Maternal and Newborn Health Research in The Gambia

Report on the Workshop to Identify National Maternal and Newborn Health Research Priorities

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Content

Acronyms

CHNRI	Child Health Nutrition Research Initiative
EFSTH	Edward Francis Small Teaching Hospital
GDHS	Gambia Demographic and Health Survey
HMIS	Health Management Information System
MDSR	Maternal Death Surveillance and Response
MNH	Maternal and Newborn Health
MoH	Ministry of Health
MRCG at LSHTM	MRC Unit The Gambia at the London School of Hygiene & Tropical Medicine
RMNCAH	Reproductive, Maternal, Newborn, Child, and Adolescent Health
SDG	Sustainable Development Goals

> The Gambia Ministry of Health is committed to improving healthcare services for women and newborns by promoting research to generate knowledge, guiding policy formulation and informed decision-making.

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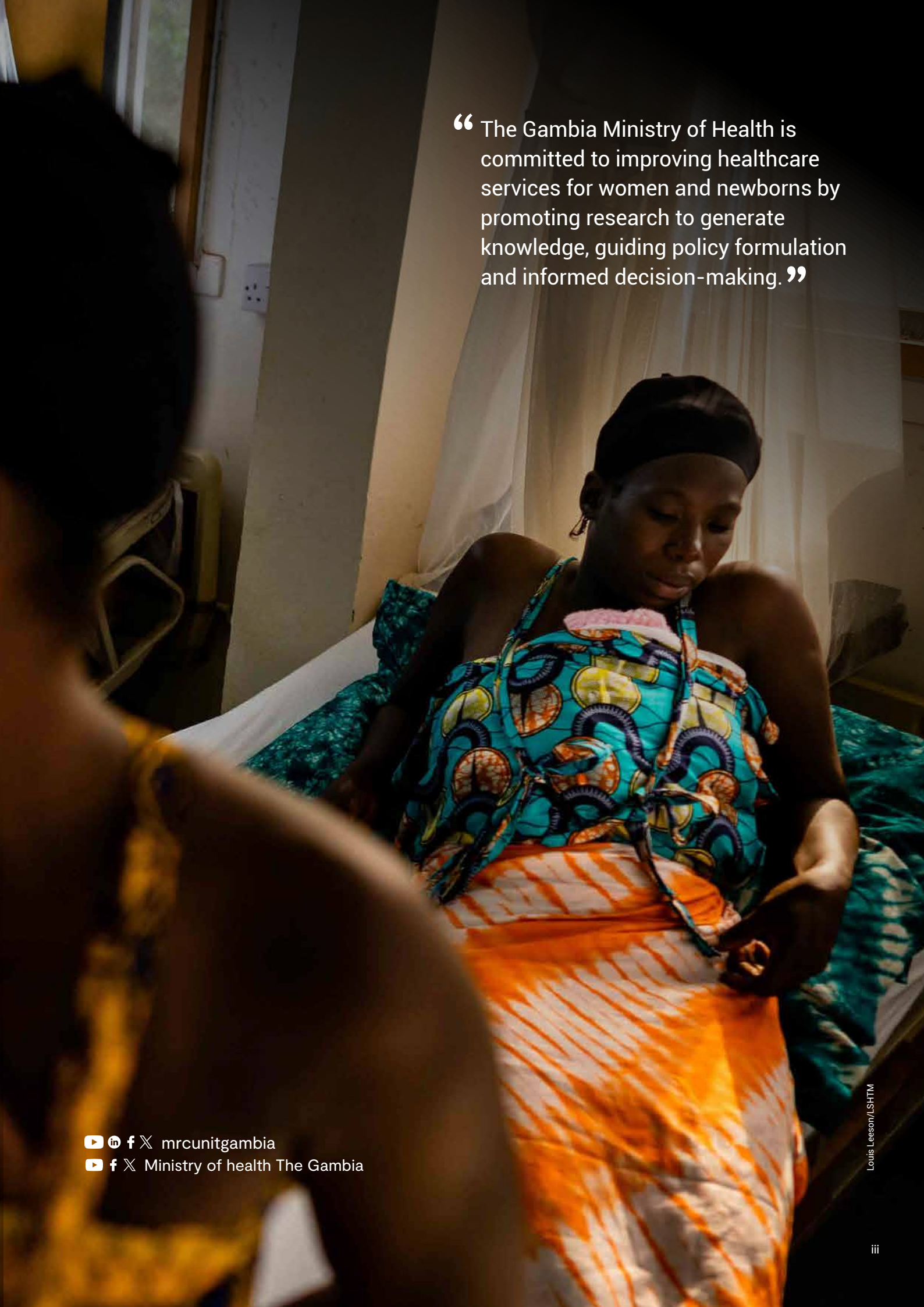
Foreword

Maternal and newborn health is essential to healthcare systems worldwide, and it reflects individual and community well-being, strength, and resilience. Improving maternal and newborn health is a healthcare issue and a reflection of our collective dedication to the well-being of families and communities. The Reproductive Maternal, Newborn, Child, and Adolescent Health (RMNCAH) Policy (2017 – 2026) outlines our commitment to accelerating progress to end all preventable maternal and newborn deaths, promoting healthy families and communities, and ensuring the well-being of future generations. In The Gambia, ensuring optimal maternal and newborn health outcomes is a complex challenge that requires concerted efforts across various sectors. Our unique cultural diversity, evolving global health landscape, and healthcare infrastructure shape our journey. These factors present challenges and opportunities that make our approach to maternal and newborn health distinct and compelling.

The Ministry of Health (MoH) is committed to improving healthcare services for women and newborns by promoting research to generate knowledge, guiding policy formulation and informed decision-making. This workshop report plays an essential role in our strategic initiatives. It identifies research priorities for maternal and newborn health in The Gambia, which is of great significance as we count down to the end of the Sustainable Development Goal (SDG) era. Identifying these research priorities is not just an administrative task but a strategic necessity that guides our efforts to address knowledge gaps, utilise innovations, and optimise resource allocation. It requires collaboration across sectors, involving healthcare professionals, policymakers, researchers, community leaders, and the valuable insights of women and families. The Gambia presents a unique socio-cultural context, demographic profile, and healthcare infrastructure that makes advancing maternal and newborn health outcomes both challenging and opportunistic. Your work, guided by these research priorities, can profoundly impact the health of women and newborns in The Gambia.

We recognise that not everyone has equal access to healthcare, and we are dedicated to implementing inclusive strategies to ensure that nobody is left behind. The MoH aims to provide equitable healthcare delivery by collaborating with partners. We are working towards improving maternal and newborn health outcomes for all individuals, irrespective of their background or circumstances. Our approach is focused on promoting health equity. We aim to strengthen health systems, empower communities, and utilise innovative approaches to bridge access and service delivery gaps. The report's findings and recommendations are guided by this principle. This report highlights the interconnectedness of maternal and newborn health with broader global health challenges.

