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Association between Child Mortality and Healthcare Facility Level Factors: Evidence from Nationally Representative Survey

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ABSTRACT

Child mortality is an important indicator of child health and overall national development. Under-five mortality is unacceptably high in Low- and Middle-Income Countries (LMICs) including Bangladesh. Increased availability and access to the healthcare services can play a significant role to reduce under-five mortality. The aim of this study was to explore the associations of several forms of child mortality with health facility level factors. Data were extracted from the 2017-18 Bangladesh Demographic and Health Survey data and 2017 Bangladesh Health Facility Survey data. Three outcome variables were considered: neonatal mortality, infant mortality, and under-five mortality in this study. Health facility level factors were considered as major explanatory variables. They were the availability of the child healthcare services at the nearest healthcare facility, readiness of the nearest healthcare facility to provide child healthcare services and the average distance of the nearest healthcare facility providing child healthcare services. Multilevel mixed-effect logistic regression model was used to determine the associations between the outcome variables and explanatory variables adjusted for covariates. We reported under-five, infant and neonatal mortality were 40, 37, and 30 per 1000 live births, respectively. The likelihood of neonatal and infant mortality was found to be declined for one-unit increase on the availability and readiness of the mothers' homes nearest healthcare facilities to provide child healthcare services. On contrary, for every kilometre increased distance between mothers' homes and their nearest healthcare facility was found to be associated with increased in the likelihoods of neonatal, infant and under-five mortality. The availability of health facilities providing child healthcare services close to residence and their improved management, infrastructure, and readiness to provide child healthcare services play a significant role in reducing under-five mortality in Bangladesh. Policies and programs should prioritize to increase the availability and accessibility of health facilities that provide child healthcare services.

INTRODUCTION

Child mortality is an important indicator of child health and overall national development (McGuire, 2006). A substantial global progress has been made in reducing child deaths, from 12.7 million in 1990 to 5.9 million in 2015. Since 1990, the global under-5 mortality rate has dropped 53%, from 91 deaths per 1000 live births in 1990 to 43 in 2015 (WHO, 2016). The world as a whole has been accelerating progress in reducing the under-5 mortality rate. Globally, approximately 5.6 million deaths of children under-five years of age (under-five deaths) were reported in the year 2016. Of these deaths, three million occurred between 1 and 59 months of age while the remainder occurred between birth and the first month of life (IGME, 2017).

The Sustainable Development Goals (SDG) started in 2015 with ambitious targets to reduce the neonatal and under-five mortality rates to 12 and 25 per 1000 live births, respectively, by 2030 (Robert *et al.*, 2005). The Millennium Development Goals (MDGs), which ended in 2015 with more than 50% (from 90 to 43 per 1000 live births) reduction of global under-five mortality, helped the world to make such highly ambitious targets (Beattie *et al.*, 2015; Fullman *et al.*, 2017). However, the rate of under-five mortality in Low- and Middle-Income Countries (LMICs) does not truly represent such an average estimate of under-five mortality or the reduction during the MDGs. The rate of under-five mortality is still 69 per 1000 live births in LMICs, which was also the global average in the 2000s (Asia, 2016; Chao *et al.*, 2018). Consequently, the likelihood of under-five mortality is 14 times higher in LMICs than in developed countries, and LMICs account for more than 90% of the 5 million under-five deaths globally (Asia, 2016).

The rate of under-five mortality is much higher in Asian and African countries, which account for around 80% of the global under-five deaths despite accounting for only 53% of global life births (Sharrow *et al.*, 2022). The causes of such higher deaths of under-five mortality in Asian and African countries, are infectious diseases such as pneumonia, diarrhea, and malaria as well as preterm birth complications, birth asphyxia and trauma, and congenital deformities (Liu *et al.*, 2016). Effective interventions such as high-quality prenatal and postnatal care for mothers and child healthcare services that can prevent and cure infectious infections and other factors associated with under-five mortality (Asia, 2016). This requires trained and equipped healthcare workers, including midwives and

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the availability of essential commodities (Sharrow *et al.*, 2022).

