

Analysis of Needs and Weaknesses of The Maternal and Child Health Surveillance System

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ABSTRACT

The maternal and child health program in Sukoharjo district includes several reports on childbirth, postpartum, immunization reports, nutritional counseling, midwife courses, home visit reports, and family planning services, both in hospitals, health centers, maternity homes, and midwives. The maternal and child health surveillance that has been carried out so far has only been carried out to fill in data reports to health agencies at the central level. It has not been presented and analyzed properly, let alone disseminated the information to those who need it. Therefore, efforts are needed to improve the quality of epidemiological data and information so that planning and evaluation are well coordinated to improve the quality of the analysis results of surveillance data studies in terms of timeliness and sensitivity of reports. This research aims to determine the weaknesses in the need for a maternal-child health surveillance system and a maternal-child health surveillance system. The intervention method used is through on-the-job training. Meanwhile, district officers who have been trained previously (tiered training) train maternal and child health workers at community health centers. From the results of the analysis, it can be concluded that the maternal and child health program surveillance system is generally running well.

Keywords: Evaluation program, Maternal child health, Surveillance

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1. INTRODUCTION

The economic crisis in Indonesia that occurred in 1998-2000 has caused the nutritional intake of babies, toddlers, and pregnant women from underprivileged communities in particular to decrease significantly and caused them to experience Chronic Energy Deficiency (CED) and malnutrition.[1] Although there is no specific research that documents the effects of the economic crisis on pregnancy outcomes, research conducted recently shows clearly that babies born to mothers who experience CED have an average birth weight of 2,568 grams or 390.9 grams lower than the average birth weight of babies born to mothers who do not experience CED. Even though it has experienced a significant decline with the improvement in the Indonesian economy after the crisis, the prevalence of pregnant women's lack of calorie energy is still quite high, namely 16.7%. [2] [3]

This incident is further exacerbated by the high mortality rate of children aged one to 5 years, the number of infectious diseases, and the high frequency of investment in worms compared to protein-calorie deficiency and vitamin A deficiency, as well as the rate of malnutrition in pregnant women [4] [5] which contributes to the high rate of low birth weight in Indonesia, therefore the Maternal and Child Health Agency must pay more attention to this age group and convince parents that regular supervision of children aged 1-5 years is as important as supervision of babies.[6] [7]

In connection with this, mothers and their families as well as other communities, presented as objects, must also be included as subjects in government health efforts, they as potential in society must be included in the efforts of the Maternal and Child Health Agency, so that efforts are optimal. The Maternal and Child Health Agency's efforts can achieve its goals. To achieve the goal of Maternal and Child Health, efforts must be made so that all mothers before and during pregnancy and after giving birth can have their health checked regularly and

continuously. All babies from birth to the age of six years can have their health monitored with medical and preventive measures so that the baby - the baby does not fall ill, provides health education to the community, especially to parents and mothers, besides that, community support is an absolute condition for achieving people's welfare.[8] [9]

The maternal and child health program in Sukoharjo district includes the number of birth reports, postpartum, immunization reports, nutritional counseling, midwife courses, home visit reports, family planning services, both in hospitals, health centers, maternity homes, village midwife programs, and midwives. [10] [11] The Maternal and Child Health Surveillance that has been carried out so far has only been used to fill in data reports to health agencies at the central level. It has not been presented and analyzed properly, let alone disseminated the information to those who need it.[12] Therefore, efforts are needed to improve the quality of epidemiological data and information so that planning and evaluation are well coordinated to improve the quality of the results of analysis of surveillance data studies, including timeliness and sensitivity of reports.[13] [14]

With the existence of the law on regional autonomy, the role of Regencies/Cities is very important in determining the success of development, including development in the health sector. However, overall, it can be said that the regional government's commitment to development in the health sector is still inadequate. Amid widespread shortages of fuel oil, energy savings, the tragedy of starvation, bird flu, and disease outbreaks that hit this country, it cannot be denied that the number of diseases due to incomplete immunizations such as polio, hepatitis, measles, coughs, diarrhea, fever, and skin diseases has increased, babies with low birth weight, and diseases that pregnant women often suffer from. The high incidence of this disease will spur the growth of morbidity and mortality in children, infants, and toddlers as well as pregnant women. Based on the description above, it is necessary to evaluate the maternal and child health surveillance system.