As we carefully examine the research priorities outlined in this report, we must remember the urgency and significance of our collective efforts to achieve the SDG targets and enhance maternal and newborn health in The Gambia. These priority research questions must be answered and implemented soon to demonstrate the results by 2030. I urge all stakeholders, including government agencies, civil society organisations, academic and research institutions, and international partners, to actively engage with the recommendations and findings presented here. Together, we can make significant progress towards improving maternal and newborn health outcomes in The Gambia, ensuring a healthier future for generations.

Dr Mustapha Bittaye
Director of Health Services,
Ministry of Health The Gambia
April 2024

"Ensuring optimal maternal and newborn health outcomes is a complex challenge that requires concerted efforts across various sectors. Our unique cultural diversity, evolving global health landscape, and healthcare infrastructure shape our journey."

Louis Leeson/LSHTM

Acknowledgement

Introduction

Ensuring the health and well-being of mothers and newborns is a cornerstone of global, regional, and national public health efforts. It reflects the fundamental right to safe and healthy pregnancies, childbirth, and postpartum care. The Gambia has made commendable progress in maternal and newborn health, yet significant hurdles remain. High maternal and newborn mortality rates persist, exacerbated by medical and social-cultural factors, including disparities in healthcare access between urban and rural areas, early marriage, low levels of education among women, and entrenched traditional beliefs and practices related to childbirth. Adopting a comprehensive, coordinated, and collaborative approach to addressing the multifaceted factors that impact maternal and newborn health (MNH) outcomes is crucial. This approach should combine medical interventions with efforts to address social determinants of health. These determinants are complex and interrelated, necessitating a sustained and responsive effort to ensure that interventions are effective and sustainable for the benefit of all.

Research is crucial in advancing knowledge, identifying effective interventions, and improving health outcomes for mothers and newborns. The empirical evidence generated through health research helps inform policies, practices, and interventions to improve population health and reduce health inequities, all critical to realising the SDG goals. In Africa, health research is often influenced by the priorities of funding agencies rather than the actual needs of the countries where the research takes place. When funder priorities do not align with local needs and context, it can lead to inefficiencies in health services and hinder the achievement of policy goals.[1] Local research priorities play a crucial role in maximizing research investments. They help direct public and private funding into strategically important areas. Through a systematic, transparent, and explicit approach, this process ensures that funded research has the potential to provide significant public health benefits.
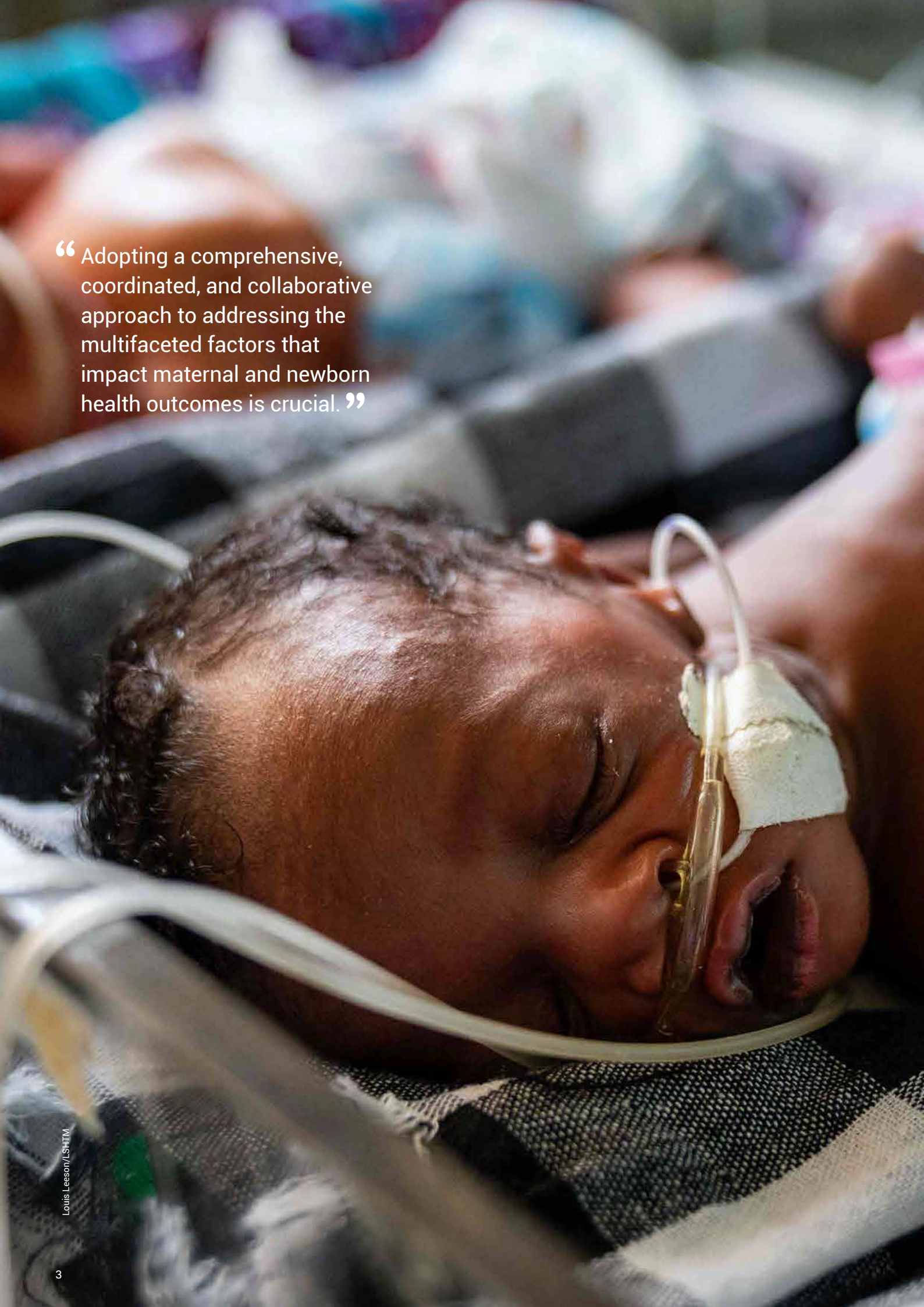
In 2019, experts on MNH in Africa identified four grand challenges and specific areas for research and discovery. The African Academy of Sciences MNH Working Group for Africa then created a comprehensive list of research priorities for MNH in Africa.