Bangladesh had a significant contribution around 4.30% of the total live births in the South Asian region with around 3 million yearly live births (Mst. Khadezatul Kobra, 2024; Nations, 2019). However, the country is ranked fourth in South Asia for neonatal mortality, falling behind Pakistan, Afghanistan, and India, who take the top three spots, respectively. Such a higher rate of child mortality in Bangladesh is reported instead of its significant progress in preventing infectious diseases, including diarrhoea and pneumonia, increasing breastfeeding practice and immunization, improvement of maternal undernutrition, reduction in adolescent pregnancy, and a significant increase in maternal healthcare services use (Alam *et al.*; Billah *et al.*, 2019; Islam *et al.*, 2017; Kabir *et al.*, 2024; Khan *et al.*, 2020). Consequently, most of the LMICs, including Bangladesh are currently off-track to achieving the SDGs targets related to child mortality (Alam, Khanam, Kabir, Khalif, *et al.*, 2024; Li *et al.*, 2021).

Healthcare facilities in Bangladesh and LMICs are frequently criticized for the low quality of the services offered, as well as for the lack of medical staff and equipment (Khan *et al.*, 2020; Khan, Alam, *et al.*, 2024; Khan, Khanam, *et al.*, 2024). However, a significant progress has been achieved over the decades, particularly during the MDGs (Beattie *et al.*, 2015; Islam & Kabir, 2024; Khanam & Kabir, 2023b). The rate of development toward achieving universal health care in accordance with the SDGs is currently substantially faster than it was previously (Alam, Khanam, Kabir, Chowdhury, *et al.*, 2024; Joarder *et al.*, 2019; Khanam *et al.*, 2023). As a result, it is encouraging that such development is now making a major contribution to lowering child mortality, even though evidence to support this knowledge is missing in Bangladesh and other LMICs. The lack of longitudinal data, as well as connected person and healthcare facility level data, is the cause of this deficiency. As a result, available studies focused mostly on socio-demographic and behavioral variables linked with child mortality, such as mother age and education, undernutrition, and poor feeding practices, while the impacts of healthcare facility level characteristics were disregarded (Alam *et al.*, 2022; Khan & Awan, 2017; Mani *et al.*, 2012; Yaya *et al.*, 2020). As the occurrence of child mortality is linked to a variety of factors, including those at the individual, household, community, and healthcare facility levels, determining such associations without taking healthcare facility level factors into account may result in imprecise findings. To address these limitations, we conducted this study to explore the association between healthcare facility level factors and child mortality in Bangladesh adjusting for individual-, household-, and community level factors.

METHODOLOGY

Study Design and Sampling Procedure

Data from the 2017/18 Bangladesh Demographic and Health Survey and the 2017 Healthcare Facility Survey were linked and analyzed in this study. Details information on the sampling procedure of these surveys has been published in the survey reports (ICF, 2020; NIPORT, 2019). The 2017/18 BDHS is the nationally representative household survey conducted as part of the Demographic and Health Survey Program of the USA. The survey selected nationally representative households through two-stage stratified random sampling methods. At the first stage, a total of list of 675 clusters were selected, covering each division and urban/rural area of Bangladesh. The clusters were selected from a list of 293,579 clusters of Bangladesh which was generated by the Bangladesh Bureau of Statistics as part of the 2011 Bangladesh National Population Census. Finally, a total of 672 clusters was selected after excluding 3 clusters because of the extreme flood. A fixed number of 30 households was selected at the second stage from each selected cluster. Finally, the survey was conducted in 19,457 households with an over 96% inclusion rate. There were 20,376 women in these selected households, of them, 20,127 women were interviewed with a response rate of 98.8%.

The 2017 BHFS was also conducted as part of the Demography and Health Survey program of the USA. The survey collected data from 1,524 healthcare facilities selected proportionately from the public, private and non-government sectors. Both census and stratified random sampling methods were used to select these facilities from the 19,811 registered healthcare facilities in Bangladesh. The GPS point locations are available for each of the 672 PSUs included in the 2017 BDHS and 1,524 healthcare facilities included in the 2017 BHFS. We linked the PSUs with the nearest healthcare facilities using the administrative boundary linkage method. The details of this method have been published elsewhere (Burgert CR, 2014).

Study Sample

We analysed 8772 data of child from the original sample who met the following inclusion criteria: (i) the women who were given at least one live birth within five years preceding the survey and (ii) recorded survival status of the corresponding children.