2. METHOD

Evaluation of the Maternal and Child Health surveillance system is only limited to the District Health Service and Community Health Center levels. Maternal and Child Health Surveillance at the community health center level is very important because it is the main source, of information for the District Health Service level. The evaluation method is by filling out a questionnaire by the midwife who manages maternal and child health at the community health center, the village midwife, the private midwife/maternity house, and the midwife, as well as secondary observation. District-level evaluation is carried out by filling out a questionnaire by the Head of the Maternal and Child Health Section of the District Health Service and the Head of the Maternal and Child Health Sub-Section and the Head of the Nutrition Sub-Section as well as observing secondary data. The elements evaluated are data collection, data processing, data presentation, data analysis, feedback, data utilization, report completeness, report timeliness, and report flow, then weighting and stratification are carried out for each surveillance indicator.[15] [16].

3. RESULTS AND DISCUSSION

The maternal and child welfare program is a program that creates maternal and child health policies, regulates, coordinates, supervises, and is responsible for maintaining the health of pregnant women, babies, and toddlers up to teenage children.

3.1. Maternal and Child Health Management

All respondents (100%) collected target data (pregnant women, women giving birth, babies), pregnant women's visits (first visit and fourth visit), high-risk pregnant women, neonates, birth reports, and low birth weight babies. Regarding the type of data collection form used, all (100%) respondents mentioned the third monthly report, summary report for local monitoring of maternal and child health, register of pregnant women's cohort, register of baby's cohort, birth report by a traditional birth attendant, and as many as 96.67% used the form private delivery. Data collection periods were daily (80%), weekly (33.33%), monthly (90%), trimonthly (50%), annual (56.67%), and incidental (20%). Meanwhile, the data collection staff consisted of nurses (96.67%), midwives (100%), workers (60%), shamans (96.67%), and cadres or dasa homesteads (73.33%).[17]

In efforts to collect data on the Maternal and Child Health program, all (100%) Maternal and Child Health officers do so, especially at the community health center level. The forms used for data collection are the third monthly report (health center activity report), pregnant mother cohort register, baby cohort register, and dukun birth report, while almost all private birth report data collection (96.76%) is carried out by maternal health officers and children. It can be said that the data sources for low birth weight infants and other maternal and child health programs are quite adequate.[18]

The data collection period is carried out daily (80%) especially for community health centers, such as the pregnant/baby cohort, while weekly (33.3%) for maternal and child monitoring - maternal and child health, delivery by traditional birth attendants and register for the pregnant/child cohort. baby; monthly (90%) for the third Monthly Report, Local Area Monitoring - Maternal and Child Health and traditional birth attendant reports; quarterly (50%) for Local Area Monitoring - Maternal and Child Health, cohort of pregnant women/babies, Monitoring Card - Maternal and Child Health and annually (56.67%) for the third Monthly Report, Local Area Monitoring - Maternal and Child Health and stratification of health centers.

3.2. Data processing

Maternal and child health data at community health centers is processed based on place or village name (93.33%), age (80%), and month or year (93.33%). Maternal and Child Health Data that has been collected is generally processed based on village name (93.33%), age (80%), and month or year (93.33%). The tools used are generally in the form of recapitulation books and recapitulation aid forms. Data processing carried out by Maternal and Child Health officers is quite adequate, considering that the existing data distribution is based on epidemiological variables, namely person, place, and time. The processing aids used were recap books (93.33%) and recap aid forms (90%).

