

NEWSLETTER

A research partnership on relationships between technology adoption, workforce deficits and quality of care



A photo of an infant on treatment with phototherapy machine (Courtesy of NEST 360)

Overview of HIGH-Q Programme:

The Harnessing Innovation in Global Health for Quality Care (HIGH-Q) Programme has a specific focus on neonatal care in low and middle-income countries' hospitals and explores the inter-relationships between technology adoption, workforce deficits and quality of care. The programme takes a broad view of quality focusing especially on the effectiveness, timeliness, safety and outcomes of care together with families and staff's experiences. The Programme is addressing questions on how introducing essential technologies affects quality, whether specific interventions to increase nursing and ancillary staff numbers improve quality and technology adoption and how we might better support the delivery and integration of post-discharge care for families.

Additionally, the programme also aims to advance the careers of early to mid-career Kenyan post-doctoral scientists and to develop further scientific capacity within a multi-disciplinary team. The Programme will also directly support five African PhD student-ships and other junior researchers, including interns.

The HIGH-Q Programme will be implemented in the 8 Clinical Information Network County Hospitals sites where the **Newborn Essential Solutions and Technologies (NEST 360°) Programme** intervention has been implemented.

Programme Leads



Dr Michuki Maina



Dr Dorothy Oluoch



Prof David Gathara

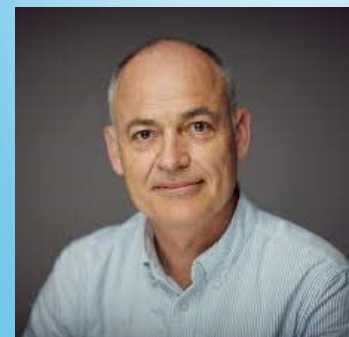
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Principal Investigators



Prof Fred Were
University of Nairobi and Kenya
Paediatrics Research Consortium



Prof Mike English
KWTRP and University of Oxford



Harnessing Innovation in Global Health for Quality
Care (HIGH-Q)

KEMRI | Wellcome Trust



HIGHLIGHTS

Three additional nurses per county recruited and deployed by the HIGH-Q Programme

As part of the **health workforce intervention on indicators of quality of newborn care in Kenyan neonatal units study**, the HIGH-Q Programme recruited 3 nurses per each of the county hospitals in Embu, Nyeri, Kiambu and Machakos. The newly recruited nurses were deployed in April 2022.



A photo of trainees being taken through a practical session on CPAP machine operation

The HIGH-Q Programme in partnership with NEST 360 trained the newly deployed nurses on the Newborn ETAT+ Course so that the nurses could be at the same level of skills as the existing and trained nurses in the NBUs of the four Hospitals. This training took place from 25-29 April 2022.



A photo of trainees being taken through a practical session on Photo-therapy Machine

Objective 1 Updates: Effects of new technologies on Set quality of care indicators

This objective is led by Dr Michuki Maina and Prof David Gathara. This objective is concerned with how introduction of new technology and additional workforce in newborn units of the selected hospitals affects the quality of care provided. There are two ongoing assessments under this objective.

Assessment 1. *To determine the effects of new technologies on a set of quality of care indicators in 14 hospitals implementing a bundle of technologies (the NEST bundle)*

This work is ongoing through regular monitoring of CIN hospital data

Assessment 2: *To determine the effects of a workforce intervention on quality of*

care as measured by a nursing care index in four hospitals

The Programme has enlisted a doctorate student, Dr Abdulazeez Imam to conduct research in the second assessment.

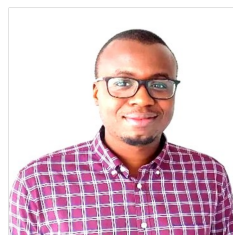


An illustration of NEST 360 medical devices intervention areas

Health workforce intervention and indicators of quality of newborn care

This research is part of Objective 1 and is led by Dr Imam. Dr Imam seeks to 1) examine the existing evidence for nurse staffing and quality of patient care and identify a set of nurse staffing and quality of care metrics, 2) To determine the effect of enhancing nurse staffing on missed nursing care measured using the nursing care index (NCI) tool in a before and after design study of four hospitals, 3) To determine the effect of enhancing nurse staffing on missed nursing care measured using the nursing care index (NCI) tool in a before and after design study at four hospitals 4) To track changes in neonatal quality indicators derived from routinely collected data across 8 NEST hospitals and explore differences between hospitals receiving additional staffing and those that do not.

The first phase of data collection began in early March in the four county hospitals of Nyeri, Embu, Kiambu and Machakos. Data collection was through direct observation of care by a data collector stationed at the NBU and through the completion of a structured checklist. This study is being supported by research officers, Messrs Vincent Kagonya and Onesmus Onyango.



Dr Abdulazeez Imam



Mr Vincent Kagonya



Mr Onesmus Onyango

Upcoming event: Introduction of Ward Clerks: January 2023

As part of the intervention study, the Programme is planning to employ and introduce two Ward Clerks at NBU per Hospital for a period of 6 months. Under the supervision of a professional nurse, the ward clerks will offer non-nursing support related to basic inpatient neonatal care aspects that are often time-consuming and not technically demanding.

