

Challenges in Maternal and Child Health Routine Data Administration in Indonesia: A Qualitative Study

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Abstract

Background: Maternal and child health (MCH) routine data is essential in making a good health-related policy. However, the quality of MCH routine data in Indonesia is doubted, and thus the Indonesian government relies heavily on the survey data for policymaking. This condition raises questions about where the problems exist in routine data recording stages. This study aims to explore the barriers and strategies of MCH routine data recording by the administrators in the primary healthcare center. **Method:** This study was qualitative research conducted in Buru Regency, Ambon City, Purworejo Regency, and Surakarta City from May to November 2020. The data collections were intended to understand administrators' efforts to deal with the data recording problems. Data triangulation was performed through in-depth interviews with primary healthcare center staff and observations on daily routine data administration practices. **Results:** The study demonstrated challenges in the MCH routine data administration context. The first problem is behavioral contexts lead to incorrect input and delay data submission. Second, technical determinant shows the lack of integration that leads to repetitive data recording and data fragmentation. The third was the organizational problem such as lack of inter and intra-departmental coordination in data sharing, infrastructure, and human resource shortage. **Conclusion:** The findings elucidate the problem of administrative structures in the implementation of routine data policy. A comprehensive response to cope with routine data policy implementation context is needed. Existing maternal and child healthcare routine data requires structural administration refinement that provides a context for implementing reliable routine data recording of maternal and child health.

Keywords: Maternal and Child Health, routine data, administrative structure

Introduction

Routine data is inherent in the health efforts being carried out. Therefore, routine data would describe the

achievements of health programs. Health routine data in Indonesia is sourced from the healthcare facilities reports. However, in practice, routine data generated by the bodies responsible for the health services are not reliable. Routine data generated in Indonesia is still questioned for its validity.

The question of validity arises when routine data has not maximally supported the health policy or there is a huge gap between reported data and the concurrent data source such as survey data.^[1,2] In Indonesia, there is a gap between the health-facilities-sourced data and

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the survey data. For instance, the health-facilities-sourced data reported that KN1 coverage was 97.4%, in 2019 but the data of Basic Health Survey (*Riskesdas*) showed KN1 coverage was 84.1%.^[3] This data gap has potentially caused an error in the government’s response to health problems for pregnant women.

The presence of data gaps shows that routine data management is experiencing various obstacles. Routine data registration is facing inadequate supervision and alternate workload by local Midwives were cited as factors resulting in inconsistent reporting of data.^[4]

This paper focuses on how the MCH data are routinely recorded and reported by the administrator in the primary healthcare center. This administration scheme has a primary role in MCH routine data. It shows how the data recording is administrated and explains the

context of routine data policies implemented.

Method

This study used a qualitative approach which was conducted from May to November 2020. The data were collected through focus group discussions (FGDs) and in-depth interviews with the related stakeholders. The FGDs and interviews were designed to get a deeper understanding of the context of the MCH routine data problems both from the policymaker and implementer perspectives.

The research was carried out in four areas: Buru Regency, Ambon City, Purworejo Regency, and Surakarta City. The selection of these regions was intended to capture the diversity of region-related problems in carrying out routine data recording.

Table 1. Research locus

No.	Regency/City	Population (Indonesia census 2010)	Maternal and Child Health Coverage (K4, KF & KN)	PHDI Rank 2018
1.	Buru Regency	108.235	Low	414
2.	Ambon City	330.355	High	241
3.	Purworejo Regency	694.404	Low	82
4.	Surakarta City	500.642	High	67

Note: K4 = 4th antenatal care visit ; KF = post partum visit; KN = neonatal visit;
PHDI = Public Health Development Index

Data triangulation was performed through in-depth interviews with primary healthcare center staff and observations on daily routine data administration practices. Both FGDs and in-depth interviews were audio-recorded. The recordings were transcribed and analyzed into behavioral, technical, and organizational determinants categorization.

Results and Discussion

Routine Data Circumstances in Four Regions

The implementation of MCH routine data recording in the four regions that were the locus of the study had the same budgeting conditions. Routine data recording is still relatively minimal, having a separate budget

and supporting existing activities. There is no budget specifically allocated for data recording. It is still embedded in the activities that are carried out.

Most of the budget came from deconcentration funds from the central government. Although in the regional budget, several were allocated for routine data management, in general, the funds allocated specifically for recording routine MCH data were still insufficient.

