Institution: University of Southampton

Unit of Assessment: 22 Social Work and Social Policy

Title of case study: 22-05 Influencing Maternal and Child Health Policies in Resource-poor Countries

1. Summary of the impact

Research by the University of Southampton into maternal and child health in the developing world has contributed significantly to the design of better health policies by governments, international agencies, and non-governmental organisations. The research broke new ground in identifying the urban poor in developing countries as among the groups most at risk of poor maternal and child health. Its findings have informed policy and funding priorities at national and international organisations including the Department for International Development (DFID) and the United Nations; influenced health practitioners in Africa and Asia; and led to better health care outcomes in countries which were the focus of the research.

2. Underpinning research

Reducing maternal mortality worldwide remains among the most elusive of the Millennium Development Goals (MDGs). Every day, approximately 800 women worldwide die from preventable causes related to pregnancy and childbirth. 99% of them live in developing countries, particularly sub-Saharan Africa and South Asia. The majority of these women could be saved with adequate reproductive health and maternity care. Similarly, over 3 million newborns die needlessly every year. It is on these areas that the Centre for Global Health, Population, Poverty, and Policy (GHP3) at the University of Southampton and its predecessor, *Opportunities and Choices* DFID Reproductive Health Knowledge Programme (1999-2005) have focused much of their research. Over the past two decades, Zoë Matthews, Professor of Global Health and Co-Director of GHP3 (1993-), and Nyovani Madise, Professor of Demography and Social Statistics (1993-) and founding director of GHP3, and their teams have produced a number of high quality research outputs on access to reproductive and maternal health care and the quality of that care.

a) In a paper published in the Lancet [**3.1**], Matthews et al found that the lack of skilled providers (doctors and midwives) was one of the key barriers to stemming the tide of maternal and newborn deaths, and that teams of midwives and midwife assistants working in facilities (as opposed to solo health workers assisting with home deliveries) are the most efficient option for increasing the availability of maternity care. This work commenced while Matthews was on secondment to the World Health Organisation (WHO) in 2003-2005 where she carried out global policy overviews on maternal and newborn health and survival through structured literature reviews informed by medical and other health staff worldwide [**3.2**]. The results were reported in the World Health Report 2005. During her secondment, Matthews retained her Reader position at Southampton where she had access to research facilities and funding from the Opportunities and Choices DFID-funded programme, to enable her to continue to work on collaborative projects.

b) Madise and her collaborators at the African Population Health Research Centre conducted pioneering empirical research among the urban poor in Kenya and other Africa countries from 2004 to 2012 [**3.3-3.4**]. This body of research, funded by the World Bank and the Wellcome Trust, showed that the residents of urban informal settlements (or slums) often lack access to formal health care despite their close physical proximity to health services, challenging the notion that urban residents have better health outcomes than their rural counterparts. In the Kenya study, slum residents had as much as 25% higher maternal mortality than the national rate and poorer child health outcomes than the national population. Matthews, Madise, Dr Amos Channon (lecturer since 2008) and their collaborators from UCL and Agha Khan University strengthened these findings in 2010 through an analysis of data from 30 poor countries which again showed that no urban 'advantage' in health care and child survival exists

for poor people [**3.5**]. The work was published in leading journals including PLoS Medicine, American Journal of Public Health, Demography, and Social Science and Medicine.

c) Matthews et al, with funding from the Wellcome Trust, also conducted a situation analysis of the quality of care within institutional maternity services in a slum area in Mumbai in India, developing a framework [**3.6**] which can be used as a flexible quality assessment tool in similar settings in developing countries. Key findings included evidence that care quality is far from optimal in either municipal or private facilities, with quality issues including a lack of essential drugs, the use of inappropriate procedures, and women being left unsupported, among others.

3. References to the research

3.1 Koblinsky M, Van Lerberghe, W, ***Matthews Z*** et al. (2006) Going to scale with professional skilled care. *The Lancet*, 368; 9544:1377-1386.

3.2 World Health Organisation (2005) *World Health Report 2005*. W. Van Lerberghe (Editor in Chief) with ***Matthews Z***, Manuel A. and Wolfheim C, WHO, Geneva.

3.3 Stephenson R, Bascheiri A, Clements S, Hennink M, and **Madise NJ** (2006) Contextual influences on the use of health facilities for childbirth in Africa. *Am. J. Public Health*, 96 (1): 84-93.

