COMPARATIVE ANALYSIS OF ROUTINE IMMUNIZATION POLICY DURING COVID-19 PANDEMIC IN INDONESIA, INDIA, AND PAKISTAN

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Abstract. Immunization is one of the most cost-effective public health interventions, averting an estimated 2 to 3 million deaths every year. Before the coronavirus pandemic, more than nearly 14 million children didn't receive any vaccines, and 19 million children below the age did not receive the recommended vaccines in 2019. COVID-19 is leaving many of the world's most marginalized children without access to immunization services. Some are from Indonesia, India, and Pakistan, including ten countries with the highest number of unimmunized and partially immunized children. The study aims to find out the differences in the policy of routine immunization programs during the COVID-19 Pandemic in Indonesia, India, and Pakistan in terms of policy actors, policy context, policy process, and policy content. The method used is a literature review from sources such as books, journals, and relevant government regulations and policies related to routine immunization programs during the COVID-19 Pandemic. Literature study shows that the three countries have some similarities in the policy actors, policy context, and policy process. The only difference is the policy content. The policy in the form of technical guidance by the Indonesian government is more detailed, comprehensive, and structured than the other two countries.

Keywords: Routine Immunization, COVID-19 Policy, India, Indonesia, Pakistan

INTRODUCTION

Immunization is one of the most cost-effective public health interventions to date, averting an estimated 2 to 3 million deaths every year. Routine vaccination aims to prevent the death caused by diphtheria, pertussis, tetanus, and measles in children under five. Yet around 19.4 million children around the world still remind unimmunized. About 60% of unimmunized children come from 10 countries; 3 are Indonesia, India, and Pakistan(1). UNICEF reported that almost a quarter of the total number of children worldwide (± 4.5 million children) unimmunized or not yet immunized come from South Asia, 97% come from India and Pakistan(2). In Indonesia. The proportion of vaccinated children aged 12-23 months is 58% lower than the National Routine Immunization Target of 93% (3).

Indonesia, India, and Pakistan are ten countries with the highest number of unimmunized and partially immunized children. Here is a comparison table of immunization coverage before the COVID-19 Pandemic according to WHO(4):

<table>
<thead>
<tr>
<th>Routine Immunization Coverage</th>
<th>India</th>
<th>Indonesia</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>amount of unimmunized/partially immunized children</td>
<td>1,403,000</td>
<td>472,000</td>
<td>794,000</td>
</tr>
</tbody>
</table>

Even before the coronavirus pandemic, more than nearly 14 million children didn't receive any vaccines, and 19 million children below the age of one did not receive the recommended vaccines against measles, polio, and other preventable diseases in 2019(2). The Corona Virus Disease 2019 (COVID-19), first founded in Wuhan Province of
China in December 2019. Some scientific data from WHO and UNICEF have concluded that at least 80 million children under one risked getting exposed to diphtheria, measles, and polio as the impact of COVID-19 Pandemic to the routine immunization program.

Now, COVID-19 is leaving many of the world's most marginalized children without access to immunization services. As the Pandemic continues and depending upon the speed of the COVID-19 vaccine roll-out, there is a risk of lasting negative impacts on routine immunization coverage. Continued disruptions and a low range of childhood immunizations could create pathways to disastrous outbreaks and well beyond diseases like measles, pertussis, Diphtheria, yellow fever, and polio\(^{(1)}\).

Indonesia, India, and Pakistan have also experienced a decrease in routine immunization coverage during the COVID-19 Pandemic. Since the first confirmed case of COVID-19 reporting, the range of routine immunization in the three-country has decreased. The difference in regular immunization coverage before and during the COVID-19 Pandemic can see in the following table:

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>Indonesia</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Routine Immunization Coverage</strong></td>
<td>Before</td>
<td>During</td>
<td>Before</td>
</tr>
<tr>
<td>%</td>
<td>94%</td>
<td>80-89%</td>
<td>90%</td>
</tr>
<tr>
<td><strong>amount of unimmunized/partially immunized children</strong></td>
<td>1.4 M children</td>
<td>3.5 M children</td>
<td>472,000 children</td>
</tr>
</tbody>
</table>

Immunization coverage data from January to April 2020 compared to 2019 during the same period showed a decrease from 0.5% to 87%. In East Jakarta, there was a sharp decrease in the number of essential immunization services from 3,890 in February 2020 to 2,009 in April 2020\(^{(5)}\). In Pakistan, from the beginning of the lockdown policy in March to May 2020, there was a decrease in the average number of daily routine immunization visits by 52.8%, which previously ranged from 5184 visits per day to 2450 visits per day in May 2020\(^{(6)}\). In India, a research journal on the readiness of primary health care facilities in the face of the COVID-19 Pandemic in India found that of the 51 health institutions studied, 48 of them (94.1%) had immunization services before the Pandemic. However, after the spread of COVID-19 cases in India, only 26 institutions (53.1%) remained who still organize routine immunization services\(^{(7)}\).