Outcome Variables

Under-five mortality was the outcome variable in this study. We considered three outcome variables: neonatal mortality (death occurred within 1 month of live birth), infant mortality (deaths occurred within 12 months of live birth) and under-five mortality (death occurred within 60 months of live births). The BDHS recorded these mortality data by asking women whether they had any live birth within five years of the survey date and survival status of their respective children. In the occurrence of more than one live birth within five years, survival status data were collected for every child. These data were then categorized by following the relevant guidelines of the WHO to generate the outcome variables (WHO, 2020).

Explanatory Variables

The primary explanatory variables in this study included the health facility level factors. Several health facility level factors were considered including availability of child healthcare services in the nearest healthcare facilities, readiness of the nearest healthcare facility to provide child healthcare services and average distance on road communication from mother's resided cluster to the nearest healthcare facility where child healthcare services are available. The variables used to generate scores for these corresponding variables are presented in the Supplementary Table 1. A total of 35 variables to generate the score for availability of child healthcare services in the nearest healthcare facilities. We considered a total of 10 variables to generate the score for the readiness of the nearest healthcare facility to provide child healthcare services. For generating scores, we have given "1" point if the service referred by that particular variable was available in the healthcare facility and "0" was given for non-availability. The combined score for each item considered under the particular dimension was then generated by adding the corresponding individual score. The average distance on-road communication of the nearest facility providing child healthcare services was also calculated and included as a health facility-level variable. The cluster nearest child healthcare facility was identified first. Then using Bangladesh road communication data, the average distance from the cluster to its nearest health facility was calculated (Tegegne *et al.*, 2020).

Covariates

Several factors were included as covariates and then categorized as individual-, household-, and community level factors in this study. Individual level factors were maternal age at birth, maternal education, and maternal formal employment status. Households level factors were sex of the household's head, total children ever born, exposure to mass media, and wealth quintile. Place of residence and region of residence were considered as community level factors.

Statistical Analysis

Descriptive statistics were used to describe the characteristics of the respondents. Multilevel mixed-effect logistic regression model was used to assess the associations between child mortality and health facility level factors adjusted for individual-, household-, and community-level factors. The reason for using the multilevel mixed-effect logistic regression model was hierarchical structure of the BDHS data, where individuals are nested within a household and households are nested within a cluster. Previous studies have indicated that the simple logistic regression model overestimates or underestimate the true effects for nested data and recommended using multilevel logistic regression model (Diez-Roux, 2000). Both unadjusted and adjusted models were run. Results are reported as Odds Ratios (OR) with 95% Confidence Intervals (95% CI). All statistical analyses were conducted using Statistical package Stata version 17.0.

Ethics Approval and Consent to Participate

The survey analysed was approved by the institutional review board of ICF and the National Research Ethics Committee of the Bangladesh Medical Research Council. Informed consent was obtained from all participants. All necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived. No separate ethical approval was required to conduct this study. We obtained permission to access this survey and conduct this research. All methods were performed in accordance with the relevant guidelines and regulations.

RESULTS

Background Characteristics of The Respondents

Table 1 presents the background characteristics of the respondents. Mean age of the respondents was 23.7 years and mean years of education was 6.7 years. Mean age of the children was 28.7 months. Approximately 48% of the total children were girls. The prevalence of under-five

Table 1: Background characteristics of the respondents and outcome variables.

Characteristics of mothers	Frequency (n= 8772)	Estimates
Mean age in years (mean ±SD)	8772	23.7 (±5.6)
Mean weight in kilograms (mean ±SD)	8772	51.9 (±10.1)
Mean years in education (mean ±SD)	8772	6.7 (±3.7)
Demographics of under-five children		
Mean age in months (mean ±SD)	8772	28.7 (±17.5)
Girls, prevalence (95% CI)	8772	47.8 (46.6-48.9)
Outcomes		
Neonatal mortality per 1000 live births	260	29.6
Infant mortality per 1000 live births	321	36.6
Under-five mortality per 1000 live births	351	40.1

Note: SD= Standard deviation, CI= confidence interval.

mortality was 40.1 per 1000 live births following infant mortality 36.6 per 1000 live births and neonatal mortality 30 per 1000 live births.

Distribution of Neonatal, Infant and Under-Five Mortality Across Covariates

The distribution of the neonatal, infant and under-five mortality across the selected covariates were explored in Table 2. The prevalence of neonatal mortality was found higher among mothers age range between 20-34 years, secondary educated mothers, mothers not working, mothers who resided in a household whose head was male, place of residence was rural, and place of region was Dhaka and Chattogram. A similar pattern was observed for infant and under-five mortality.

