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CENTRE FOR MATERNAL  
AND NEWBORN HEALTH

# Centre for Maternal and Newborn Health Annual Report 2017







“ Every year, over 300,000 women die due to complications during pregnancy and childbirth, 2.6 million babies are stillborn, and 2.7 million newborns die. Most of these deaths can be prevented if effective, good quality care is available. At CMNH, we are passionate about ending these preventable deaths and improving the health of mothers and babies. ”

- Professor Nynke van den Broek, Head of CMNH





# The Centre for Maternal and Newborn Health

CMNH conducts **implementation research, to discover and share what why and how interventions work in 'real life' settings**, to reduce maternal and neonatal mortality and stillbirths, and, to improve health and healthcare delivery. We work to strengthen existing data collection methods, the use of data and develop new indicators and frameworks to evaluate the effectiveness of single or complex interventions.

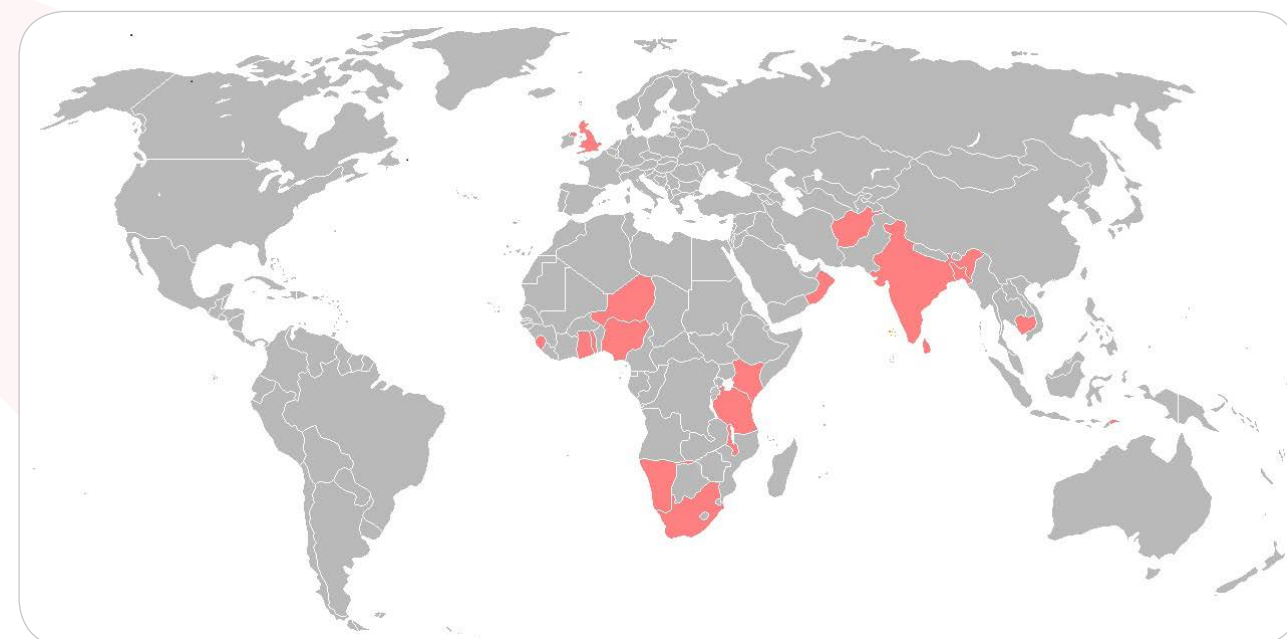
## New Strategic Focus

During 2012-2017, CMNH focused on healthcare interventions required at the time of birth when most maternal deaths, stillbirths and early neonatal deaths occur **(the 'triple return')**. Whilst continuing to maintain this core focus, CMNH has developed a new strategic plan for 2018-2023 which will;

- **Broaden the scope of the CMNH portfolio** such that this is inclusive of the continuum of care for mother and baby throughout pregnancy, childbirth and in the postnatal period with a **renewed focus on antenatal and postnatal care**
- Continue to link the maternal and newborn health agenda whilst **expanding the portfolio in neonatal health and healthcare delivery**
- Maintain a strong focus on **reducing preventable deaths**, expand the CMNH portfolio further to include research and programmes that will **improve the health of mothers and babies**, in line with the new international strategy that seeks to **ensure mothers and babies 'survive and thrive'**.