3.4 Ziraba AK, ***Madise*** **NJ**, Mills S, Kyobutungi C & Ezeh A (2009) Maternal Mortality in the informal settlements of Nairobi city: What do we know? *Reproductive Health, 6:6.*

3.5 ***Matthews Z,*** **Channon A,** Neal S, Osrin D, ***Madise NJ*** et al. (2010) Examining the 'urban advantage' in maternal healthcare in developing countries, *PLOS Medicine* 7(9), e1000327.

3.6 Hulton L, ***Matthews Z &*** Stones RW (2007) Applying a framework for assessing quality of maternal health services in urban India. *Soc Sci Med*, 64(10): 2083-2095.

Grants

1) Diamond I, Stones RW, Black T, **Matthews Z**, **Madise NJ**, Falkingham, JC et al. Improving peoples' benefit of reproductive health services, DFID, 1999-2005. £2.3 million. Funding for *Opportunities and Choices* DFID Reproductive Health Knowledge programme.

2) Stones RW, Ramasubbon R & ***Matthews Z,*** Maternal health seeking in the slums of Mumbai, Wellcome Trust, 1999 – 2002, £153,000.

3) **Madise, NJ,** Ezeh, A, Fotso, JC, Ziraba, A et al. Averting preventable maternal mortality: Delays and barriers to the utilization of emergency obstetric care in Kenya. World Bank, 2005-2006, $100,000. Also core grants for the demographic surveillance (PIs Ezeh, A, Zulu, E, **Madise, NJ),** 2002-2006, Rockefeller Foundation ($687K) and William and Flora Hewlett Foundation ($1.5m).

4) Zulu E, **Madise NJ,** Falkingham JC, Cleland J, Ezeh A, Fotso JC. Urbanization, Poverty, and Health Dynamics in Sub-Saharan Africa, Wellcome Trust, 2006-2010, £2.4m.

5) Evidence for Action to Reduce Maternal and Neonatal Mortality in Africa. 2012-2016. £560,000. DFID. Sub-grant from Options to **Matthews Z, Madise, NJ,** Amoako Johnson, F, and Bailey C.

4. Details of the impact

As a direct result of their research, Matthews and Madise have advised leading national and international policy makers throughout the impact assessment period, with their findings informing policy development on maternal and child health in developing countries.

In 2008, the WHO's World Health Report of which Matthews was one of four main authors – and which remains the most comprehensive document of its kind - was disseminated to the House of

Commons International Development Committee. The findings from this report on maternal health skilled providers, alongside several other research outputs by Matthews et al. were cited as written evidence in the Committee's report on Maternal Health in February 2008 [**5.1, 5.7**]. Both Matthews and Madise act as advisors regularly for DFID and other international agencies. For example, in 2010 Madise and Matthews were invited to contribute to the development of DFID's Strategy for Reproductive, Maternal, and Newborn Health (RMNH), which is used in prioritising the nearly £200 million funding in these areas. The strategy document 'Choices for women: Planned Pregnancies, Safe Births and Healthy Newborns' uses evidence from the Atlas of Birth (see details below) and papers by Matthews and Madise on urban health in the rationale for investment [**5.2**].

Also in 2008, Matthews was commissioned by the Norwegian Prime Minister, Jens Stoltenberg, to report on the progress of MDGs 4 and 5 on child and maternal health. Her report was presented to the network of global leaders, including Gordon Brown, Bill Gates, and the then World Bank President Paul Zoellick, at a UN high level event in September 2008 leading to renewed focus on maternal and child health and a 'Call to Action' campaign led by Gordon Brown which asked for renewed global commitments to accelerate progress of the two MDGs [**5.3**]. Matthews' research input into the co-authored work, *The State of the World's Midwifery 2011: Delivering Health, Saving Lives* [**5.4**], the first global data collection of midwifery services from 68 resource-poor countries, was presented in September 2011 at a UN special retreat on women and children as part of the recommendations of UN Secretary-General Ban Ki Moon's new Accountability Commission for the health of Women and Children.

As a direct result of her research, Madise was invited to the United Nations Expert Group organised by the UN Population Division in January 2008 to discuss lessons from her work on maternal and child health in urban poor settings. The proceedings from this meeting were published and disseminated to member states by the United Nations [**5.5**]. Also, since 2005, Madise has been contacted to advise the William and Flora Hewlett Foundation and the Packard Foundations on priority areas for funding in the African continent. In 2012, she was approached by the Bill and Melinda Gates Foundation to advise them on how to improve access to reproductive health services among poor African women. Melinda Gates used some of Madise' s research findings in her speech at the TedX event in Berlin on 5th April 2012, which was attended by more than 300 people and broadcast online to millions worldwide [**5.10]**.