3.3. Presentation of data and data analysis

The forms of data presentation used are tables (33.33%), graphs (86.67%), and maps or spots (23.33%). The data presented consists of neonate data (90%), visits by pregnant women (96.67%), detection of high-risk pregnant women (93.33%), cases of low birth weight babies (76.67%), perinatal deaths (80%) and maternal death (76.67%). A total of 24 (80%) respondents said that the health service Maternal and Child Health data was analyzed. Those who analyzed the data were the head of the community health center (70%) and the manager of the Maternal Child Health program at the community health center/sub-section health service (90%), the form of data analysis was based on program coverage (93.33%), while the trend of low birth weight cases/deaths was 50 %.[19]

The existing forms of data presentation are generally in the form of graphs (86.67%) and a few use maps. This is by the Local Area Monitoring-Maternal and Child Health program, namely monitoring visits by pregnant women (first visit and fourth visit), delivery coverage by trained health workers and traditional birth attendants, detection of high-risk pregnant women, and neonatal coverage by health workers. Most data analysis (70%) was carried out at the community health center by the head of the community health center (70%) and Maternal and Child Health officers (90%). The most frequently used form of analysis is program coverage (76%). The involvement of the head of the community health center in data analysis is a good effort, so that the head of the community health center continues to monitor the implementation of the Maternal and Child Health program in his area.

3.4. Feedback

Total of 23 (76.67%) respondents said they provided feedback. The data fed back are local area monitoring (80%), Low Birth Weight (70%), perinatal (66.67%), and maternal (66.67%). Feedback is carried out monthly (66.67%), quarterly (66.67%), and annually (33.33%). Feedback is provided in writing (70%) and in meetings (73.33%). The targets given feedback were cross-sectoral (43.33%), cross-program (63.33%), traditional healers (63.33%), and cadres (60%). The material used in feedback is in the form of attendance reports (53.33%) and activity results (73.33%). Approximately three-quarters (76%) of the data that has been analyzed is fed back, especially for Local Area Monitoring-Health data. Mother and Child (80%), Low Birth Weight (70%), perinatal (60%) and maternal (78%). Most feedback is carried out every month and every quarter (66%), which is done in writing (70%) or verbally in the form of regular meetings at the community health center (73%).

By providing feedback, to both the head of the program manager and across programs regularly every month, the problems faced and efforts to solve them will be able to be identified. This feedback activity needs to be cultivated so that program implementation can be monitored properly. The targets of feedback in general are cross-programs and TBAs (63.33%) and cadres (60%) respectively. There is still little feedback aimed at cross-sectors, in this case the sub-district head. It would be very good if the feedback was for cross-sectors. sectoral issues are further improved, so that the role of helping other sectors towards health becomes better. The feedback material delivered has been directed towards program quality, namely providing information about the results of activities.

3.5. Utilization of data analysis results

The results of data analysis and data interpretation were used by the head of the community health center (93.33%), the manager of the Maternal and Child Health program at the community health center (96.67%), across sectors (70%), and across programs (80%). The results of data analysis and data interpretation are used for planning (76%), decision-making or follow-up (80%), evaluation of Maternal and Child Health activities (66.67%), and early detection of Low Birth Weight (70%). In general (93.33%) the results of data analysis and interpretation of Maternal and Child Health data were used by heads of community health centers and Maternal and Child Health officers (96.67%) themselves; while by cross-program and cross-sectoral it is 80% and 70% respectively. From this data, it can be seen that there is a connection between the low use of Maternal and Child Health data by cross-sectors and the little feedback they receive (43.33%). If there is increased feedback to cross-sectors, there will be a lot of Maternal and Child Health program data that will be utilized by them.

3.6. Timeliness of reports

For the third monthly report from community health centers sent to the District Health Service every month, 343 (98.56%) were submitted out of 348 reports that should have been submitted during the year. Meanwhile, for the recap of the Local Area Monitoring Report - Maternal and Child Health (format 1) as many as 347 (99.71%)

were admitted to the District Health Service. The deadline for the third monthly report from the health center to the District Health Office is before the 10th of the following month. From the existing data, the average reporting of the third monthly report from the Community Health Center to the District Health Service is around the 13th. Meanwhile, for Local Area Monitoring-Maternal and Child Health reports (format 1), of the 347 reports received, 15 (4.32%) were under or on the 10th of the following month, 327 (94.24%) were between the 10th and 30th of the following month. subsequent and 5 (1.44%) more than one month.