This list focuses on addressing these grand challenges, using science and research to speed up progress and develop innovations to achieve the MNH SDG targets in Africa, reduce disparities in mortality rates and align progress with the rest of the world. [2,3] The four grand challenge areas included (i) better care during pregnancy, (ii) better care at birth, (iii) better postnatal care for women and newborns, and (iv) better hospital care for sick newborns. These areas are crucial in advancing implementation and developing innovations, and scientific research plays a vital role in this process. Each grand challenge was also described under the continuum of research development, namely (1) description, (ii) discovery, (iii) development, and (iv) delivery. One key finding from the meeting was that the top continental research priorities differed at the subregional level. Africa is a diverse continent; each subregion and each member country has its unique context, including varying levels of health financing, socioeconomic categories, cultures, practices, and strategies that shape the delivery of health services. Thus, each country's research needs and concerns will differ and impact its progress towards achieving the MNH SDG targets.

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The 2021 National Health Research Agenda for The Gambia identified six priority research questions focusing on the RMNCAH program, with four specifically related to MNH. Given the high levels of maternal and neonatal mortality and the limited healthcare resources in the country, it is essential to expand the scope of these questions to include a broader range of priority research areas within the MNH domain. By expanding this list, we can better guide research efforts, funding allocation, and policy development to address the specific healthcare needs of women and newborns in The Gambia, ensuring the best possible outcomes.

> "Adopting a comprehensive, coordinated, and collaborative approach to addressing the multifaceted factors that impact maternal and newborn health outcomes is crucial."

The MoH in The Gambia is dedicated to improving MNH outcomes. Establishing well-defined research priorities ensures that research is grounded in evidence and adapted to local requirements while equitably and efficiently using limited resources. Having clear and well-communicated priorities for MNH research can foster connections and partnerships between the MoH and external agencies, such as academic institutions. These relationships can help identify areas for collaboration and facilitate connections between researchers and policymakers.

The National Stakeholders Workshop on Setting Research Priorities for Maternal and Newborn Health in The Gambia was held in Cape Point, Bakau, The Gambia, from October 24 to 25, 2023, with a diverse group of stakeholders involved with MNH in The Gambia.
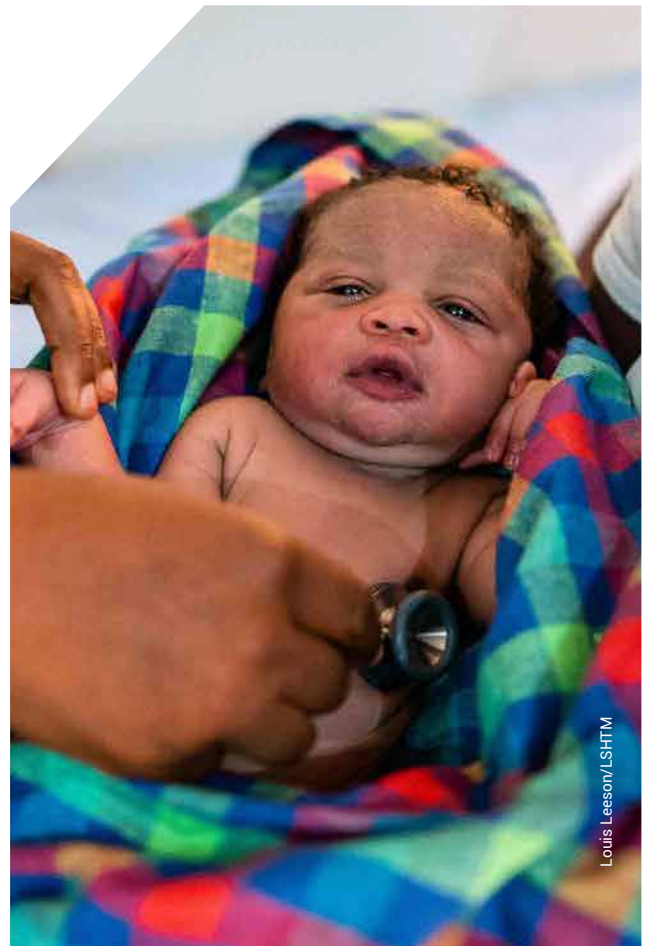
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This report presents comprehensive findings from the workshop. It begins with an overview of The Gambia's MNH landscape, followed by a prioritized list of research questions addressing real-world MNH issues in the country. These research questions are intended to guide future initiatives aimed at improving MNH outcomes.. It concludes with evidence-based recommendations to guide policymakers, healthcare providers, researchers, and other stakeholders in improving maternal and newborn health outcomes and reducing mortality rates nationwide.

Maternal and Neonatal Health in The Gambia

While maternal mortality rates in The Gambia have shown a decrease in recent years, they remain alarmingly high at 289 deaths per 100,000 live births, as highlighted in the GDHS 2019-2020 report.[4] The inadequacy of obstetric and neonatal emergency care services significantly contributes to these rates. Seven in ten maternal deaths during or after childbirth result from preventable direct obstetric complications, including pregnancy-induced hypertension and obstetric haemorrhage.[5] Additionally, the neonatal mortality rate in The Gambia remains high, with 29 deaths per 1000 live births. These statistics underscore the need for enhanced maternal and neonatal healthcare interventions and services.

One objective of the National Health Policy (2021 – 2030) is to decrease maternal, stillbirth, and neonatal mortality rates by providing equitable access to evidence-based interventions such as Basic and Comprehensive Emergency Obstetric and Newborn Care services and improve skilled birth attendance.[6] Additionally, the policy aims to increase access to contraceptive use and infertility awareness and management, report gender-based violence, reduce unmet needs, decrease adolescent pregnancy rates, provide post-abortion care, and prevent and manage sexually transmitted infections.

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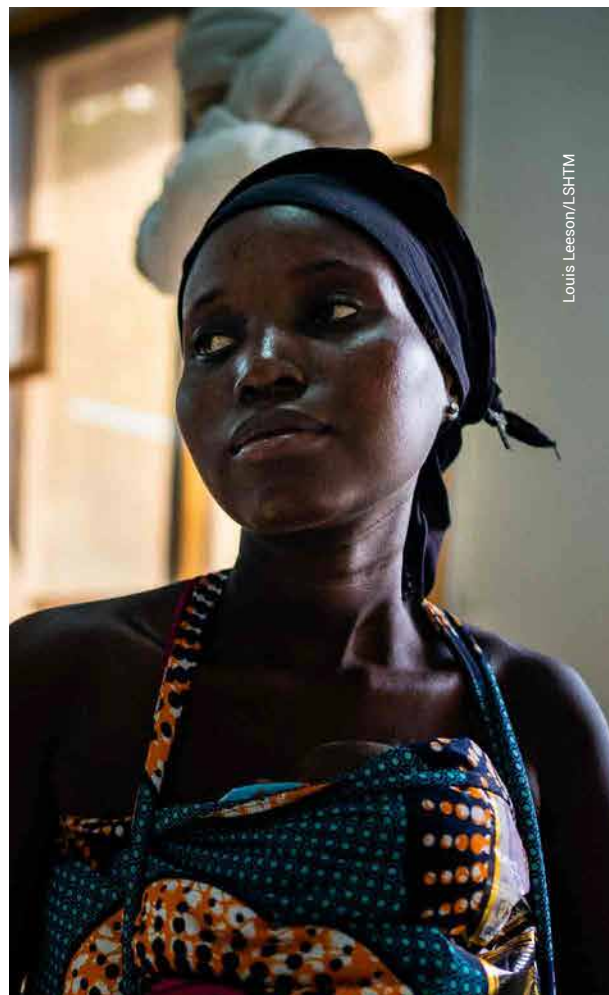
The Gambia's MNH services are managed by the Reproductive Maternal Newborn Child and Adolescent Health (RMNCAH) program under the MoH. The program's vision is to enhance the reproductive health conditions of women, neonates, children, and adolescents by advocating for and offering comprehensive, quality, affordable, and long-lasting sexual and reproductive health services and information based on human rights. Additionally, the program will seek to establish partnerships to achieve its objectives.