This paper aims to find out the differences and similarities in the policy of routine immunization programs during the COVID-19 Pandemic in Indonesia, India, and Pakistan in terms of policy actors, policy context, policy process, and policy content.

**METHODS**

The study used the literature review method. The literature review is conducting secondary data consisting of several sources such as books, national and international journals selected regarding the policies of routine immunization programs in Indonesia, India, and Pakistan during the COVID-19 Pandemic, as well as relevant government regulations and policy related to regular immunization programs during the COVID-19 Pandemic. The following Figure determined the search process:
The study was analyzed using a conceptual framework that refers to Walt and Gibson's policy analysis triangle theory (1994) in Ayuningtyas (8), consisting of 4 variables: Policy Actors, Policy Context, Policy Content, and Policy Process.

RESULTS AND DISCUSSION

Policy Actors

Actors may try to influence the policy process at the local, national, regional, or international level. Often they become parts of networks, sometimes described as partners, to consult and decide on policy at all of these levels(9). Actors who act in the continuity of routine immunization program policies during the COVID-19 Pandemic in Indonesia at the organizational level are the Ministry of Health as stated in the Regulation of the Minister of Health of the Republic of Indonesia Number 12 of 2017 concerning immunization implementation. There are the same main level actors in India and Pakistan. As in India, there is the Ministry of Health and Family Welfare. In Pakistan, they have the ministry of National Health Services, Regulation, and Coordination. The three countries have the same kind of Health Ministry as the central/government-level actor implementing routine immunization programs. The ministries of health act as the organization, while the ministers of health act as the individual actors in the continuity of regular immunization program policies during the COVID-19 Pandemic.

The organization/group actors familiar in the three countries are UNICEF and WHO at the international level. The three countries each have their National organization related to Immunization Program. Indonesia has the National Committee The Assessment and Prevention of Post-Immunization Follow-up Events as a national organization which is an independent expert team that aims to conduct studies on cases of suspected Adverse events following immunization (AEFI)(10). Another Indonesia’s national organization is the Indonesian Technical Advisory Group on Immunization (ITAGI), with the main task is to conduct policy analysis and determine the most optimal national immunization Policy and also advise the federal government on the formulation of strategies for the control of vaccine-preventable diseases through immunization(11). India has The National Committee of Health Mission with the main programmatic components include Health System Strengthening in rural and urban areas for Reproductive-Maternal-Neonatal-Child and Adolescent Health (RMNCH+A). One of the leading programs and indicators of RMNCH+A is Immunization (12). Pakistan has an Expanded Program on Immunization (EPI). However, it is coordinating under the Ministry of National Health Services and Regulation Coordination; the EPI heading by a National Programme Manager supported by a team of National Programme Manager and a team from government and development partners(13).

More actors have direct or indirect roles in the Immunization program during the COVID-19 Pandemic than those that have mentioned above in the three countries as mentioned in Buse, Kent et al(9) that actors may link with others across state borders; for example, they may be members of intergovernmental networks. But in general, the three countries have policy actors at all levels, from the individual level to organizational level, regarding the Immunization program during the COVID-19 Pandemic.

Policy Context

Context refers to systemic factors – political, economic, and social, both national and international – which may affect health policy. There are many factors, and one of them is situational factors. Situational factors are more or less transient, impermanent, or idiosyncratic conditions that can impact policy (e.g., wars, droughts). These are calling ‘focusing events.’ These may be a specific one-off occurrence(9).
The routine immunization program policy issuance during the COVID-19 Pandemic in all three countries came from the same situational factor, namely the COVID-19 Pandemic spreading worldwide. The Pandemic forces almost all governments to issue policies that adapt to pandemic conditions related to all things, and fields are no exception to health services, mainly routine immunization. A WHO survey on COVID-19 impact on the regular immunization program showed that regular immunization program has to decrease. The factors include insufficient personal protective equipment for the health workers, social and transportation limitations, and the low number of health workers and volunteers(4).