Maternal and Child Health program reports originating from the third Monthly Report data and Local Area Monitoring-Maternal and Child Health are generally in order and are too late, especially for the third Monthly Report report 13 days in the following month. Meanwhile, the delay in the Local Area Monitoring-Maternal and Child Health report (94.24%) was between 10-30 days the following month, this was caused by the Local Area Monitoring-Maternal and Child Health report not only reporting absolute figures but also including the percentage of coverage of each village in the health center area concerned. The regularity and accuracy of the reports of the third monthly report is a source of information that is quickly available to find out data on maternal and child health in each community health center area. In this way, the district's attention to Maternal and Child Health problems at Community Health Centers will become greater, which in the end can result in the structuring of a Maternal and Child Health Surveillance system in all Community Health Centers.

3.7. Report Flow

The flow of reporting data on maternal and child health, especially low birth weight babies, at the community health center level is adequate. This can be seen from the involvement of the public and private sectors in efforts to collect information from them. Likewise, if the regional concept for the Maternal and Child Health program can be implemented in all community health centers, then it will be possible to know the number of pregnant women in the area and follow-up monitoring efforts until the mother gives birth as is done in the four community health center guide areas in the context of collecting maternal and perinatal data in Sukoharjo Regency. Giving each health center officer the responsibility of having a target village is also an effort of the health center to give greater attention to efforts to improve health services in its working area.

3.8. Stratification of Maternal and Child Health Surveillance Systems

Based on the weighting of the assessment criteria for the surveillance elements being evaluated, it can be concluded as follows:

Figure 1. Stratification of maternal and child health surveillance systems

No	The element being assessed	Stratification	Criteria
1.	Data collection	5	Good
2.	Data processing	5	Good
3.	Data presentation	5	Good
4.	Data analysis	3	Medium
5.	Feedback	3	Medium
6.	Data utilization	5	Good
7.	Report Completeness	5	Good
8.	Report Accuracy	3	Good
Total Stratification		34	Medium

3.9. Intervention plan

Maternal and Child Health surveillance interventions will be carried out at the district level, The aspect that is intervened is the ability of maternal and child health workers to analyze data. Maternal and child health workers need to be equipped with the ability to analyze maternal and child health program data. After completing the briefing, it is hoped that officers will be able to carry out data analysis well. [20] After being equipped with the skills, officers are expected to be able to provide program feedback, both cross-program and cross-sectoral. After these two aspects are intervened, it is hoped that further development will result in the aspect of timeliness/regularity of reports being resolved.[21] [22]

The intervention method used is through on-the-job training. Meanwhile, maternal and child health workers at community health centers are trained by district officials who have been previously trained (tiered training).[23] The evaluation of the intervention was carried out momentarily (training output) and longitudinal (training outcome), namely a momentary method carried out by district officials, namely the training participants were able to analyze maternal and child health data in Sukoharjo Regency. At the end of the training, participants will be able to analyze and provide feedback on maternal and child health program data correctly.[24] Longitudinal method (training outcome), it is hoped that one year after completing the training of community health center officers by district officers, they will be able to analyze and provide feedback on the results of the analysis of maternal and child health

program surveillance data for their respective regions. [25]The time is one year after completing the training or when the program activities are evaluated in their respective regions.

4. CONCLUSION

Based on the results of the analysis above, several things can be concluded that the maternal and child health program surveillance system in Sukoharjo Regency is generally running well, namely in the aspects of collecting maternal and child health data, processing data, presenting data, utilizing data, and completeness of reports. Several aspects of maternal and child health surveillance that still need to be improved are the ability of maternal and child health officers in terms of data analysis, delivery of feedback, and timeliness of reporting.