The implementation of routine data recording on maternal and child health had also experienced constraints due to the lack of human resources. The staff in charge of data at the Primary healthcare center often had to carry out more than one task. Apart from recording routine data, she was also responsible for other tasks such as delivery services. As such, the workload increased and there was an impression that the human resources in the primary healthcare center were insufficient.

Table 2. Resources in implementing MCH routine data recording

Region	Buru Regency	Ambon City	Surakarta City	Purworejo Regency
Resources				
Human Resources	±	±	±	±
Budget	-	-	-	-
Infrastructure	-	-	+	±
note: ++ = Good; + = Fair; ± = Improvement needed; - = Deficient				

Routine data recording infrastructure was relatively minimal to support the implementation of maternal and child health routine data recording. Despite having very little budget allocation, the Surakarta city government had adequate infrastructure support. This infrastructure adequacy was caused by the implementation of the ‘one data’ policy in Surakarta.

MCH Routine Data Recording Problems

Behavioral problems

In routine data recording, problems often encountered in this study were input errors and delays in data transmission. The two problems by the implementer were included in the category of behavioral problems. Behavioral problems in routine data recording were caused by high and varied workloads. First, the high workload is caused by a large number of recording applications and diverse types of data. Second, the staff

in charge of data recording not only had the function of recording routine data but also responsible for delivering health services. Also, there were other duties and functions which were the responsibility of the staff who carry out data recording, such as administrative duties as treasurers.

“There are many cohorts recordings, so there is a possibility that it will be wrong” (PHC A1)

“Yes, it was already reported but forgotten not to be written in the cohort. The midwives have the cohort book but sometimes they forget to write in the cohort book. I’ve done the monitoring and evaluation and rarely found that condition. Maybe there was a delivery or other activity, so they forgot to write in the cohort.” (PHC A2)

Experiences in other regions in Indonesia also found similar problems with the routine data recording.

[5,6] Other countries also face similar experiences in carrying out routine health data recording.^[7-9] This problem is considered a daily problem encountered in routine data implementation. This daily problem cannot be underrated because it affects the quality of the routine data being produced.^[10]

Technical problems

Incorrect input and delay submission of data experienced by routine data recording implementers occurred due to inadequate technical support in the routine data recording system. Technically, the routine data recording application was not integrated, so there was data fragmentation. Data fragmentation caused by the unintegrated recording application made performance inefficient. Often the same data must be inputted into two or more different applications. Repetition of similar data recording was an inefficiency in carrying out routine data recording. In addition to increasing the workload, this problem had also likely to cause input errors. The same problem was also found in previous studies which showed that the error rate of data recording increased and the compliance of recording staff decreased due to a large number of MCH data recording forms.^[11,12] This condition was not unnoticed by the data recording staff. They realized what they were doing was a repetitive job that could have been made more concise. But in reality, it returns to the recording system which did originate and was aimed at separate management.

“For the Family and Nutrition program, if possible, don’t use too many applications. Is it possible to combine them? So we only record once based on National identification number, name, and date of birth. So we can avoid repetitive recording. It means there is single data input.” (PHC D1)

Recurring recording allowed for behavioral problems in recording and reporting routine maternal and child health data (input errors and delays in data transmission). This context showed that technical determinants lead to behavioral problems. The fragmented recording system made the data recording staff had a high workload which in turn increased the likelihood of making recording

errors.

Routine data recording on maternal and child health was managed inefficiently by the local government. Efforts to standardize data recording through SOP emphasized more on the aspect of effectiveness which aimed at maintaining data validity. However, this goal in the end became counterproductive because of the limited available resources.

“We at the family health directorate, have no application and manually operated. There are epgbm apps for nutrition routine data. There is no MCH application. The problem in this city is the internet, the staffs have overlapping work, and the high workload...” (City health department Bb informant)

The shortage of human resources that were experienced became an operational burden when the routine data recorder at the primary healthcare center was a staff who did not only have responsibility for recording routine data only. Mostly the staff responsible for recording routine MCH data were midwives who had more than one program responsibility. From the interviews conducted with a director of a primary healthcare center, one midwife bears three or more responsibilities. This burden did not include the responsibility for health services.

“Honestly we feel overburdened. The workload is too high. Imagine, 15 midwives have to handle 32 villages and our jobs are not only about MCH but also other duties not related to MCH. If we may focus on MCH only then the outcomes would be better.” (PHC C1)

Behavioral problems in recording routine MCH data at the primary healthcare center showed that the division of tasks has not been carried out with the principle of a clear separation of functions. The staff at the primary healthcare center has many functions at once. Midwives, for example, not only provide delivery services, but they are also responsible for other programs. This problem prevents staff from honing expertise in one particular area.