Updates for Objective 2 : A process of delivering and implementing technologies and uptake factors

This objective is led by Dr Dorothy Oluoch and Prof Caroline Jones from the KEMRI Wellcome Trust. Using an ethnographic approach, this objective is exploring the perceptions and practices of families and staff in caring for sick newborns in the newborn units at the four workforce intervention hospitals and examining the effects of workforce interventions on these experiences, perceptions and practices.

Data collection in this objective is being supported by Ms Nancy Odinga and Ms Caroline Waithira, both Research Officers at the KWTRP. Data collection is through observation, informal interviews and formal interviews with Health workers and mothers as well as document review at the Machakos L5 Hospital and the Embu Teaching and referral Hospitals. The first round of data collection ended in June 2022.



Ms Nancy Odinga



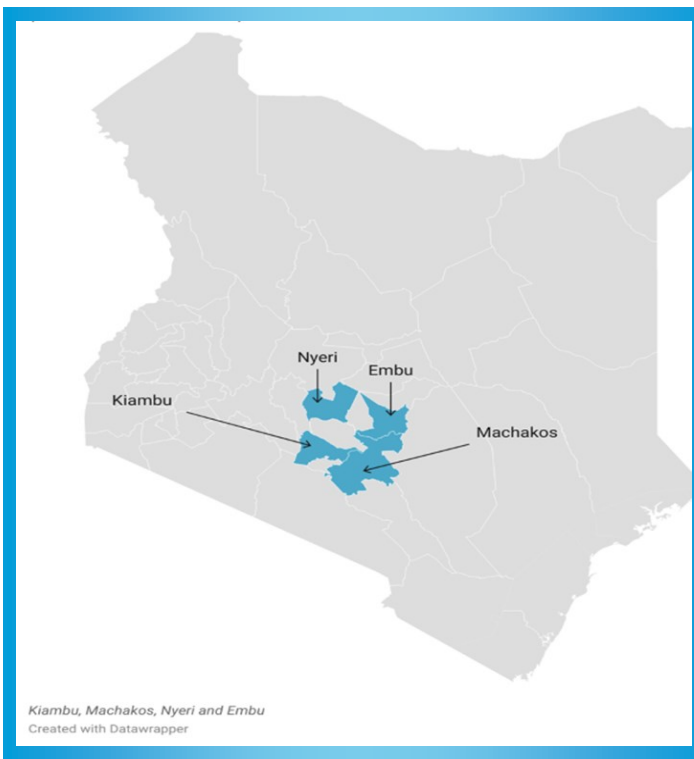
Ms Caroline Waithira



Ethnographic Research:

Ethnographers immerse themselves in the settings in which the experiences occur (in this case, the newborn units of selected hospitals) for prolonged periods of fieldwork. This approach enables the researcher to collect detailed descriptive data to describe the context and form an understanding of the practices and culture of a study group.

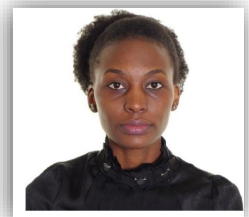
Intervention Study Sites



Technologies, communication and decision-making in Kenyan neonatal units.

Dr Gloria Ngaiza Gloria is employing a case study design to understand the role of technologies in shaping communication and decision-making in Kenyan neonatal units. She has adopted an ethnographic approach including non-participatory observations, informal and formal interviews and a review of documents to collect data at the New Born Unit.

Dr Ngaiza has adopted Kiambu and Nyeri County Referral Hospitals as sites for the study. Data collection occurred from January to April 2022 as part of the pre-introduction of the additional workforce. She will do a second round of data collection in October for the period after the introduction of the additional workforce.



Dr Gloria Ngaiza

Updates for Objective 3 : The process of post-discharge neonatal care and identify how innovations can improve pathways to care

This Objective is led by Drs Chrysanthi Papoutsi and Sebastian Fuller (with HIGH-Q colleagues) and focuses on the use of qualitative and human-centred approaches to co-design high-quality post-discharge care for at-risk newborns and their family carers. Under this objective, we have two researchers pursuing studies as highlighted below.

Interventions to improve continuity of care and deliver high-quality post-discharge care for at-risk newborns in Kenya



Ms Gulraj Grewal

This study led by Ms Gulraj Grewal and focusses on interventions to improve continuity of care and deliver high-quality post-discharge care for at-risk newborns in Kenya.

Ms Grewal study seeks to answer the following questions:

1. What transferable insights can we draw on to improve continuity of post-discharge care for at-risk newborns in resource-constrained settings?
2. What are current post-discharge care pathways for sick newborns in urban and rural settings in Kenya?
3. What key features does an innovation aiming to improve the quality of post-discharge care for sick neonates require for uptake and use by mothers or healthcare workers in rural and urban settings in Kenya?

Ms Grewal has completed round one data collection through non-participant observation at Kiambu & Nyeri County Hospitals. She has also conducted formal interviews with health workers and home-based interviews with mothers.

During the CIN Neonatal meeting on 5 and 6 May 2022, Ms Grewal held a breakaway session on process mapping and post-discharge care with NBU in charges of the four county hospitals.