Table 2: Distribution of neonatal, infant and under-five mortality across background characteristics, Bangladesh, 2017/18.

Characteristics	Neonatal mortality per 1000, %	Infant mortality per 1000, %	Under-five mortality per 1000, %
Individual level factors			
Maternal age at birth			
≤19	37.9	35.4	34.4
20-34	58.6	61.4	62.6
≥35	3.6	3.2	3.0
Mother's educational level			
No education	8.6	8.6	9.7
Primary	33.3	35.4	34.5
Secondary	47.1	46.2	46.4
Higher	11.1	9.9	9.4
Mother's working status			
No	54.9	56.4	56.9
Yes	45.1	43.6	43.1
Household level factors			
Sex of the household's head			
Male	86.0	87.4	88.0
Female	14.0	12.6	12.0
Total children ever born			
≤2	58.3	55.4	54.8
>2	41.7	44.6	45.2
Exposure to mass media			
Not exposed	33.2	36.2	37.9
Moderate exposed	55.1	53.6	52.4
Highly exposed	11.7	10.2	9.7
Wealth quintile			
Poorest	23.9	24.5	25.9
Poorer	18.2	19.9	20.1
Middle	19.2	17.6	17.0
Richer	20.7	21.1	20.8
Richest	18.0	16.9	16.2
Community level factors			
Place of residence			
Urban	32.8	31.2	30.0
Rural	67.2	68.8	70.0
Place of region			
Barishal	6.0	6.2	6.4
Chattogram	21.5	18.5	18.9
Dhaka	27.2	27.4	26.7

Khulna	7.3	7.9	7.7
Mymensingh	6.7	7.2	7.1
Rajshahi	10.2	10.9	12.3
Rangpur	12.7	10.7	10.3
Sylhet	8.5	11.2	10.7

Note: Presented as column percentages.

Association of Child Mortality with Health Facility Level Factors

The association of child mortality with health facility level factors are presented in Table 3. We found significant effects of healthcare facility level factors on each of the neonatal mortality, infant mortality, and under-five mortality. The likelihoods of neonatal mortality were found to be declined by 38% (aOR, 0.62; 95% CI, 0.43-0.85) and 36% (aOR, 0.64, 0.47-0.86) for one-unit increase in score of the nearest healthcare facility readiness to provide child healthcare services, respectively. In contrary, we found 1.18 times (95% CI, 1.01-1.45) higher probability of neonatal mortality for every km increase in distance of the nearest healthcare facility from mothers' homes where child healthcare services available. Similarly, the reductions of infant mortality were found to be associated with a 20% (aOR, 0.80, 95% CI, 0.68-0.99) and 37% (aOR, 0.63, 95% CI, 0.38-0.98) for one-unit increase in the scores of the availability of child healthcare services at the nearest health care facility and readiness of the health care facility to provide child healthcare services. Moreover, one kilometer increase of the nearest healthcare facility from mothers' homes was found to be associated with 1.18 times (aOR, 1.16, 95% CI, 1.01-1.59) increase in infant mortality. The under-five mortality was found associated with a 27% (aOR, 0.73, 95% CI, 0.41-0.96) reduction for one-unit increase score of the of readiness of the nearest healthcare facility to provide child healthcare services. In contrary, under-five mortality was found to be increased by 13% (aOR, 1.13, 95% CI, 1.04-1.36) for every unit increase in the average distance of the nearest healthcare facility from mothers' homes.

Table 3: Multilevel logistic regression models assessing the relationships of several forms of child mortality with health facility level factors adjusted for individual-, household-, and community-level factors

