



Research Article

Maternal and Child Health Interventions in Rural Africa

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Abstract

Despite global progress, maternal and child health (MCH) in rural Africa remains a persistent public health challenge. This article critically examines the status, interventions, and gaps in MCH outcomes across rural sub-Saharan Africa. Maternal mortality remains high at 442 deaths per 100,000 live births in 2023, while under-five mortality stands at approximately 70 per 1,000—far above global targets. Key drivers of poor outcomes include inadequate infrastructure, health workforce shortages, socio-cultural barriers, and economic hardship. The article evaluates the effectiveness of community-based interventions, mobile and digital health (mHealth) technologies, primary care strengthening, and integrated service delivery models. Case studies, particularly from rural Zambia, demonstrate the impact of Safe Motherhood Action Groups (SMAGs) and other grassroots models in improving antenatal care, skilled birth attendance, and postnatal services. It also highlights the success of Integrated Management of Childhood Illness (IMCI), nutrition and WASH interventions, and mHealth platforms in addressing preventable mortality. Despite clear gains, systemic challenges remain. The article concludes with policy recommendations that stress community engagement, digital integration, infrastructure development, and cross-sectoral collaboration as critical levers to reduce maternal and child mortality and achieve SDG 3 in rural African contexts.

Keywords: Maternal Health; Child Mortality; Rural Africa; Community Health Workers; Safe Motherhood Action Groups (SMAGs); mHealth; Antenatal Care; Skilled Birth Attendance; Postnatal Care;

INTRODUCTION

Maternal and child health (MCH) stands as a critical component of public health in sub-Saharan Africa, with stark disparities between rural and urban areas. Despite overall declines in maternal and child mortality over the last two decades, progress remains slow, particularly in remote and underserved rural regions. Addressing these gaps is vital for achieving the Sustainable Development Goals (SDGs), especially those relating to health and well-being (SDG 3). This article examines the state of maternal and child health in rural Africa, explores effective interventions and their impacts, and highlights ongoing challenges, policy implications, and recommendations for sustained improvement.

Overview of Maternal and Child Health Challenges

Maternal Health Burden

Africa continues to experience the highest maternal mortality in the world. The region accounted for approximately 70% of global maternal deaths in 2023, with 178,000 women dying annually due to pregnancy or childbirth complications^{[1][2][3]}. Most rural areas suffer from insufficient healthcare infrastructure, transportation barriers, and shortages of skilled birth attendants, making timely access to quality care a major challenge^{[4][5]}.

- Maternal mortality rate in Africa (2023): **442 per 100,000 live births** (down from 727 in 2000)^[1].
- Key causes of maternal death: hemorrhage, hypertensive disorders, infections, and unsafe abortion.

CHILD HEALTH BURDEN

Children in rural Africa face disproportionate risks from preventable diseases and poor nutrition:

- Half of global under-five child deaths occur in Africa^[6], primarily from infectious diseases such as pneumonia, diarrhea, malaria, and complications of preterm birth.
- Undernutrition and unsafe environmental conditions exacerbate child vulnerability^[7].
- Many rural children lack access to immunization, growth monitoring, or quality healthcare services.

Key Interventions in Maternal and Child Health

Community-Based Interventions

Community-based initiatives, such as Safe Motherhood Action Groups (SMAGs) and other local volunteer networks, have expanded coverage of antenatal care (ANC), skilled birth attendance, and postnatal care (PNC) in remote districts. Evaluation in rural Zambia showed substantial gains in service utilization after implementation of SMAGs—demonstrating the value of locally-led, culturally sensitive outreach^[8].

Intervention	Rural Coverage (Before SMAGs)	After SMAGs Implementation
Antenatal care visits	Low	Substantially increased
Skilled birth attendance	Very low	Markedly improved
Postnatal care utilization	Limited	Increased

Key Features:

- Health education and awareness campaigns led by local leaders.
- Basic training for community health workers and traditional birth attendants.
- Household visits and support for pregnant women and newborns.

MOBILE AND DIGITAL HEALTH (MHEALTH)

Mobile health (mHealth) solutions—including SMS reminders, smartphone apps, and telemedicine—are increasingly used to overcome barriers of distance and limited human resources^{[9][10][11][12]}. mHealth interventions have shown success in:

- Reminding women about ANC and immunization appointments.
- Delivering health education on pregnancy danger signs and nutrition.
- Facilitating emergency referrals and remote consultations.