## Portfolio Overview

In 2017, CMNH completed and has ongoing programmes in 17 countries across sub-Saharan Africa and Southeast Asia with grants from 11 donors totalling £16.5m under management. The Centre has expanded its reach geographically, starting new programmes in Francophone countries in West Africa (Togo and Niger), as well as commencing a multi-year programme in Afghanistan.



# Implementation Research – What works, why and how?

## A new focus on Antenatal and Postnatal Care

Antenatal care is a major success story. Demand has increased and continues to do so in most parts of the world. Globally, 83% of women attend for ANC on at least one occasion during pregnancy and 64% attend four times or more. In many cases, this constitutes a series of 'missed opportunities'.

In line with the **Global Fund** strategy to **fight AIDS, tuberculosis and malaria**, strengthen health systems and **improve the health of mothers and children**, CMNH has been awarded new grants to design, implement and evaluate innovative approaches to address the identified health needs of mothers and babies during and after pregnancy with integration of care across the three main diseases. In up to six countries, the **availability and content of care** will be strengthened using a health systems approach through support to healthcare providers and strengthening of the enabling environment. Quality of care will be improved by the adoption of standards-based audit. Implementation research will be conducted to generate new evidence for the effectiveness of this approach.

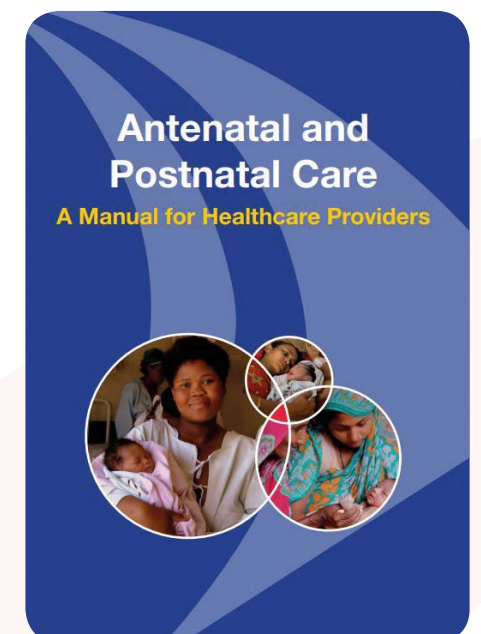
In 2017, CMNH developed a **new 5-day competency-based training package in ANC and PNC** for healthcare providers working in low- and middle-income countries to improve the content and quality of integrated ANC and PNC for mother and baby. The first training workshops were held in Ghana and Togo.

## Improving Maternal Health

CMNH developed a **new tool to assess maternal morbidity** and has conducted a multi-country cross-sectional study to assess maternal morbidity in 11,454 women, attending for routine ANC or PNC at healthcare facilities in India, Pakistan, Kenya and Malawi. This research provides standardised baseline measurements of maternal morbidity that have been calculated using clear and concise methodology, thereby enabling comparisons between different settings and countries. Additionally, qualitative studies on women's understanding of health and health needs were conducted in India and Pakistan.