The research cited in Section 3 has also contributed to raising public awareness. In 2009 members of GHP3 were invited to collaborate with the White Ribbon Alliance (an international coalition promoting health care for women and newborns) to co-produce the global 'Atlas of Birth', an advocacy tool featuring powerfully communicated coloured maps. The Atlas was disseminated globally in 2009/10, including at the G8, Canadian Parliamentarians' meeting, the African Union Summit, the International Parliamentarians Annual meeting in Bangkok, and the 'Women Deliver' Conference. The Atlas of Birth is cited repeatedly in DFID's RMNH strategy [**5.2**].

Madise et al's research on maternal health in urban poor settings in Nairobi has had a direct impact in influencing service provision in the slum communities where it was undertaken. Madise disseminated the results of her research on maternal health among women in Nairobi slums to District Medical Officers of Health (DMOH) in the Nairobi province and as a direct result, the DMOH of Kasarani district in 2012 persuaded the Government of Kenya to build two maternity facilities in one of the slums. These facilities, expected to be opened in July 2013, will serve a population of over 200,000 [**5.8**]. In addition, the DMOH's office has reviewed the way they record the causes of maternal deaths as a direct result of Madise et al's work.

Similarly, Matthews' framework for assessing the quality of care in institutional settings in developing countries has been used in Nepal where the Family Health Division in the Ministry of Health has developed the 'Monitoring of Quality of Care in Maternity Services' guidelines based on the Southampton research and on the WHO Mother Baby Package. The guidelines, which have been implemented in 14 health facilities, have resulted in changes in hospital working modalities in

maternity care and improved the care for millions of pregnant women [**5.6**].

The research by GHP3 on maternal health has had significant impact on policies of governments and international agencies, and indirectly led to millions of women's and children's lives saved. With new funding, Matthews and Madise are continuing to engage with research users to translate their work into policies and actions (for example DFID funding mentioned in Section 3 to work with governments in six African countries to improve women's and children's health, and Wellcome Trust funding to engage with Kenya Ministry of Health).

5. Sources to corroborate the impact

5.1 House of Commons International Development Committee. Maternal Health: Fifth report of Session 2007-2008, Volume II, Oral and Written Evidence. ***See reports' pages EV105-EV108: Written evidence uses the 2005 World Health Report co-authored by Matthews, her Lancet paper 2006; and work published by Moore, Madise et al. 2007 on adolescents and coerced sex.***

5.2 'Choices for women: Planned pregnancies, safe births and healthy newborns';

The UK's Framework for Results for improving reproductive, maternal and newborn health in the developing world, DFID 2010. ***See pages 12-13 which use the Atlas of Birth and evidence from Ziraba, Madise et al (2009) on maternal mortality ratio in Nairobi slums).***

5.3 Network of Global Leaders Annual Reports: Leading by Example - Protecting the most vulnerable during the economic crisis, The Global Campaign for the Health Millennium Development Goals 2009. Contact: Director, Global Health and AIDS Department, Norwegian Agency for Development, Cooperation.

5.4 The State of the World's Midwifery 2011: Delivering Health, Saving Lives. UNFPA. ***Named contributors include Zoe Matthews (editorial member) and also Sarah Neal, Nyovani Madise from GHP3***.

5.5 United Nations Expert Group Meeting on Population Distribution, Urbanization, Internal Migration and Development, New York, 21-23. Department of Economic and Social Affairs, Population Division. ESA/P/WP.206, March 2008: New York. ***Madise's contribution to this UN document is on pp 231-247***.

Contacts who can corroborate impact claims:

5.6 **Email from Reproductive Health Coordinator**, Family Health Division, Nepal, confirming the incorporation of Southampton research into the 'Monitoring of Quality of Care in Maternity Services' guidelines.

5.7 The Director of Department for Global Health, Education and Research, Norwegian Agency for Development Cooperation (NORAD).

5.8 **Letter from District Medical Officer of Health** – Kasarani, Nairobi is available on request.

5.9 DFID contact: Health Adviser, Department for International Development, Policy and Research Division, DFID.

5.10 Bill and Melinda Gates Foundation: Co-Chair or Head of Speechwriting. **Email acknowledgement from Co-Chair available on request.**