Research Prioritisation Workshop

The prioritisation workshop was held from Tuesday, October 24 to Wednesday, October 25, 2023, at Ocean Bay Hotel in Cape Point, The Gambia. Forty-six stakeholders participated in the workshop, including representatives from the Ministry of Health leadership and other government agencies, policymakers, donors/developmental partners, academics, researchers, nurses, doctors, and public health practitioners.

Workshop Objectives:

The workshop's aim was twofold. First, it aimed to provide policymakers and donors with insights into how various research domains and questions could contribute to enhancing MNH outcomes. Secondly, it sought to identify critical priorities for MNH research covering the four Grand Challenges areas (**Box 1**), specifically focusing on improving the generation of MNH evidence and its effective translation into policy and practice in The Gambia. The aggregated research priorities encompassed a broad spectrum of health research, covering all four domains of potential types of research questions, as detailed in **Box 2**.

Box 1: Areas of importance in MNH that remain a "Grand Challenge" for Africa

- Better care during pregnancy
- Better care at birth
- Better postnatal care for women and their newborns
- Better hospital care of sick newborns
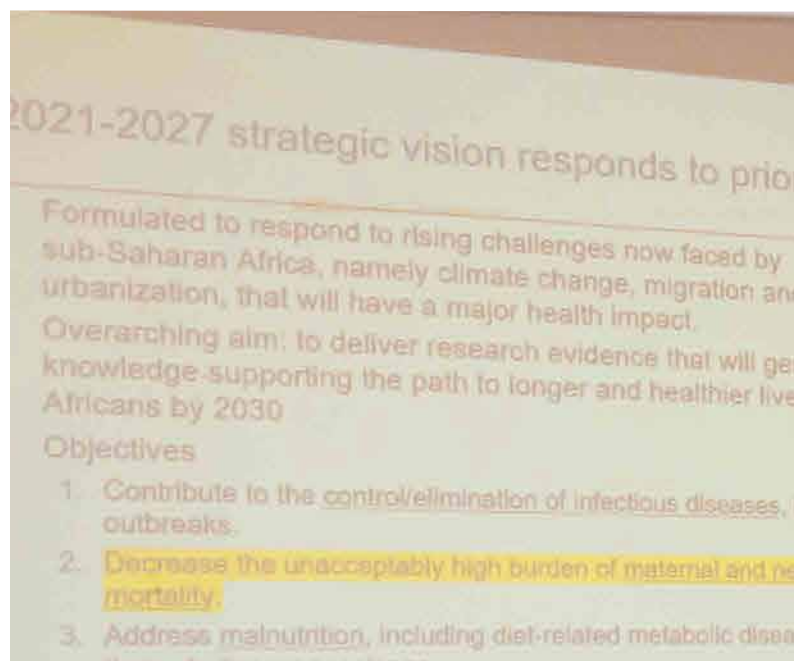
Box 2: Domains of Health Research (4D categories)

- Description — research to assess the burden or risk factors for a disease (Epidemiology)
- Discovery — research to develop (or discover) new interventions or innovations
- Development – research to improve existing interventions
- Delivery – research to optimise the health status of the population using existing interventions (e.g. implementation research, operational research, health systems, cost-effectiveness, policy)

The specific objectives were:

1. To engage stakeholders in discussions on maternal and newborn health status in The Gambia.
2. To identify gaps and challenges in maternal and newborn healthcare delivery.
3. To prioritise research areas that have the potential to improve maternal and newborn health outcomes significantly.
4. To develop recommendations for future research initiatives and policy actions.

On the first day of the workshop, Mr Sainey Sanneh, the Director of Public Health Research in the MoH, delivered the opening remarks on behalf of the Director of Health Services. He declared the meeting officially open. Professor Umberto D'Alessandro, the Director of the MRCG at LSHTM, highlighted the institution's commitment to advancing maternal and newborn health research. This was followed by a presentation from Mr Sainey Sanneh on the gaps, challenges, and opportunities for MNH research in The Gambia. He emphasised the need for evidence-based research to guide policymaking and expressed gratitude on behalf of the participants for the opportunity to contribute towards this aim. Dr Musa Marena, Program Director RMNCAH at the MoH, gave an overview of maternal and newborn health in The Gambia. He emphasised the crucial role of research in tackling maternal and neonatal mortality rates.

Workshop Methodology:

During the workshop, Dr Uduak Okomo, coordinator for MNH research at MRCG at LSHTM, provided the context and scope of the exercise (**Annex 2**). An integral aspect of the workshop was to encourage collaboration among different stakeholders who may not have had the opportunity to work together before. The stakeholders actively shared their expertise, experiences, and perspectives on maternal and newborn health issues, leading to a productive discussion on research priorities. The workshop employed a participatory approach encompassing plenary sessions, group discussions, and interactive sessions to encourage meaningful engagement and exchanging ideas.

An adapted Child Health and Nutrition Research Initiative (CHNRI)[6] approach was used for the research prioritisation exercise. The CHNRI method was chosen for its flexibility and successful use in the 2021 African Academy of Sciences MNH Working Group for Africa exercise.[2] This method leverages the principles of the wisdom of the crowds to systematically collect and transparently score research options against pre-set criteria in a specific field.[8]

The four pre-set CHNRI criteria for the exercise were disease burden reduction, answerability, potential impact and equity, and deliverability. Stakeholders were asked to rank the criteria from one to four (with one being the most important and four being the least important). An average across each criterion was calculated and converted to a weight. **Annex 3** shows the CHNRI criteria and weights. The forty-six priority research questions from the African Academy of Sciences MNH Working Group for Africa and the four MNH-focused research priority questions from the 2021 National Health Research Agenda for The Gambia were the foundation for developing the national MNH research priority list. Through collaborative brainstorming, participants from the local context identified eleven additional research questions based on their collective expertise, bringing the total to sixty-one priority research questions. On the second day of the workshop, participants scored the research questions against each CHNRI criterion. The research priority scores, calculated as the mean score across the number of scorers for each research question, were utilised to create a ranked list of priority research questions.