Organizational problems

Lack inter and intradepartmental coordination in data sharing

Routine data recording at the health center includes the MCH program (pre and post-natal care), immunization, surveillance, and several other programs. The recording is carried out by the Primary healthcare center staff, who is usually a village midwife. Each program had its data recording application.

Most of the MCH routine data recording applications were not integrated, indicating that there was a technical problem. Data recording was done repeatedly because each MCH program had different applications even though they had the same data. Regarding maternal and child health, there were at least two applications, namely “e-ppgbm”^[13] and “simpus KIA”.^[14] This condition showed the weak coordination between policymakers in the Ministry of Health.

Human resource shortage

Of the four research locus, the lack of human resources had always been a problem in carrying out routine data recording. This problem has become the main topic in health services in Indonesia. Even in urban areas.

The problem of lack of human resources was not only caused by a lack of quantity but also due to maldistribution. The uneven distribution contributed to the constant lack of health workers at the primary healthcare centers^[15]. This phenomenon can be seen in the findings of this study, in Buru District, the number of midwives was sufficient even though they were not permanent employees. In other findings, in urban areas such as Surakarta or Purworejo, the human resources at the primary healthcare center were not excessive but they were sufficient. The problem faced was the high workload, especially for midwives who were responsible for more than one program.

Maldistribution of human resources and high workload showed a lack of efficiency. A primary

healthcare center was not designed as an organization that encourages specialization in every function it carries out. According to Indonesia Minister of Health Regulation No. 43 of 2019, primary healthcare center management does not emphasize efforts to increase staff professionalism by encouraging the specialization of duties and functions. Primary healthcare centers are managed to cover a wide range of areas and are deliberately encouraged to holistically address public health problems.

The holistic approach does provide the benefits of integrative and coordinative services. However, if this approach is not implemented properly, it will reduce the efficiency of the management of the primary healthcare center. These potential problems were found in the implementation of routine data recording. The integration between the data recording process and health services meant that there was no separation of the duties and functions of the staff which results in a double burden of work. This problem is a manifestation of inefficiency in human resource management in the primary healthcare center.

Lack of infrastructure

The last problem identified was the inadequate infrastructure for MCH routine data recording. This problem arose as a result of the lack of allocation for carrying out routine data. Even regions with adequate fiscal capacity, such as Surakarta and Purworejo, also experience the lack of infrastructure, although to a different degree compared to regions with low fiscal capacity. Especially for areas such as Buru Regency and Ambon City, infrastructure became the main obstacle after human resource problems. Regional budget allocations in the health sector are strongly influenced by the subjectivity of regional mayors. Often curative efforts get more budget allocations because their impact could be immediately measured. So that success in the curative sector is expected to increase the electability of the incumbent regional head-bearing party.^[16]

Routine data recording that has adopted information technology has made the adequacy of infrastructure

an obstacle. These constraints are mainly faced by regions that are still struggling with basic problems such as electricity supply and the availability of internet connections. This problem directly hinders the

implementation of a routine MCH data recording and reporting system. The constraints of MCH routine data recording found in this study were formalized in the following conceptual model (figure 1).