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REFERENCES

- [1] T. Beal, A. Tumilowicz, A. Sutrisna, D. Izwardy, and L. M. Neufeld, "A review of child stunting determinants in INDONESIA," *Matern. Child. Nutr.*, vol. 14, no. 4, p. e12617, Oct. 2018, doi: 10.1111/mcn.12617.
- [2] V. Oktaria and Y. Mahendradhata, "The health status of Indonesia's provinces: the double burden of diseases and inequality gap," *Lancet Glob. Health*, vol. 10, no. 11, pp. e1547–e1548, Nov. 2022, doi: 10.1016/S2214-109X(22)00405-3.
- [3] S. Syahrial, R. Resmiati, R. D. Nindrea, and F. N. Hanum, "Comparison of vitamin D intake and ultraviolet light exposure in pre and postmenopausal women in the elderly pandemic period," *J. Gizi Dan Diet. Indones. Indones. J. Nutr. Diet.*, vol. 10, no. 1, p. 22, Dec. 2022, doi: 10.21927/ijnd.2022.10(1).22-29.
- [4] R. D. Nindrea, "PENGARUH PENYULUHAN GIZI DENGAN PERUBAHAN PERILAKU SARAPAN PAGI SISWA SEKOLAH DASAR," *J. Endur.*, vol. 2, no. 3, p. 239, Oct. 2017, doi: 10.22216/jen.v2i3.1839.
- [5] A. Ferede Gebremedhin, A. Dawson, and A. Hayen, "Evaluations of effective coverage of maternal and child health services: A systematic review," *Health Policy Plan.*, vol. 37, no. 7, pp. 895–914, Aug. 2022, doi: 10.1093/heapol/czac034.
- [6] A. F. Anisa *et al.*, "Permasalahan Gizi Masyarakat Dan Upaya Perbaikannya".
- [7] M. K. Alwi *et al.*, "Evaluation of the Pulmonary Tuberculosis Control Program," *J. Penelit. Pendidik. IPA*, vol. 9, no. 6, pp. 4387–4394, Jun. 2023, doi: 10.29303/jppipa.v9i6.3791.
- [8] B. Koletzko *et al.*, "Nutrition During Pregnancy, Lactation and Early Childhood and its Implications for Maternal and Long-Term Child Health: The Early Nutrition Project Recommendations," *Ann. Nutr. Metab.*, vol. 74, no. 2, pp. 93–106, 2019, doi: 10.1159/000496471.
- [9] C. G. Victora, P. Christian, L. P. Vdaletti, G. Gatica-Domínguez, P. Menon, and R. E. Black, "Revisiting maternal and child undernutrition in low-income and middle-income countries: variable progress towards an unfinished agenda," *The Lancet*, vol. 397, no. 10282, pp. 1388–1399, Apr. 2021, doi: 10.1016/S0140-6736(21)00394-9.
- [10] [N. Haboubi, "Assessment and management of nutrition in older people and its importance to health," *Clin. Interv. Aging*, p. 207, Jul. 2010, doi: 10.2147/CIA.S9664.
- [11] Nadia Muthia Hanifah Amrin, Muhammad Khidri Alwi, and Sitti Patimah, "Hubungan Status Gizi dan Aspek Ergonomi dengan Kejadian Low Back Pain pada Pekerja di PT. Varia Usaha Beton," *Window Public Health J.*, vol. 2, no. 2, pp. 252–263, Apr. 2021, doi: 10.33096/woph.v2i2.147.
- [12] D. Nambiar, B. Mathew, S. Dubey, and S. Moola, "Interventions addressing maternal and child health among the urban poor and homeless: an overview of systematic reviews," *BMC Public Health*, vol. 23, no. 1, p. 492, Mar. 2023, doi: 10.1186/s12889-023-15410-7.
- [13] A. Hasanuddin, "Analisis Masalah Kesehatan Di Kabupaten Sukoharjo," 2019.
- [14] A. Maryam, A. Elis, A. Hasanuddin, M. K. Alwi, A. Syaekhu, and R. D. Nindrea, "Influence Factors Nutritional Needs in the Elderly in Marginalized Communities," *J. Penelit. Pendidik. IPA*, vol. 9, no. 9, pp. 7045–7050, Sep. 2023, doi: 10.29303/jppipa.v9i9.4570.
- [15] A. Hasanuddin, Jurnal Syarif, and Ricvan Dana Nindrea, "The Evaluation of Needs and Weaknesses of The Immunization Program in Kodingareng and Barranglompo Island, Makassar City, South Sulawesi, Indonesia," *Int. J. Community Serv. IJCS*, vol. 1, no. 2, pp. 173–181, Dec. 2022, doi: 10.55299/ijcs.v1i2.208.
- [16] A. Ahlbom, "Modern Epidemiology, 4th edition. TL Lash, TJ VanderWeele, S Haneuse, KJ Rothman. Wolters Kluwer, 2021," *Eur. J. Epidemiol.*, vol. 36, no. 8, pp. 767–768, Aug. 2021, doi: 10.1007/s10654-021-00778-w.