Key Findings

The top priority overall was to improve the management of obstetric emergencies in local health facilities before referral to EFSTH to reduce the incidence of adverse health outcomes. The top ten research priorities overall (**Table 1**) focus on the need to improve the quality of care (#1, #3, #8), address issues of staffing for improved access to care (#2), ensure access to emergency obstetric and newborn care (#9), and enhance detection and diagnosis for better treatment outcomes (#4, #6, #7, and #8). Additionally, a focus was on optimising kangaroo mother care utilisation at the community level (#5). Eight of the top ten priorities fell under the 'delivery research' category, while the remaining were 'development' research. These priorities were aligned with the overarching goals of 'Better care during pregnancy' (#1, #2, #4, #6, #7, and #10), 'Better postnatal care for women and their newborns' (#3, #5, and #8), and 'Better care at birth' (#9).

Annex 4 lists all sixty-one ranked priority MNH research questions for The Gambia and their corresponding research priority scores.

Top 10 research priorities for maternal and newborn health in The Gambia

1 Many mothers with obstetric emergencies are referred to EFSTH, often arriving in very poor health. What can be done to improve treatment in referring health facilities before referral?

2 What are the optimal methods to attract and retain a trained health workforce?

3 Evaluate the skills of healthcare workers in neonatal resuscitation at peripheral hospitals.

4 Evaluate the impact of empowering mothers to recognise danger signs on newborn health outcomes.

5 Develop and evaluate strategies for improved utilisation of Kangaroo Mother Care (KMC) at the community level.

6 What are the prevalence and factors associated with preterm deliveries in The Gambia? Development and validation of protocols for the management of pregnant women at risk of preterm delivery in the healthcare system.

7 What factors are associated with intrauterine fetal death (Stillbirths) in The Gambia? Early identification, referral, and management of high-risk pregnancies at all levels of care.

8 How can we demonstrate the impact of the WHO postpartum haemorrhage (PPH) bundle and quality of care interventions in reducing maternal mortality from PPH and other conditions in The Gambia?

9 Assess health systems' readiness in handling emergency obstetric complications.

10 Develop strategies to improve the detection of pregnancy-induced hypertension at the primary care level.

Recommendations

The priority research questions identified in this workshop need to be shared widely with all relevant stakeholders and answered through collaborative research partnerships across multiple sectors. Research findings need to be effectively translated and implemented as soon as possible to speed up progress towards reducing maternal and newborn morbidity and mortality in The Gambia and achieving both national and international MNH SDG targets.

Based on the workshop discussions and findings, the following actions are recommended for stakeholders:

- Prioritize funding and support for research initiatives addressing the identified priority areas.
- Foster collaboration among stakeholders, including government agencies, NGOs, healthcare providers, and researchers, to facilitate knowledge sharing and the implementation of evidence-based interventions.
- Develop and implement robust monitoring and evaluation mechanisms to track progress and measure the impact of interventions on maternal and newborn health outcomes.
- Advocate for policy changes and investments in healthcare infrastructure to strengthen maternal and newborn health service delivery.

Conclusion

The workshop on setting research priorities for maternal and newborn health in The Gambia has provided valuable insights and actionable recommendations to enhance MNH outcomes. Through collaborative discussions and identifying key research questions, the workshop has laid a strong foundation for evidence-based policies and interventions poised to impact the lives of mothers and newborns positively.

The MRCG at LSHTM and the MoH are steadfast in their commitment to driving MNH research forward and implementing tangible solutions to improve healthcare outcomes and save lives throughout The Gambia. The findings and recommendations outlined in this report are anticipated to guide future research agendas, inform policy actions, and shape implementation strategies to ensure the continued health and well-being of mothers and newborns across the country.

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ANNEX 1: Workshop participants

Name	Affiliation	Organisation Type

In-person

Name	Affiliation	Organisation Type
Mr Sainey Sanneh	Directorate of Health Research, MoH	Government Ministry
Mr. Doudou Sanyang	Regional Directorate of Health, Central River Region, MoH	Government Ministry
Mr. Bolong S. Jobarteh	Regional Directorate of Health, Lower River Region, MoH	Government Ministry
Mr. Modou Lamin Fofana	Regional Directorate of Health, North Bank West Region, MoH	Government Ministry
Dr. Musa Marena	RMNCAH Program, MoH	Government Ministry
Mr. Edward . A . Mendy	Ministry of Higher Education, Research, Science & Technology	Government Ministry
Dr. Phebian Ina Grant-Sagnia	Curriculum & Research Directorate, MoBSE	Government Ministry
Mrs. Amie Kolley	UNFPA	Donor/Development Partner
Mr. Dawda Samba	UNICEF	Donor/Development Partner
Mr. Baboucarr Cham	School of Nursing & Midwifery	Academic Institution
Mrs Fatou Khan	School of Nursing & Midwifery	Academic Institution
Mrs. Fatoumata Bah	School of Nursing & Midwifery	Academic Institution
Mrs. Rachel Mendy	University of The Gambia	Academic Institution
Dr. Haddy Tunkara Bah	University of The Gambia	Academic Institution
Mrs. Ramatoulie Bah	University of The Gambia	Academic Institution
Dr. Mamady Cham	Bundung Maternal and Child Hospital	Healthcare Facility
Dr. Dado Jabbie	Bundung Maternal and Child Hospital	Healthcare Facility
Mrs. Majula. T. Kinteh	Bundung Maternal and Child Hospital	Healthcare Facility
Mrs. Amie Njie	Bundung Maternal and Child Hospital	Healthcare Facility
Prof. Vivian Muonelie	Edward Francis Small Teaching Hospital	Healthcare Facility
Prof. Augusta Eneh	Edward Francis Small Teaching Hospital	Healthcare Facility
Dr. Lamin Makalo	Edward Francis Small Teaching Hospital	Healthcare Facility
Dr. Patrick Idoko	Edward Francis Small Teaching Hospital	Healthcare Facility
Dr. Abdoulie Keita	Edward Francis Small Teaching Hospital	Healthcare Facility
Ms. Alero Ogbebor	MRC Unit The Gambia at LSTHM	Research Organisation
Mr. Muhammad Jobe	MRC Unit The Gambia at LSTHM	Research Organisation
Prof. Andrew Prentice	MRC Unit The Gambia at LSTHM	Research Organisation
Dr. Mam Nabou Leigh	MRC Unit The Gambia at LSTHM	Research Organisation
Mrs. Oluwatosin Nkereuwem	MRC Unit The Gambia at LSTHM	Research Organisation
Dr. Oghenebrume Wariri	MRC Unit The Gambia at LSTHM	Research Organisation
Dr. Uduak Okomo	MRC Unit The Gambia at LSTHM	Research Organisation
Mr. Alhassan Drammeh	MRC Unit The Gambia at LSTHM	Research Organisation
Dr. Momodou Jasseh	MRC Unit The Gambia at LSTHM	Research Organisation
Prof. Umberto D' Alessandro	MRC Unit The Gambia at LSTHM	Research Organisation
Ms. Fatoumata. S. Jawara	MRC Unit The Gambia at LSTHM	Research Organisation
Dr. Bully Camara	MRC Unit The Gambia at LSTHM	Research Organisation
Mr. James Owolabi	MRC Unit The Gambia at LSTHM	Research Organisation