Immunization service is an essential component of basic health services. Therefore, routine immunization programs must be maintained and carried out as long as they enforce COVID-19 prevention measures. Policies should be related to the operation of regular immunization services by each country should be taken based on assessments and research data from epidemiologists, scenarios of COVID-19 transmission, and pandemic-related mitigation procedures applicable in each country, as well as health and immunization system resources(1). Policies that adapt to the pandemic situation are creating to ensure that health services, especially routine immunization, continue to run during the Pandemic.

**Policy Content**

**Indonesia**

The Ministry of Health of the Republic of Indonesia issued technical guidance on Immunization Services during the COVID-19 Pandemic, which is a follow-up to the Circular Letter of the Director-General of P2P Number SR.02.06/4/1332/2020 dated March 24, 2020, concerning Immunization Services in Children during the COVID-19 Pandemic in May 2020. This Technical Manual consists of five chapters.

The first chapter contains the background and purposes of the technical instruction. The second chapter explains immunization services in Posyandu, Immunization Services in Community Health Care (CHC), and Other Health Facilities that Provide Immunization Services during the Pandemic, Immunization Services Through Mobile Health Centers, Recording and Reporting, Communication Strategies, and Monitoring and Evaluation. In the third chapter, immunization services explaining children include criteria; stay at home with People Without Symptoms (OTG), People/patient In Monitoring (ODP/PDP), confirmed COVID-19 case, post-COVID-19, and Special conditions. In chapter 3, it is explained in more detail about Immunization in Children Who Are Delayed Getting Immunization. The fourth chapter describes vaccine management and immunization logistics in CHC and other health facilities during the Pandemic. The fifth chapter contains closing and conclusions(14).

**India**

Through the Ministry of Health and Family Welfare, the Government of India issued a policy related to routine immunization services during the COVID-19 Pandemic in the form of immunization service guidelines during and after the COVID-19 outbreak. The guidelines are dividing into two categories of immunization services based on COVID-19 case zones. Namely immunization services in:

a. Contamination zones and Buffer zones (the areas around contamination areas that have zero covid-19 cases but are at risk of transmission)

b. Green zones (areas outside the Buffer zone)

The technical charts routine immunization services during the COVID-19 Pandemic in India.

**Policy Content**

**India**

Immunization services in India are dividing into three categories based on the type of service:

a. Birth Dose (Basic immunization at birth includes Hepatitis B, BCG, and OPV provided in health facilities where the child is born).

b. Health facility-based sessions such as routine immunization for infants and children in primary health care facilities).

c. Outreach sessions (routine immunizations carried out in remote areas).
In The Contamination and Buffer Zones, immunization services are allowed with birth dose immunization services only. At the same time, outreach sessions and Health Facility Based Sessions should not conduct unless immunization services upon personal request and have first scheduled immunization time with health facilities. The Immunization guidelines also stated that every immunization service must enforce social distancing, hand washing, and other regulated health protocols.

In zones outside buffer zones and green zones, the three types of immunization services (Birth dose, Health Facility Based Session, and Outreach Sessions) are allowed to conduct with provisions for Outreach sessions as follows: one outreach session is limited to <500 population with a total limit of 10-15 regional sessions to avoid crowds; each session must not be more than five people present and keep a safe distance of 1 meter; enforcement of COVID-19 health protocols at each session; various approaches can take when planning outreach sessions immunization services.

Immunization service guidelines also briefly regulate location arrangements and outreach session scenarios, waiting room arrangements in the health service, availability of logistics and vaccines, vaccine surveillance, and supervision support\(^{(15)}\).

Pakistan

Through the Ministry of National Health Services, Regulation, and Coordination, the government of Pakistan does not explicitly make a specific policy related to routine immunization services during the COVID-19 Pandemic. Regulations related to routine immunization during COVID-19 contain a guideline entitled ‘Enabling Delivery of Essential Health Services during the COVID-19 Outbreak: Guidance Note’. In the fifth section on Children's Health, there is a sub-section of Immunization Services that regulates several things related to routine immunization services briefly such as the following: Newborn immunization services can continue to perform in the health facilities of the place of birth; immunization services are implementing in possible health facilities (in terms of health protocols and covid-19 case conditions); outreach immunization activities can be done within local reach and only if it does not threaten the safety of the community and health workers; the health workers must immediately carry out the delay of vaccinations once the lockdown rules are lifting\(^{(13)}\).