Image Credit: © 2013 Ismail Ferdous, Bangladesh, Courtesy of Photoshare





- Almost 3 out of 4 women had >1 symptoms (73.5%), abnormalities on clinical examination (71.3%) or laboratory investigation (73.5%).
- In total, 9.0% of women had an identified infectious disease (HIV, malaria, syphilis or chest infection) and 23.1% had signs of early infection with an identifiable source in 43%.
- Overall, 47.9% of women were anaemic, 11.5% had other medical or obstetric conditions, 25.1% psychological and 36.6% social morbidity (domestic violence and/or substance misuse).
- Morbidity was not limited to a core at risk group; only 1.2% had a combination of all four morbidities.
- The likelihood of morbidity decreased with increased education level.

## Skilled Birth Attendance

CMNH and the Foundation for Research in Community Health (FRCH) are currently working together on a programme to improve the quality of care provided by **Auxiliary Nurse Midwives (ANMs)** in Maharashtra State, India. In 2017, CMNH conducted a study to explore factors that enable or hinder ANMs in their practice, to understand their scope of work, and, to identify how this cadre can be supported in future to make an effective contribution to the delivery of health care for women and children at the primary care level in India. In remote areas, ANMs do not have the necessary skills - mostly due to lack of regular, refresher training to update their knowledge and skills. Up to 400 ANMs will receive training and supervision under this new programme.

In both sub-Saharan Africa and Southeast Asia, country-case studies were conducted to explore the **contribution of Community Health Workers (CHW) in providing care at time of birth** as well as during and after pregnancy and to understand if and how these workers are linked to the formal health system.

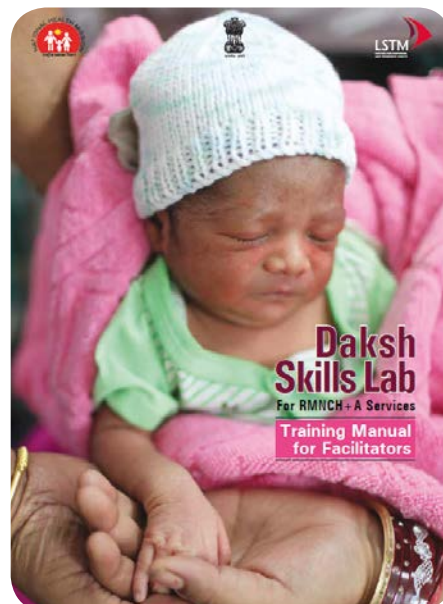


Image Credit: © 2010 European External Action Service, Bangladesh, Courtesy of FLICKR



Image Credit: © 2015 John Gray

## Newborn Care

Every year, 2.9 million neonates die globally, accounting for 45% of all under-5 child mortality. Severe respiratory distress is common to the three main causes of neonatal death (i.e. prematurity, intrapartum-related deaths and neonatal infections). **Continuous Positive Airway Pressure (CPAP)** is a simple and highly effective form of respiratory support. CMNH conducted a **national survey in India** to evaluate the use of CPAP in 142 neonatal units and is currently conducting a similar national survey of CPAP use in **Kenya**. A qualitative study in Andhra Pradesh explored healthcare providers' experiences of the use of CPAP. The results of these studies will inform policy makers and healthcare implementers about the current standards of CPAP use and its effectiveness in these diverse low resource settings.

UNICEF and the Government of India have established 600 **Special Newborn Care Units (SNCUs)** across **India**. UNICEF provided technical and financial support, primarily focussing on addressing existing and emerging challenges through development and implementation of standards, protocols and quality improvement guidelines, linking facilities with communities and setting up a real-time data monitoring system to ensure credible data is collected to track performance and initiate timely actions. CMNH will evaluate the programme in five states across India.

## Emergency Obstetric Care

Emergency Obstetric Care (EmOC) is an evidence-based care package designed to save lives and reduce preventable maternal and neonatal mortality, morbidity and stillbirths. CMNH developed and evaluated a short **'skills and drills' competency-based EmOC training package** which is accredited by the World Health Organization (WHO) and the Royal College of Obstetricians and Gynaecologists (RCOG).

