

Cambridge – Uganda Health Partnership

Improving maternal and neonatal healthcare at Mulago Hospital

The project at a glance

We have working to reduce maternal mortality in Mulago Hospital, Kampala, Uganda. The project is working alongside a long term research partnership between Cambridge University and Makerere University in Kampala.

The project combines supporting clinical capacity alongside research capacity and focuses on the four major causes of maternal mortality - sepsis, pre-eclampsia, haemorrhage and obstructed labour. Our aim is to work to promote multidisciplinary involvement in the development of protocols for the management of these conditions.

Within the partnership Cambridge-based collaborators are working with colleagues at Mulago/Makerere to support the production of a new textbook 'Principles of Obstetrics in Africa' which will be published by Cambridge University Press (CUP) as a partner to their current 'Principles of Medicine in Africa'.

Background: Maternal and reproductive health in Uganda

Uganda is the world's second most populous landlocked country. After 68 years under colonial rule, Uganda gained independence in 1962. Uganda is a low-income country, which is recovering from two decades of civil unrest which had a devastating impact on the healthcare sector.

The key link in our project is between the Rosie Hospital and the Department of Obstetrics and Gynaecology. Mulago Hospital was founded in 1913, and is the national referral hospital for the entire country, serving as a general hospital for the Kampala metropolitan as well as being the teaching hospital for the Makerere College of Health Sciences.

We work with the Department of Obstetrics and Gynaecology, which offers many Reproductive health services. Their website reads as follows: 'This very busy department delivers about 35,000 mothers annually, and offers a wide range of other clinical services for purposes of streamlining teaching, research and patient care.

'The department is resource stretched, with limited availability of clinical supplies and drugs, a low staff: patient ratio making one to one care impossible, in addition to overcrowding due to insufficient numbers of beds for patients, which contributes to the poor infection control within the hospital.'ⁱ

Uganda has a ratio of 1.8 health workers per 1000 people, which is far below the World Health Organisation's standard of 2.5 health workers per 1000. ⁱⁱ In 2014/15 Mulago had a gap of 33% of staffing positions needing to be filled, and the patient load in Mulago hospital continues to be too heavy, affecting the quality of services. During 2014/15, the hospital attended to 39,081 deliveries.ⁱⁱⁱ By comparison, there were 5,582 babies delivered at The Rosie in 2016/7.^{iv}



Maternal Mortality

In 2015 the maternal mortality rate was 343 per 100,000 live births.^v

16 women die every day in Uganda due to complications during or after childbirth. Most of these deaths are due to preventable or treatable conditions.

Haemorrhage (loosing too much blood during or after childbirth) and obstetric sepsis (suffering from infection during and following pregnancy and childbirth) are the most common causes of maternal deaths in Uganda and only 33% of women and their newborn babies have a postnatal visit within two days of delivery.^{vi}

The UN Sustainable Development Goals set a target of reducing global maternal mortality to less than 70 per 100 000 live births by 2030.^{vii}

SUSTAINABLE DEVELOPMENT GOAL 3
Ensure healthy lives and promote well-being for all at all ages



The report of the sixth Demographic and Health Survey 2016 from the Uganda Bureau of Statistics (UBOS) revealed a significant decline in infant and maternal mortality. The maternal mortality rate was reported to have decreased from 438 deaths per 100,000 live births (for the period 2004 – 2011, the 2011 UDHS) to 336 deaths per 100,000 live births for the period 2009 – 2016, the 2016 UDHS.^{viii}

TARGETS

3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births

A downward trend is positive, but nonetheless the rate is still far too high. In 2015 the maternal mortality rate was 343 per 100,000 live births. By way of comparison, in 2015 the maternal mortality ratio (per 100,000 live births) United Kingdom was 9, India was 174, El Salvador 54, Austria 4.^{ix}

Neonatal Mortality: Key indicators

In 2015 Uganda's neonatal mortality rate was 19 deaths per 1,000 live births.

Approximately 81 babies under 28 days old will die each day.

96 stillbirths occur every day.

The main causes of neonatal deaths in Uganda in 2015 were birth asphyxia (28.6 percent), prematurity (27.9 percent) and sepsis (18.2 percent).^x

Our response:

Cambridge - Uganda Health Partnership

The partnership originated from a long term academic research partnership.

There is an established Cambridge Africa Programme (THRiVE) ^{xi} partnership between academic researchers from the University of Cambridge and Makerere University, who are undertaking research on the genetics of pre-eclampsia.

In 2014 we were approached by Cambridge Africa, following requests from clinicians in Mulago Hospital, to extend the partnership to include a clinical focus.

Through a series of meetings and scoping visits initial plans developed for a five-year project, which would be a partnership between Rosie Hospital staff and staff at Mulago Hospital working towards reducing maternal mortality.

The focus of the project is on three of the main causes of maternal mortality – sepsis, post-partum haemorrhage (PPH) and preeclampsia / eclampsia (PET). Our aim is to work to enable multidisciplinary involvement in the development and implementation of clinical guidelines for the effective management of these conditions.