Online

Name	Affiliation	Organisation Type
Dr Ana Bonell	MRC Unit The Gambia at LSTHM	Research Organisation
Dr Emmanuel Okoh	MRC Unit The Gambia at LSTHM	Research Organisation
Dr Hawanatu Jah	MRC Unit The Gambia at LSTHM	Research Organisation
Prof. Anna Roca	MRC Unit The Gambia at LSTHM	Research Organisation
Prof. Beate Kampmann	MRC Unit The Gambia at LSTHM	Research Organisation
Dr Helen Brotherton	MRC Unit The Gambia at LSTHM	Research Organisation
Dr. Aduragbemi Banke-Thomas	LSHTM	Academic Institution
Prof. Veronique Filippi	LSHTM	Academic Institution

ANNEX 2: Context of The National Research Priority Setting Exercise in Maternal and Newborn Health

Purpose	To identify research priorities in maternal and newborn health (morbidity, mortality, and disability) in The Gambia using a modified CHNRI exercise.
Target Population	Women of reproductive age (15 – 49 years) including pregnant, and lactating women; newborns (0 - 28 days).
Geography	Priorities at all health administrative regions and levels in The Gambia.
Main areas of research focus	Areas of importance in MNH that remain a grand challenge for Africa:[2] • Better health during pregnancy. • Better care at birth. • Better post-birth care for women and their newborns. • Better hospital care of sick newborns.
Domains of VHealth Research	Possible types of research questions to be considered:[3] • Description – Research (epidemiology) to assess the burden of disease or risk factors of the problem (e.g., disease). • Discovery – Research to develop (or discover) new interventions or innovations. • Development – research to improve upon existing interventions. • Delivery – Research to optimise the health status of the population using existing interventions (e.g., operational research, cost-effectiveness, policy, health systems).
Time frame	For the next seven years (2024 – 2030) with the aim to accelerate national progress towards achieving the SDG targets by 2030.
Stakeholder Groups	Doctors, Nurses, Allied Healthcare professionals; Policy makers; Academics/Researchers; Research institutions; Industry; Advocacy groups; Donors/Developmental Partners; Research funding agencies (e.g. government agencies, private organisations, public-private partnerships, international and regional organisations).
Translational and implementation context	• Public and private health systems of The Gambia and their existing as well as future programs. • National and international institutions and organisations funding research. • Research environment in academic and research institutions.

ANNEX 3: Description of CHNRI criteria and weights

Criterion	Sub-Question	Weight
Disease burden reduction	i. Are the results of the research likely to reduce the burden of maternal or neonatal mortality? ii. Are the results of the research likely to reduce the burden of maternal or neonatal morbidity? iii. Are the results of the research likely to reduce the burden of maternal or neonatal disability?	0.69
Answerability	i. Is the research question well-framed, with well-defined endpoints? ii. Is it likely that, in the context of interest, there will be sufficient capacity to carry out this research? iii. Do you think the research could obtain ethical approval without major concerns?	1.39
Potential Impact and Equity	i. Will the results of this research fill an important knowledge gap and result in a genuine, innovative improvement over existing business-as-usual? ii. Are the results from this research likely to shape future planning and implementation? iii. Does this research impact the lives of those most vulnerable (e.g. those in lower wealth quintiles, those who are most marginalized, or those in hard-to-reach areas)?	0.89
Deliverability	i. Taking into account the level of difficulty with delivery of the potential intervention or delivery strategy (for example, need for change of attitudes and beliefs, supervision, transport infrastructure), would you say that this intervention or delivery strategy will be deliverable and scalable within the context of interest? ii. Taking into account the resources available to implement the intervention, would you say that the intervention or delivery strategy would be affordable and cost effective within the context of interest? iii. Would government capacity and partnership be essential to ensure that the intervention or delivery strategy would be sustainable?	1.0

Calculating Criterion Weight

Stakeholders were asked to rank the criteria from 1 to 4 (with 1 being the most important and 4 being the least important). An average across each criterion was calculated and converted to a weight using the following formula (demonstrated for criterion 1):

$$\text{weight(criterion1)} = \left[\left(\frac{\sum \text{scores criterion 1}}{n\text{criterion 1}}\right) \div 10\right] \times 4$$

The division by 10 in the formula is a scaling factor. It ensures that the weights fall within a specific range.

"Improving maternal and newborn health is a reflection of The Gambian Ministry of Health's dedication to the well-being of families and communities."

ANNEX 4: Ranked list of MNH priority research questions for The Gambia

Rank	Research Question	4D Category	Grand Challenges Category	Criteria and within criteria RPS				Research Priority Score (RPS)
				Disease Burden	Answerability	Impact & Equity	Deliverability	
1.	Many mothers with obstetric emergencies are referred to EFSTH, often arriving in very poor health. What can be done to improve treatment in referring health facilities before referral?	Delivery	Better care during pregnancy	0.68	1.30	0.85	0.86	0.92
2.	What are the optimal methods to attract and retain a trained health workforce?	Delivery	Better care during pregnancy	0.62	1.27	0.84	0.85	0.90
3.	Evaluate the skills of healthcare workers in neonatal resuscitation at peripheral hospitals	Delivery	Better postnatal care for women and their newborns	0.67	1.28	0.80	0.82	0.89
4.	Evaluate the impact of empowering mothers to recognise danger signs on newborn health outcomes	Delivery	Better care during pregnancy	0.67	1.24	0.83	0.80	0.88
5.	Develop and evaluate strategies for improved utilisation of Kangaroo Mother Care (KMC) at the community level	Delivery	Better postnatal care for women and their newborns	0.62	1.22	0.80	0.85	0.87
6.	What are the prevalence and factors associated with preterm deliveries in The Gambia? Development and validation of protocols for the management of pregnant women at risk of preterm delivery in the healthcare system	Development	Better care during pregnancy	0.61	1.27	0.78	0.82	0.87
7.	What factors are associated with intrauterine fetal death (Stillbirths) in The Gambia? Early identification, referral, and management of high-risk pregnancies at all levels of care	Delivery	Better care during pregnancy	0.59	1.20	0.82	0.82	0.86
8.	How can we demonstrate the impact of the WHO postpartum haemorrhage (PPH) bundle and quality of care interventions in reducing maternal mortality from PPH and other conditions in The Gambia?	Delivery	Better postnatal care for women and their newborns	0.65	1.14	0.82	0.81	0.85
9.	Assess health systems' readiness in handling emergency obstetric complications	Delivery	Better care at birth	0.64	1.24	0.77	0.74	0.85
10.	Develop strategies to improve the detection of pregnancy-induced hypertension at the primary care level	Development	Better care during pregnancy	0.65	1.18	0.78	0.77	0.84
11.	Develop and evaluate the impact of strategies to educate women and communities about the importance of prenatal and antenatal care, family planning and recognition of danger signs during pregnancy and childbirth	Development	Better care during pregnancy	0.64	1.19	0.79	0.76	0.84
12.	What are the optimal methods to attract and retain skilled birth attendants in remote, rural areas?	Delivery	Better care at birth	0.65	1.16	0.78	0.78	0.88

