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Title: Quality of care and effective coverage analysis for sick children in low- and middle-income countries

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Extended Abstract

Background

Low- and middle-income countries (LMICs) continue to experience high child mortality burden, despite substantial increases in child health service coverage. In 2022, Sub-Saharan Africa and Southern Asia countries accounted for more than 80% of the 4.9 million under-five deaths in the world. [1] Malaria, diarrhea and pneumonia are the major killers of children 1-59 months in LMICs, leading to their prioritization in the integrated management of childhood illnesses (IMCI) strategy. [2] Low-quality health systems are identified as a plausible explanation of the persistent high child mortality rates in LMICs. Most coverage indicators are service contact measurements which do not reflect the actual content or quality of services and interventions received during clinical encounters. Poor-quality care results in more than 8.6 million population deaths per year. [3] Also, 71% of neonatal deaths, 33% of stillbirths and 54% of maternal deaths could be averted per year by increasing intervention coverage and improving health service quality. [4] The World Health Organization emphasized that quality of care remains a significant challenge, and inadequate quality results in excess and avoidable mortality, particularly among children. [5]

The objective of this study was to assess the quality of care, coverage of curative child health services and to determine whether sick children are receiving quality services according to standards across several settings.

Methods

The study was conceptualized based on the World Health Organization's (WHO) recommendations along with other global Integrated management of child illness (IMCI) guidelines and quality of care frameworks. We linked data from household surveys and health facility surveys in eight countries with data available to estimate the effective coverage of child illness treatment. The countries are Bangladesh, DR Congo, Haiti, Kenya, Malawi, Nepal, Senegal and Tanzania. We used data from the standard Demographic and Health Survey (DHS) and the Service Provision Assessment (SPA) both conducted by the Demographic and Health Survey Program (DHS Program). [6, 7] We also included the Multiple Indicator Cluster Survey (MICS) implemented by the United Nations Children's Fund (UNICEF), and the Health Facility Assessment (HFA) surveys implemented by countries with technical support from the World Health Organization. We focused on two dimensions of quality of care: health service readiness, also known as structural quality and service provision quality also known as process quality. [8, 9]

Health service readiness includes the presence of child specific health service, the availability of equipment and supplies, diagnostics, training and supervision of the staff, and essential medicines and commodities for child curative care in facilities. [6, 10]. The process quality refers to the provision of health services or care by health personnel according to recommended protocols and standards of the country. It comprises the assessment of the child's health and health history, physical exams, treatment of the child, and the counseling of the caretakers. [11-13] We assessed gaps in service availability and coverage, lack of service readiness, missed opportunity and inadequate service process. Service readiness and process quality were defined according to recommended guidelines. We analyzed the service readiness, quality of care and effective coverage by individual illness and combined illnesses accounting for equity dimensions. We focused on diarrhea, malaria, and pneumonia due to data availability and the fact that they are among the top causes of child death in LMICs. [2] These three illnesses are also those mainly assessed in IMCI services.

Results

We found that 7 to 42% of children experienced at least one illness. The Integrated management of child illnesses (IMCI) service was available in 58%-85% of facilities. On average facility readiness scores indicated insufficient readiness of facilities to deliver IMCI service, only between 55% and 66% of facilities were ready across the eight countries. There were large readiness gaps between hospitals and health centers, favoring the former. The lowest readiness scores were for facilities' diagnostics capacity, and staff training and supervision. The quality of care scores showed that only 51% to 60% of process quality tracer items were in line with standards. Counseling of caretakers and treatment had the lowest and highest process quality score respectively. Hospitals had higher readiness and quality scores compared to primary facilities and the private sector. We found large gaps in service readiness and significant inadequate service processes in all countries.

The effective coverage cascade highlighted large gaps of service readiness and significant inadequate service provision in all the countries. We found that a large proportion of health facilities visited for careseeking did not meet the required capacity to provide IMCI services. The proportion of facilities visited ready for IMCI services ranged from 15% (Nepal) to 46.0% (Malawi). Furthermore, a large proportion of service provision did not meet quality standards for sick child care. The proportion of children receiving care according to standards was 7% (Nepal) to 29% (Malawi). That was true for combined illnesses and for individual illness. Our findings are consistent with evidence from other studies and highlighted the need for ensuring complete components of IMCI services and quality service provision according to standards. [13-15]

The level of education of the mother/caretaker, the level of poverty and the place of residence were the most discriminant factors for careseeking, service coverage and quality of care. This is consistent with other evidence which showed systematic pro-educated, pro-rich and pro-urban inequalities, and highlighted the importance of these dimensions for supply and demand generation of care during childhood. [14, 16, 17] On the other hand, the differences by the age of the mother and child's characteristics (age and sex) were marginal. We found significant differences for most of the equity dimensions in Haiti, Senegal, and Tanzania. DR Congo

constituted the second equity group with significant differences by place of residence and wealth quintile. There were no or little inequalities in the remaining countries including Bangladesh, Kenya, Malawi, and Nepal which represented the third equity group. However, the service coverage and quality of care were particularly poor in some of the countries with low inequalities such as Nepal.

