COVID-19 or concerned that vaccinations could lead to infection or other illnesses.
3. Priority shift: During the pandemic, many countries focused on handling COVID-19 and forgot about immunization programs. Some immunization programs have even been postponed or canceled to focus resources on handling COVID-19.

A decrease in the coverage of basic immunization in infants can lead to an increased risk of outbreaks of infectious diseases. Therefore, it is important to pay attention to and improve the coverage of basic immunization in infants during the COVID-19 pandemic. Efforts such as administering immunizations in a safe and sterile place, increasing education to parents about the benefits of immunization, and using information technology can help increase the coverage of basic immunization in infants.

Conclusion

In conclusion, ensuring continued basic immunization coverage in infants post-COVID-19 is crucial to prevent the spread of preventable diseases and maintain global immunization achievements. Key strategies include providing accurate information on immunization, improving accessibility to immunization services, involving community and religious leaders, engaging parents in decision-making, utilizing information technology, and fostering cross-sector collaboration. These efforts aim to rebuild trust and encourage parents to prioritize their children's immunization, thereby mitigating the risk of disease transmission.

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Author Contribution and Competing Interest

The author's contribution to this study was to collect data through the analysis of inpatient medical record files, conduct in-depth observations and interviews, analyze the results, and compile manuscripts.

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