- [17] I. Kurniasari, B. Noranita, and N. Bahtiar, "SISTEM INFORMASI PELAPORAN MONITORING DAN EVALUASI PROGRAM KESEHATAN IBU DAN ANAK DI PROVINSI JAWA TENGAH," *J. Masy. Inform.*, vol. 5, no. 9, pp. 25–32, Apr. 2014, doi: 10.14710/jmasif.5.9.25-32.
- [18] C. Byrd-Bredbenner, F. Wu, K. Spaccarotella, V. Quick, J. Martin-Biggers, and Y. Zhang, "Systematic review of control groups in nutrition education intervention research," *Int. J. Behav. Nutr. Phys. Act.*, vol. 14, no. 1, p. 91, Dec. 2017, doi: 10.1186/s12966-017-0546-3.
- [19] D. D. Nuryani, "EVALUASI PROGRAM KESEHATAN IBU DAN ANAK (KIA) IBU HAMIL RISIKO TINGGI KOMPLIKASI DI PUSKESMAS GEDUNG REJO SAKTI KABUPATEN TULANG BAWANG".
- [20] Noor Shahid, Faiza Salman, Mahnaz Makhdam, and Admin, "Major factors responsible for child malnutrition: a review," *J. Pak. Med. Assoc.*, pp. 1–13, Nov. 2020, doi: 10.47391/JPMA.1243.
- [21] A. Hasanuddin, *Aplikasi Penelitian Epidemiologi*, 1st ed. Makassar: ASENI, 2016. [Online]. Available: https://www.academia.edu/92643607/APLIKASI_PEMELITIAN_EPIDEMIOLOGI
- [22] C. J. H. Chern and S.-D. Lee, "Malnutrition in hospitalized Asian seniors: An issue that calls for action," *J. Clin. Gerontol. Geriatr.*, vol. 6, no. 3, pp. 73–77, Sep. 2015, doi: 10.1016/j.jcgg.2015.02.007.
- [23] [23] E. McGill *et al.*, "Evaluation of public health interventions from a complex systems perspective: A research methods review," *Soc. Sci. Med.*, vol. 272, p. 113697, Mar. 2021, doi: 10.1016/j.socscimed.2021.113697.
- [24] L. Kareba, "EVALUASI SISTEM PELAKSANAAN PROGRAM KESEHATAN IBU DAN ANAK (KIA) DI PUSKESMAS MARAWOLA KABUPATEN SIGI," vol. 20, no. 2, 2020.
- [25] "Evaluasi dan Pembinaan Pelayanan KIA di Puskesmas Poned Alalak Selatan - Dinas Kesehatan Kota Banjarmasin." Accessed: Jan. 01, 2024. [Online]. Available: <https://dinkes.banjarmasinkota.go.id/2021/06/evaluasi-dan-pembinaan-pelayanan-kia-di.html>

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