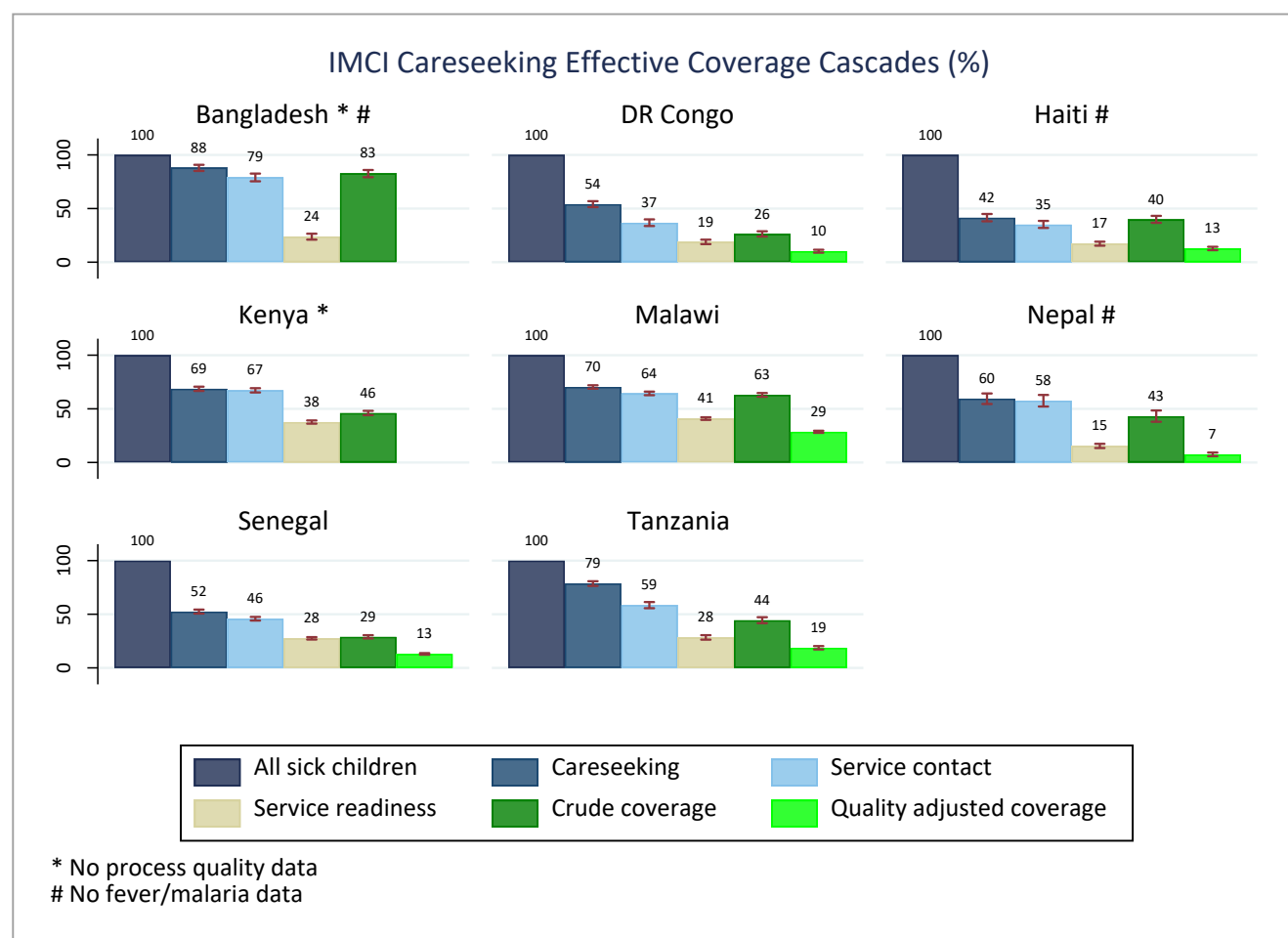


Figure 1. IMCI careseeking effective coverage cascades

Conclusion

The capacity of health facilities to deliver health care to sick children according to accepted standards remains a major issue in most health facilities in LMICs. That leads to low performance of health facilities, significant missed opportunities, and large gaps in intervention coverage and quality of care gaps. Our study highlighted suboptimal readiness of health facilities and poor process quality undermining accelerated progress in reducing child mortality in LMICs. Rapid progress toward the Sustainable Development Goals (SDG) for health must address severe quality of care gaps in the treatment of most killer diseases among children by revamping the IMCI

implementation strategy. Our study also reinforces calls for more equitable and socially compatible health policies in terms of service supply and demand generation among less educated, poorer populations and those living in rural areas. That requires strengthening the training and supervision of health personnel to address IMCI issues. There is also a need to strengthen facility diagnostic capacity, mainly for primary health centers. The private sector, which contributes significantly to service delivery, also requires particular attention given the poor service readiness and quality of care in a few countries. In view of this, strengthening the health care system through the health workforce, and service capacity, quality and access appear as a prerequisite and priority to achieving the goal of universal child health coverage in LMICs.

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