Studies report higher rates of ANC attendance, improved vaccination coverage, skilled delivery, and continuum of care when mHealth interventions are integrated into rural health systems^{[10][11]}.

Strengthening Primary Care and Health Systems

Investment in health system infrastructure—clinics, equipment, trained staff, and supply chains—remains fundamental. Models centered on task-sharing (delegating tasks to nurses, midwives, or community health workers) have enhanced service reach in remote villages^{[4][13][14]}. Integration of maternal, newborn, and child health (MNCH) services—such as combining ANC with immunization and nutrition counseling—improves cost-effectiveness and program sustainability.

Integrated Management of Childhood Illness (IMCI)

IMCI, a World Health Organization strategy, trains health workers to assess, classify, and treat common childhood illnesses using up-to-date protocols. Launch of IMCI in over 28 African nations is credited with reduced child illness and mortality and improved health worker skills^[15].

Environmental and Nutrition Interventions

Improvements in water, sanitation, and hygiene (WASH), school feeding programs, and micronutrient

supplementation for mothers and young children significantly contribute to lowering child mortality and stunting rates^[7]. Addressing underlying determinants such as nutrition and household environment is crucial to holistic MCH improvement.

Barriers to Intervention Implementation

- **Infrastructure deficits:** Poor roads, lack of electricity, inadequate transport.
- **Healthcare worker shortages:** Low staffing levels, weak incentives for rural postings, limited ongoing education and support^[4].
- **Socio-cultural barriers:** Traditions, gender norms, mistrust in formal healthcare, preference for home births^[16].
- **Economic barriers:** Poverty limits families' ability to pay for health services, transport, or necessary medications^[16].
- **Poor integration of services:** Fragmentation between maternal and child programs, underutilization of data for planning.

Impact Assessment: Progress and Remaining Gaps

Maternal and Child Mortality Trends

- Between 2000 and 2023, Africa’s maternal mortality fell by ~40%. However, progress must accelerate twelve-fold to achieve SDG targets by 2030^[1].
- Child mortality, while declining, remains well above global averages.

Indicator	2000	2023	SDG 2030 Target
Maternal mortality (per 100,000)	727	442	<70
Under-5 mortality (per 1,000)	>150	~70	<25

Utilization and Coverage

- Only 12.6% of rural Nigerian mothers received prenatal care in healthcare facilities; 23.3% began care in the first trimester^[16].
- In many rural communities, less than one-third of pregnant women complete the recommended four ANC visits^{[4][5]}.
- Coverage is higher in areas with strong community engagement and digital interventions^{[8][9][12]}.

CASE EXAMPLE: RURAL ZAMBIA

A community-based intervention in Zambia (SMAGs) resulted in:

- Increased ANC attendance.
- Higher skilled birth attendance rates.
- Improved postnatal care utilization.

These outcomes demonstrate the value of empowering local actors and tailoring strategies to specific rural contexts^[8].

Visualizing the Progress

Maternal Mortality in Africa (2000–2023)

Year	Maternal Mortality (per 100,000 live births)
2000	727
2010	570
2023	442

Key Interventions and Outcomes

Intervention Type	Outcome Result
Community-based	↑ ANC & SBA utilization, ↑ care coverage ^[8]
mHealth	↑ appointment attendance, ↑ vaccination ^{[10][9]}
IMCI	↓ child illness, ↑ trained health workers ^[15]
Nutrition/WASH	↓ stunting, ↓ under-five mortality ^[2]

Policy Implications and Recommendations

- **Strengthen community-level engagement:** Expand training and resourcing for community health workers and local action groups.
- **Scale up digital and mobile health:** Leverage mobile phone penetration for health promotion, case tracking, and appointment reminders.
- **Improve infrastructure:** Invest in rural health facilities, supply chains, and transport networks to enable timely care.
- **Integrate services:** Deliver maternal, newborn, and child health services as a package to improve efficiency and uptake.
- **Support for vulnerable groups:** Target interventions to the most underserved populations—rural poor, adolescent mothers, and marginalized ethnic groups.

CONCLUSION

Improving maternal and child health in rural Africa is both an urgent moral obligation and a cornerstone for achieving sustainable development. While remarkable progress has been made—thanks to community mobilization, digital innovations, primary care strengthening, and integrated services—major gaps persist. A sustained, holistic approach anchored in local realities, policy commitment, and international support is key to ensuring every mother and child has the opportunity for a healthy life.

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