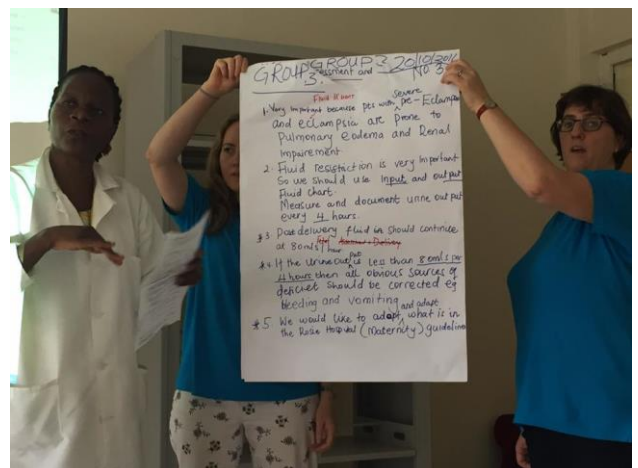
Activity includes sub-speciality training, data collection and use, support in recognising symptoms requiring escalation of care to high dependency or intensive care for eclampsia and the clinical management of major complications.



Project Activity

In **March 2015** two obstetricians from the Rosie Hospital in Cambridge and CGHP's Director visited Mulago Hospital to initiate the collaborative project with key partners in Uganda at Makerere University and Mulago Hospital. A collaboration was welcomed and clinical leads and areas of focus for partnership activity were identified.

A return visit took place in **September 2015**, when we hosted a team of Ugandan counterparts in Cambridge to help further identify areas of need at Mulago Hospital that could be appropriately included in the partnership aims and activity. A junior doctor from Cambridge undertook a 3 month placement at Mulago Hospital to carry out an audit on the severe pre-eclampsia room, the outcomes of which have been used to identify how we can improve outcomes for patients and what changes could be implemented.



In October 2016, a multidisciplinary team from Cambridge visited Kampala for the first time.

A team of seven comprising Consultant Obstetricians, Anaesthetists and Midwives flew out to work with healthcare workers at Mulago Hospital.

They worked to develop guidelines on some of the main causes of maternal mortality and outlined how these guidelines could be practically implemented to improve the care given to pregnant women.



They ran lectures, workshops and skills drills related to guideline development. Participants included obstetricians and midwives, and trainees. Over the course of four days the team trained approximately 200 Ugandan healthcare staff. There was a particular emphasis on ensuring local ownership of the guidelines as well as the multidisciplinary involvement of doctors, midwives and students.

The team in Mulago developed an action plan to complete the guidelines, embed these through training and develop audit standards and audits to check that change had occurred.

There is ongoing dialogue between clinical counterparts from Mulago and Cambridge to facilitate the introduction and embedding of the newly developed protocols into clinical practice. A new Women's Hospital is currently under construction at Mulago and it is expected that the Department of Obstetrics will move when this new hospital opens later in 2018.

'Developing a partnership with the Mulago team feels really worthwhile and beneficial to us as well as, we hope, those working in Mulago. Understanding the challenges on both sides has opened our eyes to the opportunities for change and learning both in Cambridge and Uganda'

- Cambridge team Trip Report, 2016



'The sharing of skills and knowledge has been phenomenal, with a key highlight being the empowerment of midwives to take the lead in skills drills and policy development.'

- Cambridge team Trip Report, 2016

Developing a textbook: 'Principles of Obstetrics in Africa'

We are also supporting our partners in Mulago Hospital and Makerere University to create a new textbook 'Principles of Obstetrics in Africa'.

The new textbook will be published by Cambridge University Press (CUP) as a partner to their current 'Principles of Medicine in Africa.' CUP have agreed to edit the book for free and the plan is to have it available free on the internet and in paperback.

The textbook will be written and edited by authors in Uganda with help from the team in Cambridge.

In November 2017 two Cambridge professionals visited Kampala to work on textbook content. On this visit they focused on meeting both the editors and the authors to confirm the book chapters and to write an outline for the content of a large number of the chapters. We did this in a series of workshops where we met with a group of authors and encouraged them to 'brainstorm' the things that they felt needed to be included. We then provided each author with written notes from the session to elaborate on and return to one of the editors with a deadline for the first draft by the end of January.

On this visit they also followed up progress from previous partnership activity, which focussed on developing guidelines for the management of preeclampsia and sepsis at Mulago Maternity Hospital. The Protocol for PPH was up and running with a poster on the Labour ward and a PPH box available, and the team felt that management of obstetric emergencies had improved.

ⁱ <https://mulagohospital.or.ug/obstetrics-and-gynaecology/> accessed 23/04/2018

ⁱⁱ <http://www.worldbank.org/en/news/feature/2012/10/23/uganda-makes-progress-on-maternal-health-but-serious-challenges-remain> accessed 31/05/2018

ⁱⁱⁱ <http://health.go.ug/content/mulago-national-referral-hospital> accessed 23/04/2018

^{iv} https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/634098/CAMBRIDGE_Annual_Report_and_Accounts_2016-17.pdf accessed 01/06/2018 (page 8)

^v http://gamapserver.who.int/gho/interactive_charts/mdg5_mm/atlas.html accessed 13/06/2018

^{vi} <http://www.worldbank.org/en/news/feature/2012/10/23/uganda-makes-progress-on-maternal-health-but-serious-challenges-remain> accessed 31/05/2018

^{vii} <https://sustainabledevelopment.un.org/sdg3> accessed 31/05/2018

^{viii} https://www.newvision.co.ug/new_vision/news/1448674/uganda-registers-decline-infant-maternal-mortality accessed 04/06/2018

^{ix} http://gamapserver.who.int/gho/interactive_charts/mdg5_mm/atlas.html accessed 23/04/2018

^x https://data.unicef.org/wp-content/uploads/country_profiles/Uganda/country%20profile_UGA.pdf accessed 31/05/2018

^{xi} See: <https://www.cambridge-africa.cam.ac.uk/initiatives/thrive/>