Rank	Research Question	4D Category	Grand Challenges Category	Criteria and within criteria RPS				Research Priority Score (RPS)
				Disease Burden	Answerability	Impact & Equity	Deliverability	
13.	What are the key factors and strategies for effectively managing eclampsia in The Gambia?	Delivery	Better care during pregancy	0.66	1.14	0.78	0.78	0.84
14.	Identify the most influential factors in providing quality intrapartum care and test methods to improve access and quality of Emergency Obstetric and Newborn Care (EmONC) services [e.g. risk prediction, identification, and communication; prompt referral; service availability (including safe transportation, skilled personnel, capacity, logistic, blood storage, supplies, and infrastructure); accountability; innovations]	Delivery	Better care at birth	0.65	1.14	0.08	0.77	0.84
15.	What can be done to increase the uptake of postpartum contraception?	Delivery	Better postnatal care for women and their newborns	0.58	1.19	0.79	0.79	0.84
16.	Evaluate the quality of management for post-partum haemorrhage available; implementation research for effective delivery of evidence-based care protocols/algorithms for prevention and management of post-partum haemorrhage at different levels of care	Description	Better care at birth	0.62	1.12	0.80	0.74	0.82
17.	In The Gambia, most deaths occur in the postpartum period, yet uptake of postpartum care is low. What can be done to look after these mothers and their babies? Is there room for telemedicine?	Delivery	Better postnatal care for women and their newborns	0.65	1.07	0.83	0.72	0.82
18.	Determine the effectiveness of strategies to improve the timely second stage of delivery on pregnancy outcomes (e.g. postpartum haemorrhage, birth asphyxia, obstetric fistula)	Development	Better care at birth	0.64	1.14	0.74	0.72	0.81
19.	Develop methods to enhance the quality of care for sick newborns through early identification and appropriate therapeutic measures for the management of neonatal sepsis	Delivery	Better hospital care for sick newborns	0.66	1.10	0.75	0.71	0.81
20.	Determine which health facility factors are the most important contributors to poor quality of care	Description	Better care at birth	0.57	1.16	0.76	0.73	0.80
21.	Determine the most cost-effective way to identify pregnant mothers at risk of adverse pregnancy outcomes during their antenatal care for better care during pregnancy (prevention) and the intrapartum period (labour management)	Delivery	Better care during pregnancy	0.61	1.10	0.74	0.77	0.80
22.	Assess uptake of best practices in hospital care of preterm infants, evaluate coverage of Kangaroo Mother Care (KMC) and determine the barriers and facilitators for its uptake	Delivery	Better hospital care for sick newborns	0.61	1.13	0.72	0.74	0.80

Rank	Research Question	4D Category	Grand Challenges Category	Criteria and within criteria RPS				Research Priority Score (RPS)
				Disease Burden	Answerability	Impact & Equity	Deliverability	
23.	Evaluate facilitators and barriers to health care access for pregnant women in accessing care, including attendance of the minimum number of antenatal care (ANC) visits, availability of skilled health personnel at facilities, etc, with a focus on rural and vulnerable women; develop strategies to mitigate any barriers found	Delivery	Better care during pregnancy	0.64	1.08	0.77	0.71	0.80
24.	Conduct health systems research that includes institutional audits of newborn illness, near misses, and deaths, with an emphasis on disseminating and implementing audit findings within the hospital and community within this research, test different health systems strengthening options and focus on improving care; link sick newborn conditions to developmental outcomes	Delivery	Better care during pregnancy	0.62	1.07	0.79	0.70	0.80
25.	Conduct large-scale implementation research of interventions that have been demonstrated to improve the quality of care during labour	Delivery	Better care at birth	0.64	1.07	0.75	0.70	0.79
26.	Utilisation of community engagement/women's groups to support care in the community/home of vulnerable babies (e.g. ex-preterm, low birth weight, infants with high risk of neuro-disability)	Development	Better postnatal care for women and their newborns	0.54	1.10	0.73	0.77	0.78
27.	Assess uptake of best practices to reduce neonatal sepsis (including a rational use of prophylactic antibiotics clean birth environment) in the prevention of neonatal sepsis	Delivery	Better hospital care for sick newborns	0.61	1.10	0.73	0.67	0.78
28.	Determine the most feasible method of delivery of package for postpartum care at the community level and measure its impact	Delivery	Better postnatal care for women and their newborns	0.58	1.03	0.75	0.75	0.78
29.	Develop strategies for the use of routine health data to inform decision-making in antenatal service delivery	Delivery	Better care during pregnancy	0.54	1.07	0.71	0.77	0.77
30.	Assess the impact of sustainable capacity building for primary care health workers on critical care and paediatric emergencies	Development	Better care during pregnancy	0.62	1.04	0.74	0.68	0.77
31.	Evaluate the immediate management of the newborn across different facilities. Improve the implementation (service availability, quality, programme management and referral chain robustness) of neonatal programmes and services	Delivery	Better postnatal care for women and their newborns	0.56	1.08	0.72	0.71	0.77
32.	Develop and institute a screening and early treatment programme for maternal bacterial infections in the third trimester and evaluate the impact on prevention of neonatal sepsis	Development	Better postnatal care for women and their newborns	0.61	1.10	0.69	0.66	0.77