Later, Ms Grewal will also hold Human-Centred Design (HCD) workshops and analyze in-depth interviews and focus group discussions.

Investigating Information Needs, Tools and Practices in Postnatal Care for New-born in Kenya

This study is led by Ms Asma Rababeh. The main objective of the study is to examine the process of post-discharge neonatal care and identify how improved care pathways and information tools might meet the needs of health workers and families to deliver higher quality care.



Ms Asma Rababeh

This study is looking at the following questions:

1. What are the key information needs for mothers/families looking after (vulnerable) babies after hospital discharge in LMICs?
2. What are the key information challenges healthcare workers face when looking after vulnerable babies in the community?
3. What are the main information tools (booklet-type) that have been used to support information in post-natal care?
4. To what extent do these practices and tools fulfil information needs, and what are the challenges to their implementation and sustained use?

Ms Rababeh has completed round one of the data collection through facility non-participatory observations and interviews with health workers at Kiambu County Hospital. The researcher has also conducted home-based interviews with mothers and focus groups discussion with mothers.

“Human-centred design is a framework that considers human perspectives throughout the design process.”

-Francesca Sciandra

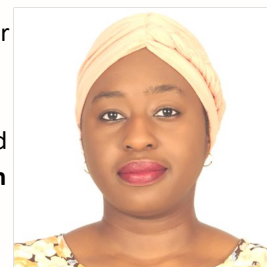
Updates for Objective 4: The governance process of introducing technologies and service delivery innovations

This objective is led by Prof Fred Were from University of Nairobi and Keprecon together with Prof Sassy Molyneux and Dr Sebastian Fuller both from the University of Oxford.

Dr Naima Nasir- a researcher attached to this objective -is leading a study titled **“Governance arrangements for health technology interventions and innovations in LMICs”**. Dr Nasir’s objectives are to evaluate:

1. Governance frameworks, processes and experiences in Sub-Saharan Africa
2. Understand national and hospital-level governance policies and processes in Kenya, including how they are implemented and experienced in Kenya for a range of medical devices
- 3 Co-develop with stakeholders recommendations for locally appropriate governance of medical devices in Kenya, and consider the relevance for other in Sub Saharan African countries

Dr Nasir has completed round one data collection involving key informant interviews with high-level stakeholder drawn from the national and county levels. At the national level, Dr Nasir has interviewed members of health technology regulatory bodies; device manufacturers; international organisations, and county executives. Naima has also interviewed hospital/NBU managers and biomedical engineers at the hospital sites.



Assessing the use of continuous positive airway pressure (CPAP) in neonatal units across the CIN hospitals

CPAP session during the CIN Meeting May 2022

The KWTRP organised a two-day CIN neonatal meeting with Nurses, Health record and Information officers and CIN Neonatal clerks on 5-6 May 2022.

One of the breakaway sessions was dedicated to discussing the use of CPAP in the CIN hospitals. The meeting was to draw lessons from the hospitals on the experiences of using CPAP. Other discussions included how onsite training is conducted, the interactions between the nurses, clinicians and engineers at the hospital.

The session presented an opportunity to discuss how the use of CPAP can be sustained beyond the current projects that are funding the use of essential neonatal technologies.



Photo: CIN Neonatal meeting in progress

As part of the HIGH Q project, we will be assessing the use of continuous positive airway pressure (CPAP) in neonatal units across the CIN hospitals. This project aims to understand the criteria used to start babies on CPAP, and also learn more about the care provided for babies on CPAP. We will also pick lessons from the clinicians on the successes and challenges of providing CPAP in neonatal units.



KWTRP

The KEMRI|Wellcome Trust Research Programme is a world renowned health research unit of excellence. The programme was formed in 1989 when the Kenya Medical Research Institute formed a partnership with the Wellcome Trust and the University of Oxford. The Programme has over the last 26 years grown from a small group of 12 to a state of the art facility hosting over 100 research scientists and 700 support staff working across Kenya, Uganda and the region. We have over the years excelled in use of novel ideas working with local community's to achieve better health for Africa while also developing African scientific leaders.

Evaluation of Water, Sanitation and Hygiene in Select Neonatal Units in Kenyan Public Hospitals



This qualitative study is led by Drs Edna Mutua and Michuki Maina. Its broad objective is to assess the status of water, sanitation, and hygiene (WASH) in four CIN hospitals' neonatal units. The study seeks to answer the following research questions:

1. How are WASH roles distributed amongst health care workers and caregivers?
2. What is the availability of WASH supplies and infrastructure in neonatal units?
3. What are the current WASH practices in neonatal units and their implications on infection prevention and control?

The study's data collection methods comprise of non-participant observation, interviews with healthcare workers and focus group discussions (FGDs) with caregivers. Observations and interviews were conducted from January-May 2022 while FGDs with caregivers will be conducted before August 2022.



"Improving water supply, hygiene, sanitation in health care facilities is linked reductions in hospital-associated infections, antimicrobial resistance, better management and control of disease outbreaks, improved staff morale and an overall reduction in health care costs."

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