In the policy content, it appears that the policy in the form of technical guidance by the Indonesian government is more detailed, comprehensive, and structured in regulating immunization services during the COVID-19 Pandemic. The approach made by the Governments of India and Pakistan looks very undetailed. It does not control the conditions children may experience during Pandemic, such as children living with OTG/ODP/PDP/COVID-19 positive families. The policy made by the Indian and Pakistani governments only regulates matters related to the technical of immunization services.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Indonesia</th>
<th>India</th>
<th>Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Routine Immunization Policy during the COVID-19 Pandemic</strong></td>
<td>Technical guidance on Immunization Services during the COVID-19 Pandemic.</td>
<td>Immunization service guidelines during and after the COVID-19 outbreak</td>
<td>does not expressly make a policy of routine immunization services during the COVID-19 Pandemic. Routine Immunization contains an approach entitled 'Enabling Delivery of Essential Health Services during the COVID 19 Outbreak: Guidance Note.'.</td>
</tr>
<tr>
<td><strong>Content of the Policy</strong></td>
<td>- background and purposes of the technical instruction - Immunization Services in Community Health Care (CHC) and Other Health Facilities that Provide</td>
<td>The guidelines dividing into two categories of immunization services based on COVID-19 case zones: 1. Contamination and Buffer zones have zero COVID-19 cases with a high risk</td>
<td>- Newborn immunization services can continue to perform in the health facilities of the place of birth</td>
</tr>
</tbody>
</table>
Immunization Services during the Pandemic
- Recording and Reporting, Communication Strategies, Monitoring and Evaluation of Immunization Services
- Immunization Services for children under some detailed criteria
- Immunization in Children Who Are Delayed Getting Immunization
- Vaccine management and immunization logistics

of transmission. Children in these zones are not allowed to get immunization in health facilities and outreach session programs.

2. Green zones (areas outside the Buffer zone). Children in these zones are allowed to get immunization in health facilities and outreach session programs. Both zones are allowed to get birth dose vaccination at the birth place-health facilities.

- Immunization services are implemented in possible health facilities (in terms of health protocols and covid-19 case conditions)
- Outreach immunization activities can be done within local reach and only if it does not threaten the safety of the community and health workers
- The workers must immediately carry out the delay of vaccinations once the lockdown rules are lifting.

Policy Process

In the policy process, the three countries have almost the same policy process flow related to routine immunization services during the COVID-19 Pandemic. The policy flow begins at the stage of policy formulation based on the WHO Guidelines for Immunization Services during the COVID-19 Pandemic formulated according to each country’s conditions and situations and the resources. Then at the implementation stage, for countries with decentralized systems such as Indonesia, India, and Pakistan, the implementation of policies made by the central ministries will be downgraded to regional policies by adjusting the circumstances and resources of their respective local governments. The last policy process is evaluation; for now, the author has not been able to find literature related to the assessment of immunization service policies during the COVID-19 Pandemic in Indonesia, India, and Pakistan; this is likely because the procedure is still newly implemented.

CONCLUSION

1. The three countries have similar policy actors regarding routine immunization services during the COVID-19 Pandemic. Actors at the government level are related ministries, at the organization level are government and non-government organizations related to immunization programs, and individual actors are the ministers. The context of routine immunization service policies during the COVID-19 Pandemic in all three countries according to the same situational factors, namely the COVID-19 Pandemic. The Pandemic has forced almost all governments to issue policies that adapt to pandemic conditions related to every field are no exception for health services, mainly routine immunization.

2. On the content of the guidelines, the procedure in the form of technical guidance by the Indonesian government is more detailed, comprehensive, and structured than the other two countries. Indonesia's policy has included the guideline of immunization services for children with some criteria related to COVID-19 conditions.

3. On the policy process, the three countries have almost the same policy process flow associated with the policy of routine immunization services during the COVID-19 Pandemic. The policy flow begins at the stage of policy formulation, policy implementation, and policy evaluation.

RECOMMENDATION

Government should establish a more detailed, comprehensive, and structured policy. A policy that includes how to provide immunization services for children that are COVID-19 Positive and/or live
with COVID-19 patients to provide a safe immunization service environment for children. The study results are also helpful for governments to evaluate their current policy of routine immunization programs during the Pandemic.

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