Since 2006, this has been used in 20 countries with over 30,000 healthcare providers trained. Evaluation shows that over 95% of healthcare providers improve their knowledge and skills. This has been shown to result in a significant improvement in the availability and quality of EmOC, improved recognition and management of women and babies who have complications, and, a reduction in case fatality rates, maternal deaths and stillbirths. CMNH completed the first multi-country study to investigate the factors that determine knowledge and skills of maternity care providers, and, retention after EmOC training.

In 2017, CMNH also conducted a country-wide **assessment of the availability and quality of EmOC** in Namibia. Regional assessments were conducted in Nigeria, Tanzania and Kenya. Information obtained was used to inform the strategic plans in each country.





CMNH continues to work with the Ministry of Health and Family Welfare in India to support the five **national skills laboratories set up by CMNH in Delhi**. In addition to the core programme on reproductive, maternal and newborn and child health, CMNH has developed training modules for advanced skills (such as instrumental delivery and manual vacuum aspiration) which are used in the skills labs. CMNH provides quality assurance and supportive supervision for the national skills laboratories and in selected state level skills laboratories. This work is supported by WHO India. Similar models are implemented in other countries including Nigeria (supported by Johnson & Johnson), Bangladesh (supported by the professional associations), Malawi and Tanzania (supported by UNICEF) and Kenya (supported by UK AID).



## Quality of care

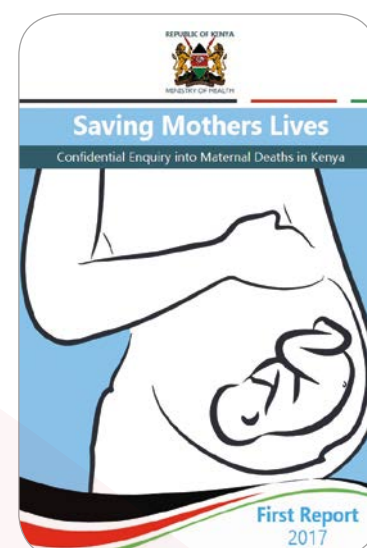
Quality improvement is a critical component of CMNH's work in many countries. CMNH has developed a core set of **standards for the quality of integrated antenatal and postnatal care**, which have been reviewed by international experts and will be used to support standards-based audit across multiple countries.

Qualitative studies were conducted among women and healthcare providers to understand **what quality of care means and how this can be provided**. A multi-level study of **factors influencing the success of quality improvement methods**, and innovative studies to develop Patient Reported Outcome Measures (PROMS) for maternity care were conducted in Malawi, Kenya and South Africa.

**Maternal and perinatal death audit** are supported in Tanzania, Nigeria and Malawi. Funded by Johnson & Johnson (Nigeria), UNICEF (Tanzania and Malawi) and Accuro (Malawi), these audits have led to changes in the care processes and improvement in the management of women at time of birth.

In Kenya, the national Maternal Death Surveillance and Response (MDSR) programme was supported with the first national report published in September 2017.

An in-depth study of the **causes of and factors contributing to stillbirths** was conducted in four sub-Saharan countries which concluded that the majority of stillbirths could be avoided through improved access to quality antenatal care, skilled attendance at birth and emergency obstetric care. Algorithms were developed and tested to enable healthcare providers to assign cause of perinatal death using the new ICD-PN cause classification.



In partnership with the World Health Organization, CMNH has developed an app for healthcare providers working in low- and middle-income countries to support perinatal death audit.

Qualitative studies to explore women's and providers' views of the quality of maternal and newborn care were conducted in Malawi, Kenya and South Africa.

CMNH is a member of the global Quality Equity Dignity Network and the Global MDSR and Stillbirth and Neonatal Death Review Technical Working Group.