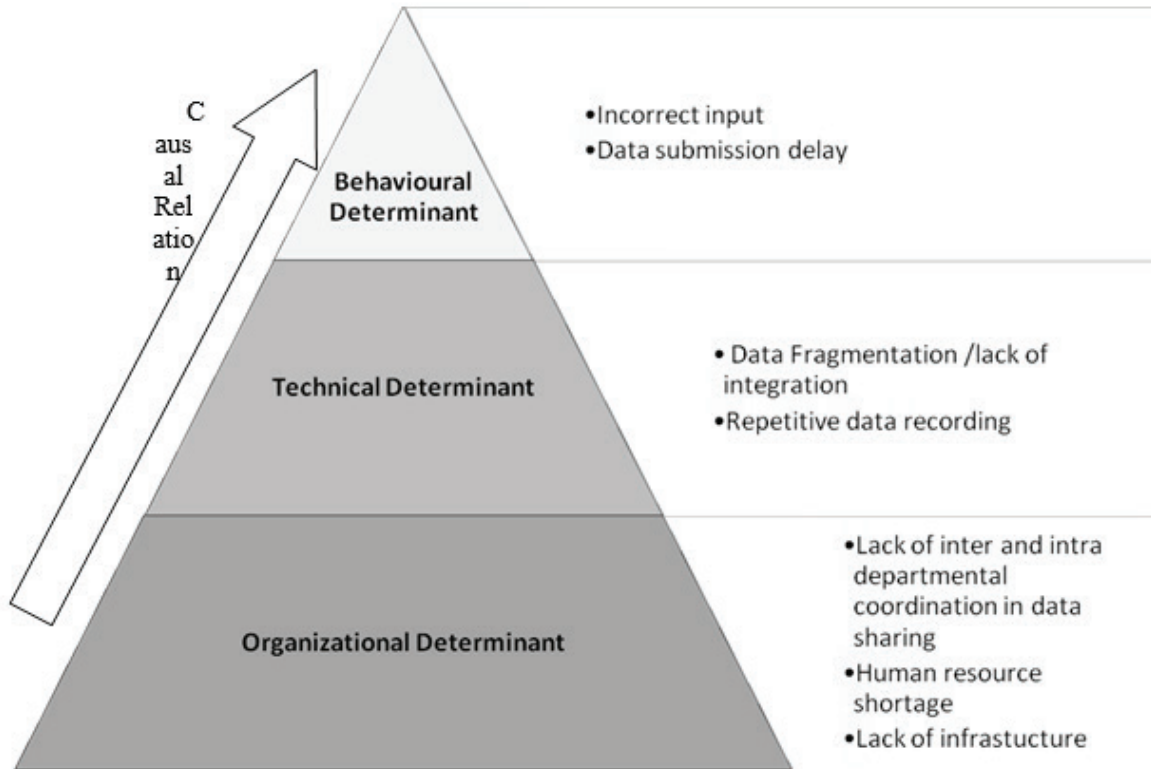


Figure 1 Determinant in MCH Routine Data Obstacle in Buru, Ambon, Purworejo, and Solo – Modified from Hoxha et al. (2020).^[17]

The organizational problems had caused the occurrence of technical problems. Whilst technical problems were the root of behavioral problems endured by the MCH routine data administrators.

Potential Solutions

The results of this study indicated that the problems of implementing the MCH routine data recording including behavioral and technical problems. These problems were formed as a result of the organizational culture that drives them.

Therefore, efforts to improve routine data recording require at least two keys of improvements. The first

is about the simplification of data recording. This simplification is needed to reduce the workload. Second is the improvements in the management structure. Improved management of routine data recording is required for the sustainability of records.

Routine data recording simplification

The first solution that can be taken is to simplify the routine MCH data recording system. As discussed above, the number of recording systems both online and offline has caused a decrease in the level of compliance in filling in data and increased input errors.^[11,12] many of which with the same variables cause the workload of

midwives at the primary healthcare centers to increase. Not only the number of forms that must be filled in, but the village midwife also has many help books to use manually. Assistive book for midwife personal records which also means that the existing system is not yet effective and efficient.^[18,19]

Routine data administration enhancement

Primary healthcare center needs to have skilled and competent human resources in data recording. The success of recording and reporting routine data is largely determined by human resources that implement routine data information systems. Staffs who are in charge of data recording and reporting must have an awareness that the data generated is indispensable for policymaking.^[20,21]

If the solutions-focused only on the lack of human resources, the problem of routine MCH data recording will not be resolved properly. First, in the delivery of health services, the problem of resources including human resources is a classic problem.^[15,22] Second, the complexity of the problem of inequality in health services even at the subnational level.^[23] Therefore, optimal management of human resources is a rational choice in improving services.

In the modern bureaucracy, specialization is needed to increase the efficiency of results. In the Weberian framework of thought, efficiency results from the existence of specialization in work.^[24,25] This specialization requires a supportive organizational structure. The organizational structure of the primary healthcare center in Indonesia has not been able to answer this need. Human resource management is still based on the Health program which is carried out without paying attention to the specifications and specializations of work required.

Primary healthcare centers have not implemented the separation of staffs' functions and duties. So that health workers at the primary healthcare centers carry out very diverse duties and functions. Human resource management in such an organizational structure makes employees unable to develop job specializations. This

phenomenon is because they are not required and are not encouraged to specialize in work.

Conclusion

Constraints on the implementation of MCH routine data recording were evident that problems that occurred were mostly due to organizational problems. The organizational context has resulted in technical issues and eventually leading to behavioral issues. Behavioral problems were derived from the issues of insufficient human resources, a lack of coordination in both inter and Intra departments, and inadequate infrastructure.

These research findings showed that the routine data administrators were trapped in a situation that did not allow them to increase the efficiency and quality of MCH routine data. Challenges regarding the diverse job function of routine data administrators were the context of problems that prevent optimum routine data recording.

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