

**Coverage of maternal and child healthcare
services in Ethiopia: Measuring progress
towards universal health coverage using the
Demographic Health Surveys**

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A thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

under the supervision of Professor Andrew Hayen
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University of Technology Sydney
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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Aster Ferede Gebremedhin, declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Faculty of Health at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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“I can do all things through Christ who strengthens me.” (Philippians 4:13)

Abbreviations

AABF	Age-appropriate breastfeeding
ANC	Antenatal Care
ARI	Acute respiratory infection
BCG	Bacille Calmette–Guérin
CAREP	Care seeking for pneumonia
CC	Crude coverage
CCI	Composite Coverage Index
COC	Continuum of care
CSA	Central Statistical Agency
DHS	Demographic Health Survey
DPT	Diphtheria–Tetanus–Pertussis
EA	Enumeration Area
EC	Effective Coverage
EDHS	Ethiopia Demographic and Health Survey
GPS	Global Positioning System
FMOH	Federal Ministry of Health of Ethiopia
FP	Family planning
HEP	Health Extension Program
HSDP	Health sector development program
HSTP	Health sector transformation program
LMICs	Low and middle-income countries
MCH	Maternal and child health
MSL	Measles

ORT	Oral rehydration therapy
PNC	Postnatal care
PNCM	Postnatal care for mothers
PNCN	Postnatal care for newborns
RMNCH	Reproductive, maternal, neonatal and child health
SBA	Skilled birth attendance
SDG	Sustainable Development Goals
SNNP	Southern Nations Nationalities and Peoples
SSA	Sub-Saharan Africa
TTN	Tetanus toxoid
UHC	Universal Health Coverage
WHO	World Health Organisation

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Abstract

Background: In low and lower-middle-income countries, maternal and child health interventions have not been considered holistically. Evidence suggests that inequity in the coverage of services impedes progress in maternal and child health and conventional coverage measures do not account for quality. This research aimed to generate policy-relevant evidence by comprehensively assessing the coverage and inequalities in maternal, and child health interventions across the continuum of care in Ethiopia.

Methods: This research comprises a systematic review and three cross-sectional analyses of the Ethiopia Demographic and Health Surveys. The first study identified the determinants of the continuum of care in maternal and child health using quantile regression. The second study assessed inequalities in maternal and child health coverage along the continuum of care and the major contributors to the inequality. The third study presented a systematic review of studies evaluating effective coverage of maternal and child health services. Finally, the fourth study assessed the effective coverage of newborn postnatal care in Ethiopia.

Results: The results of the first study showed that the average composite coverage index was 39%. Postnatal care for newborns had the lowest coverage (12%). Further, individual, socioeconomic and reproductive factors influenced the continuum of care differently across levels of the composite coverage index. Findings from the second study revealed that the composite coverage index increased from 24% in 2000 to 42% in 2016. However, coverage was pro-rich, and the wealth quintile was the major contributor to the inequalities in all survey years.

The systematic review found (1) the effective coverage values were lower when the crude coverage estimates were adjusted to account for the quality of care; (2) quality

assessments addressed structural, process and outcome domains individually or combined; (3) the wealthiest quintile had a higher effective coverage of services than the poorest quintile. The fourth study found that the crude coverage of newborn postnatal care was 13% in Ethiopia, but 9% when adjusted for quality. Further, a spatial variation across regions and a pro-rich inequality in high-quality newborn postnatal care were demonstrated.

Conclusions: Ethiopian women and children are not receiving the best possible health benefits, and government efforts to address inequity are insufficient, underscoring areas for improvement. Tailored interventions are required that address the determinants of the continuum of care. Furthermore, the findings suggest that national policy and programming efforts should prioritise accessibility and high-quality care, particularly for disadvantaged sub-groups and geographical locations that lag behind.