Characteristics	Neonatal mortality, OR (95% CI)	Infant mortality, OR (95% CI)	Under-five mortality, OR (95% CI)
Unadjusted association			
The availability of child healthcare services at the nearest health care facility	0.59 (0.43-0.85)**	0.80 (0.68-0.99)**	0.88 (0.54-1.29)
Readiness of the health care facility to provide child healthcare services	0.60 (0.41-0.83)**	0.63 (0.38-0.98)**	0.70 (0.40-0.95)**
Average distance on road communication from women's resided cluster to the nearest health facility	1.25 (1.03-1.55)**	1.16 (1.01-1.59)**	1.10 (1.01-1.33)**
Adjusted association++			
The availability of child healthcare services at the nearest health care facility	0.62 (0.43-0.85)**	0.80 (0.68-0.99)**	0.90 (0.56-1.30)
Readiness of the health care facility to provide child healthcare services	0.64 (0.47-0.86)**	0.63 (0.38-0.98)**	0.73 (0.41-0.96)**
Average distance on road communication from women's resided cluster to the nearest health facility	1.18 (1.01-1.45)**	1.16 (1.01-1.59)**	1.13 (1.04-1.36)**

*Notes: **p<0.01, *p<0.05. ++Models are adjusted for maternal age at birth, maternal education, maternal formal employment status, sex of the household's head, total children ever born, exposure to mass media, wealth quintile, place of residence and region of residence*

DISCUSSION

The aim of this study was to explore the associations of several forms of child mortality with healthcare facility level factors. Three healthcare facility level factors were included in this study which were generate availability of the child healthcare services at the mothers' home nearest healthcare facility, readiness of the mothers' homes nearest healthcare facility to provide child healthcare services, and average distance of the nearest healthcare facility providing child healthcare services from mothers' homes. On average, increasing scores of the health facility level factors were found protective to the occurrence of neonatal, infant, and under-five mortality. These findings are robust as they were generated by analyzing

the two nationally representative datasets and adjusted for possible confounders. The findings will help the policymakers to know the area where focus is needed to face ongoing challenges of under-five mortality and in designing policies and programs, accordingly.

There is a common perception that insufficient healthcare resources and poor quality of existing services have an adverse effect on child health, including morbidity and mortality (Alam, Khanam, Rana, *et al.*, 2024; Lungu *et al.*, 2016; Zhongming *et al.*, 2018). However, when it comes to specific dimensions, such as specific areas of insufficiency, extant research in LMICs is generally restricted and cannot answer these questions. We considered healthcare facility level factors such as availability of child healthcare services at the mothers' homes nearest healthcare facility, and determined their associations with neonatal, infant, and under-five mortality. As a result, taking into account such specific wings will assist policymakers in determining which regions ought to be addressed.

Poor administrative and managerial systems, reduced availability of child healthcare services, and the readiness of the healthcare institution to deliver child healthcare services were shown to be associated with increased odds of newborn, infant, and under-five mortality in this study. Such relationships may have both direct and indirect paths. The availability and quality of healthcare services at the healthcare center are dependent on the effective interconnection of the healthcare facility's various wings (Alemu *et al.*, 2020). This encompasses administrative and managerial systems, healthcare staff and equipment availability, and their preparedness to offer healthcare services. Poor performance in one wing influences performance in other wings, and so indirectly affects the entire performance of the healthcare center (Bender *et al.*, 2024; ICF, 2020; NIPORT, 2019).

In Bangladesh, like in other LMICs, the government-run healthcare system is a driving force in delivering child healthcare services, particularly in complex situations. The reasons for this are: (i) the proximity of a healthcare facility, (ii) free or low-cost healthcare services, and (iii) the availability of healthcare people and equipment (Kabir & Islam, 2022; Leslie *et al.*, 2017). However, healthcare facilities in Bangladesh are not uniformly equipped, and the treatments provided are inconsistent (Begum *et al.*, 2022; Islam & Biswas, 2014). The sub-district, thana, and community hospitals provide basic services. As a result, people must go to district or divisional level hospitals to obtain healthcare treatments for their children in complex instances. This might lead to an increase in child mortality since many individuals do not have the financial means to go to district/divisional level hospitals, buy medicines, and stay for treatments (Kabir *et al.*, 2022; Kadobera *et al.*, 2012; Karra *et al.*, 2017). Even if people have this capacity, transportation is still an issue because (i) transportation to district or divisional level hospitals may not be available, especially in rural areas, and (ii) district or divisional level facilities may be located far away and may require longer hours to reach the healthcare facility (Kadobera *et al.*, 2012; Karra *et al.*, 2017; Uddin *et al.*, 2024). This notion is consistent with the findings of this study, which found a 15-20% rise in under-five mortality for every additional kilometer of healthcare facility nearest to the maternal households where child healthcare services are offered. Other research in LMICs have shown a similar relationship (Sarrassat *et al.*, 2019; Zaman *et al.*, 2014).