Rank	Research Question	4D Category	Grand Challenges Category	Criteria and within criteria RPS				Research Priority Score (RPS)
				Disease Burden	Answerability	Impact & Equity	Deliverability	
33.	Design and test innovative solutions to improve access to emergency transport in the community (e.g. ride share, local transport)	Delivery	Better care at birth	0.58	1.08	070	0.68	0.76
34.	Develop strategies to mitigate hypoxic ischaemic encephalopathy (birth asphyxia) and evaluate its effects on indicators for long-term developmental outcomes	Development	Better care at birth	0.63	1.01	0.73	0.68	0.76
35.	Develop and evaluate the impact of strategies to improve the uptake of essential newborn care on neonatal outcomes	Delivery	Better hospital care for sick newborns	0.58	1.01	0.72	0.69	0.75
36.	Evaluate the impact of improving maternal nutrition, including micronutrients during pregnancy and its impact on intra-uterine growth development and other neonatal outcomes using large-scale implementation studies	Development	Better care during pregnancy	0.56	1.09	0.66	0.69	0.75
37.	Develop improved algorithms to risk stratify women in antenatal care to facilitate earlier referral to higher levels of care	Discovery	Better care during pregnancy	0.58	1.03	0.68	0.70	0.75
38.	Evaluate the impact of warm neonatal transport and the use of bubble continuous positive airway pressure- CPAP- in the delivery room on neonatal morbidity and mortality	Development	Better care at birth	0.64	1.00	0.73	0.63	0.75
39.	Map the adequacy, availability of, barriers to, and adherence to standard of care guidelines that cover the most common causes of maternal morbidity and mortality, including during the peripartum period. Develop and validate algorithms for prevention, early detection and management of severe acute maternal morbidities and near-miss events	Description	Better care at birth	0.55	1.07	0.69	0.68	0.75
40.	Determine which health system issues are more important in impacting timely intervention for women in labour	Delivery	Better care at birth	0.57	1.04	0.72	0.65	0.75
41.	Identify the most effective and affordable tools to be deployed in the lowest level of health facilities to provide lifesaving care to sick neonates in African countries (e.g. availability of oxygen, functional newborn units, etc)	Development	Better hospital care for sick newborns	0.59	1.03	0.70	0.64	0.74
42.	What is the impact of early neonatal diagnosis of HIV infection in preventing neonatal mortality in The Gambia?	Delivery	Better postnatal care for women and their newborns	0.51	1.03	0.69	0.74	0.74

Rank	Research Question	4D Category	Grand Challenges Category	Disease Burden	Answerability	Impact & Equity	Deliverability	Research Priority Score (RPS)
43.	Design and test new algorithms and point-of-care diagnostic tests for sepsis (including postnatal sepsis) for mothers and babies, and care for sick newborns and children in the face of emergencies and epidemics	Discovery	Better care at birth	0.63	1.95	0.72	0.66	0.74
44.	Determine the effects of underlying infections in pregnancy on pregnancy outcomes (e.g. abortions, anaemia, preterm labour) and neonatal outcomes (asphyxia, intra-uterine growth restriction- IUGR, prematurity, sepsis, mortality)	Description	Better care during pregnancy	0.58	1.04	0.70	0.63	0.74
45.	Evaluate the use of nasal continuous positive airway pressure- CPAP- in the management of respiratory distress in newborns in low-resource settings	Development	Better care at birth	0.60	1.96	0.73	0.67	0.74
46.	Determine the impact of 'skilling drills' on obstetricians, general practitioners, and midwives in handling obstetric emergencies promptly through simulations and drills	Development	Better care at birth	0.59	1.05	0.60	0.69	0.73
47.	Determine the most effective interventions, especially for low-income families, to improve nutrition during pregnancy and promote the growth and development of the child over the first three years of life	Development	Better postnatal care for women and their newborns	0.54	1.00	0.73	0.63	0.72
48.	Develop new strategies, including biomarkers and point-of-care screening tools for comprehensive antenatal care and early detection of high-risk pregnancies (e.g. pre-eclampsia, prematurity, infections), and use the screening results to optimise preventive measures	Discovery	Better care during pregnancy	0.61	1.00	0.68	0.59	0.72
49.	Births in The Gambia show a seasonal distribution, resulting in severe strains on maternity services during the heavy season. What is driving this seasonal variation? What can be done to flatten the curve at the political, policy and healthcare levels?	Description	Better care during pregnancy	0.47	1.07	0.63	0.68	0.71
50.	Conduct large-scale operational research to improve breastfeeding, including improvement of the 10 steps on the Baby Friendly Hospital Initiative (BFHIA) and support, establishment of a breast milk bank, and development of strategies to increase promotion of, and support for, breastfeeding within half an hour after birth	Delivery	Better postnatal care for women and their newborns	0.51	1.01	0.66	0.66	0.71
51.	Evaluate the effectiveness of task shifting and its impact on the quality of intrapartum care	Delivery	Better care at birth	0.56	0.94	0.67	0.68	0.71

Rank	Research Question	4D Category	Grand Challenges Category	Criteria and within criteria RPS				Research Priority Score (RPS)
				Disease Burden	Answerability	Impact & Equity	Deliverability	
52.	Develop and test innovative and affordable means of monitoring labour progress, including when augmenting contractions	Development	Better care at birth	0.57	1.01	0.65	0.59	0.70
53.	How do we make Pregnancy Tests easier and more accessible to women in the Gambia?	Delivery	Better postnatal care for women and their newborns	0.43	1.03	0.63	0.71	0.70
54.	Develop strategies to provide immediate postnatal care for women (e.g. using traditional birth attendants-TBAs, community health workers) and evaluate their feasibility, acceptability, and effectiveness. Measure the impact on population-level health outcomes and target women who deliver in peripheral health centres for intervention	Delivery	Better postnatal care for women and their newborns	0.46	0.98	0.68	0.66	0.70
55.	Evaluate the evidence for benefits, barriers, and facilitators of delayed cord clamping and measure the extent to which it is being done in low-resource and rural facilities	Development	Better care at birth	0.48	0.89	0.62	0.73	0.68
56.	Determine the best models to scale and evaluate the impact of proven interventions	Delivery	Better care during pregnancy	0.52	0.86	0.68	0.59	0.66
57.	Development and validation of affordable diagnostic tools (e.g. low cost ultrasound to detect pregnancy-related conditions at the primary health care level), and monitor maternal and newborn care outcomes. For example, the symphysis fundus (SF) measurement is highly inadequate to differentiate between small but healthy babies and growth-restricted foetuses	Discovery	Better care during pregnancy	0.54	0.85	0.67	0.60	0.66
58.	Develop innovative solutions for scaling up recommended packages when there is little or no infrastructure along the continuum of care	Delivery	Better postnatal care for women and their newborns	0.48	0.87	0.65	0.61	0.65
59.	How can we evaluate the effectiveness and safety of aspirin to prevent venous thromboembolic (VTE) disease in postpartum mothers at high risk of VTE in The Gambia?	Delivery	Better postnatal care for women and their newborns	0.53	0.88	0.57	0.62	0.65
60.	Develop strategies to introduce point-of-care testing for maternal malnutrition and introduce improved dietary intake of macro nutrition and iron supplements for such malnourished mothers and test its impact on maternal and neonatal well-being, with sub-analysis in low-resource settings	Delivery	Better care during pregnancy	0.53	0.85	0.62	0.55	0.64
61.	Evaluate the effectiveness and cost-effectiveness of, and constraints to, administering antenatal steroids on neonatal prognosis in district and peripheral hospitals	Delivery	Better hospital care for sick newborns	0.50	0.80	0.64	0.58	0.63

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