## BIRTH

In 2017, CMNH commenced a new partnership with the Royal Exchange Theatre and the Oglesby Charitable Trust in Manchester. BIRTH uses the power of theatre and scientific debate together to highlight the issues and solutions regarding global inequality in the availability and quality of care for women before, during and at the time of giving birth. Performances at the Royal Exchange Theatre in Manchester, the Traverse Theatre in Edinburgh and the Product Arts Centre in Dublin as part of Fringe Festivals were very successful. Evaluation shows that audience members felt emotionally moved by the performances (93%), felt challenged and provoked (71%) and are interested in finding out more about solutions to the themes highlighted in each of the plays (77%).

*"Beautifully written and exquisitely performed, very thought provoking."*

*"Incredible plays, so fantastic. Please, please, please, tour these everywhere and get these stories to as many people as you can! Thank you!"*

## Volunteering with CMNH

In 2017, CMNH conducted an online survey to assess the views and experiences of healthcare providers who volunteered as Facilitators for EmOC training workshops delivered in low- and middle-income countries to assess the impact of the experience for the individual volunteer, the host country and the country of origin.

Of the 262 volunteers, many reported that volunteering had positively impacted their personal (70%) and professional life (64%). Volunteering increased their confidence, and, strengthened their leadership skills. Nearly all participants strongly agreed or agreed that the programme they volunteered for with CMNH had an impact, built sustainable partnerships, promoted multidisciplinary team working, and, improved the knowledge and skills of participants. All participants had recommended volunteering with CMNH to a colleague. Thank you!





### A tribute to David Goodall FRCOG (1939 – 2017)

It was with great sadness that CMNH said goodbye to Dr David Goodall this year – one of the great obstetricians and gynaecologists of our time, a truly inspirational clinician and teacher, who had helped pilot the first ever EmOC training workshops and volunteered with CMNH on many occasions.



### Our Funders in 2017


- Accuro
  - GIZ
  - Johnson & Johnson
  - The Department for International Development-UK AID
- The Global Fund
  - The HT Parekh Foundation
  - The Oglesby Charitable Trust
  - The Royal College of Midwives
- UNFPA
  - UNICEF
  - World Health Organization

### Publications

#### Top cited papers in 2017

Madaj B, Smith H, Mathai M, Roos N, van den Broek N. (2017) Developing global indicators for quality of maternal and newborn care: a feasibility assessment. Bulletin of the World Health Organization 95(6):445-52. doi: 10.2471/BLT.16.179531
Ameh CA, Kerr R, Madaj B, Mdegela M, Kana T, Jones S, Lambert J, Dickinson F, White S and van den Broek N. (2016) Knowledge and Skills of Healthcare Providers in Sub-Saharan Africa and Asia before and after Competency-Based Training in Emergency Obstetric and Early Newborn Care, PLOS ONE 11(12):e0167270. doi: 10.1371/journal.pone.0167270
Halim A, Dewez JE, Biswas A, Rahman F, White S and van den Broek N. (2016) When, Where, and Why Are Babies Dying? Neonatal Death Surveillance and Review in Bangladesh, PLOS ONE. 11(8):e0159388. doi: 10.1371/journal.pone.0159388
Mgawadere F, Unkels R, Adegoke A, van den Broek N. (2016) Measuring maternal mortality using a Reproductive Age Mortality Study (RAMOS). BMC Pregnancy & Childbirth 16:291. doi: 10.1186/s12884-016-1084-8
Aminu M, Unkels R, Mdegela M, Utz B, Adaji S and van den Broek N. (2014) Causes of and factors associated with stillbirth in low- and middle-income countries: a systematic literature review, BJOG: An International Journal of Obstetrics & Gynaecology 121(S4):141-53. doi: 10.1111/1471-0528.12995
Ameh CA, Msuya S, Hofman J, Raven J, Mathai M and van den Broek N. (2012) Status of Emergency Obstetric Care in Six Developing Countries Five Years before the MDG Targets for Maternal and Newborn Health, PLoS ONE, vol. 7, no. 12, pp. e49938. doi: 10.1371/journal.pone.0049938





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