The implications of our findings are that significant investment in the healthcare sector is required to ensure the provision of child healthcare services at community level healthcare facilities such as community clinics. However, healthcare institutions that provide child healthcare services are typically found in metropolitan regions, whereas rural healthcare facilities are frequently under-resourced and unable to provide child healthcare services. Lack of qualified healthcare professionals at community level healthcare institutions, inadequate or underdeveloped infrastructure, and a lack of medical equipment are the reasons. Unchanged government budg*et al*locations in healthcare sectors throughout the years (2.02% in 2000 and 2.37% in 2016) in the face of increased healthcare needs are frequently drivers of such crises (Bank, 2017; Khanam *et al.*, 2024; Khanam & Kabir, 2023a). Transportation services in urban healthcare institutions are also missing to deliver children in need of critical care to urban healthcare facilities. As a result, upgrading the transportation facilities of healthcare facilities should be prioritized. This necessitates universal healthcare coverage, which is also an aim in the SDGs to be fulfilled by 2030. As a result, emphasis must be placed on governmental policies and initiatives.

This study has several strengths and some limitations. The most important strength of this study is the analysis of two nationally representative household and healthcare facility surveys data. By this, the associations of healthcare facility level factors with several form of child mortality were determined. Moreover, findings were adjusted with the range of adjustment factors at the individual-, households-, and community- level factors. The correlations were identified using advanced statistical modeling. As a result, the study's conclusions are robust and may be applied to national policy and program development. However, since we analysed a cross-sectional household survey data, the findings are correlational only, not casual. Regardless of these limitations, this study in the context of LMICs and Bangladesh that examined the influence of health facility-level factors on under-five mortality adjusted for individual-, household-, and community-level factors. Therefore, the finding of this study is likely to be precise and can be generalizable in countries with similar features to Bangladesh and may help in making evidence-based policies.

CONCLUSION

We reported prevalence of under-five, infant and neonatal mortality rates in Bangladesh were 40, 37 and 30 per 1000 live births. Increase scores on the availability of child healthcare services at the nearest healthcare facility

and readiness of the mothers' homes nearest healthcare facility to provide child healthcare services were found negatively associated with neonatal and infant mortality. Average distance on road communication from mothers' resided clusters to the nearest health facility was found to be increased in the likelihoods of neonatal, infant and under-five mortality. Healthcare facilities should be strengthened to provide child healthcare services. Healthcare facilities' transportation facilities, including ambulance services, should also be strengthened.

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Availability of Data And Materials

The data that support the findings of this study are available from the Measure DHS Program's website: https://dhsprogram.com/data/available-datasets.cfm. Data are, however, available from the authors upon reasonable request and with permission of The DHS Program.

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Appendix

Supplementary Table 1: Variables included in creating the health facility level factors

Name of health facility level factors	Number of items	Variables considered in generating health facility level factors
Availability of child healthcare services	35	Child health services: outpatient curative care for sick children, growth monitoring, child vaccination services, and diagnosis of and/or treatment for child nutrition.
		Equipment for child curative care services: child scale, length or height broad, thermometer, stethoscope, infant scale, growth chart, MUAC tape, timer.
		Trained staff for child curative care services: IMCI (during the past 24 months), growth monitoring (during the past 24 months)
		Essential and priority medicine: ORS, amoxicillin syrup, suspension, or dispersible, cotrimoxazole syrup, suspension, or dispersible, paracetamol syrup or suspension, vitamin A capsules, mebendazole/albendazole, zinc tablets or syrup, ampicillin powder for injection, ceftriaxone powder for injection, gentamycin for injection, and benzathine benzylpenicillin for injection.
		Infection control and laboratory diagnostic capacity: soap, running water, alcohol-based hand disinfectant, latex gloves, sharps container, waste receptacle, haemoglobin test, stool microscopy.

Readiness of healthcare facilities to provide child curative care services	10	IMIC guidelines, staff trained in IMIC, child scale, thermos-meter, growth chart, zinc tablets or syrup, ORS, amoxicillin syrup, suspension, or dispersible, paracetamol syrup or suspension, meben-dazole/alben-dazole.
Average distance on road communication from women's resided cluster to the nearest health facility		Average distance on road communication from women's resided cluster to the nearest health facility.