Institution: University College London

Unit of Assessment: 2 - Public Health, Health Services and Primary Care

Title of case study: Community intervention through women's groups improves maternal and newborn survival and health in low-resource settings

1. Summary of the impact

UCL researchers and overseas partners have developed a successful community intervention to improve maternal and newborn health, which is now saving lives in India's poorest communities and is being taken up in other low- and middle-income countries. The intervention involves village women's groups working together to identify, prioritise and address common problems during and after pregnancy using local resources. The process was tested successfully in Nepal, led to a 45% reduction in newborn mortality in an award-winning trial in rural India, demonstrated an impact on maternal mortality in a meta-analysis of seven trials across four countries, and has already been scaled up to a population of over 1.5 million in rural India's poorest communities.

2. Underpinning research

Nearly ninety-nine per cent of the world's maternal and newborn deaths occur in low- and middle-income countries. South Asian and African nations shoulder a substantial proportion of this burden.

From 2000 to 2004, Professor Anthony Costello and Dr David Osrin at the UCL Institute for Global Health (IGH) worked with MIRA, an NGO in Nepal, to develop and test a community intervention, which involved women's groups in identifying, prioritising, and addressing common problems during the perinatal period using participatory methods. The intervention was tested in a large community cluster-randomised controlled trial (RCT) in Nepal, where it led to a 30% reduction in neonatal mortality **[1]**. The intervention increased care-seeking during pregnancy and institutional deliveries, and was also linked to improved newborn care practices in the home.

From 2005 to 2012, Costello and Osrin, along with Dr Tim Colbourn, Dr Edward Fottrell (both IGH) and Dr Audrey Prost (UCL Institute of Child Health) worked with partner organisations in India, Malawi, Nepal and Bangladesh to test the impact of the women's group intervention on maternal and newborn health in other under-served communities.

In rural India, the trial of the women's group intervention led by our partner, Ekjut, resulted in a 45% reduction in newborn deaths over two years in rural, largely indigenous communities among the poorest in India **[2]**. Further research also found that, in this rural trial, mortality reduction was greatest among the poorest mothers, suggesting that women's groups can be an effective way of targeting inequalities **[3]**. The intervention's evaluation won the Society for Clinical Trials' 2011 *Trial of the Year* award.

The intervention was also tested in slum communities in Mumbai, India, in a project led by local organisation SNEHA (Society for Nutrition, Education & Health Action) in collaboration with Osrin. In this setting, the effects were not as great as for the rural population. One reason for this was that newborn survival was already better than in the other settings in which groups were implemented **[4]**.

Research in Malawi has been ongoing since 2003, when the MaiMwana project was set-up by UCL researchers Sonia Lewycka and Mikey Rosato to test the effect of the women's group intervention in Africa for the first time. The results of the MaiMwana women's group intervention were impressive: a 74% reduction in maternal mortality, and a 41% reduction in newborn mortality **[5]**. In 2007 another less-intensive women's group intervention, MaiKhanda, was tested, also by cluster randomised trial, by UCL researchers Tim Colbourn and Bejoy Nambiar. MaiKhanda also achieved significant results: a 16% reduction in perinatal mortality (stillbirths and deaths in the first week of life) and a 23% reduction in newborn mortality in areas where the women's group intervention was

combined with a health facility quality improvement intervention **[6]**.

The intervention did not have the same impact on mortality as observed in Nepal and rural India when applied to a population of around 500,000 in rural Bangladesh with partners BADAS-PCP between 2005 and 2007. This caused us to question why the intervention had been so successful in some settings but not in others and we concluded that population coverage of the intervention was likely to be key (i.e. the ratio of community women's group per population). We therefore decided to test the intervention at a higher population coverage, increasing the number of groups from a coverage of one per 1,400 to one per 300 population. The results showed that when delivered at this higher population coverage and with greater participation or pregnant women and women of reproductive age, the intervention reduced newborn mortality by more than one third and was highly cost-effective **[7]**.

In 2013, a meta-analysis led by Prost and Colbourn collated data from seven trials testing the impact of women's groups, and found that the intervention reduced maternal mortality by around a third, or, in trials where the groups had greater than 30% of pregnant women as members, by 55% **[8]**. This is the first time that a community intervention other than training Traditional Birth Attendants has demonstrated an impact on maternal mortality at a population level.

Partner organisations:

- Ekjut, India: http://ekjutindia.org
- SNEHA, India: http://www.snehamumbai.org/
- MaiMwana Project, Malawi: http://www.maimwana.malawi.net/MaiMwana/Home.html
- Diabetic Association of Bangladesh: http://www.dab-bd.org/pcp.php
- MIRA, Nepal http://www.mira.org.np/mira/
- MaiKhanda, Malawi http://www.maikhandatrust.org/About_Us.html

3. References to the research

[1] Manandhar DS, Osrin D, Shrestha BP, et al.; Members of the MIRA Makwanpur trial team. Effect of a participatory intervention with women's groups on birth outcomes in Nepal: cluster-randomised controlled trial. Lancet. 2004 Sep 11-17;364(9438):970-9. http://doi.org/fntgkw

[2] Tripathy P, Nair N, Barnett S, et al. Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: a cluster-randomised controlled trial. Lancet. 2010 Apr 3;375(9721):1182-92. http://doi.org/bs583j

[3] Houweling TA, Tripathy P, Nair N, et al. The equity impact of participatory women's groups to reduce neonatal mortality in India: secondary analysis of a cluster-randomised trial. Int J Epidemiol. 2013 Apr;42(2):520-32. http://dx.doi.org/10.1093/ije/dyt012.

[4] More NS, Bapat U, Das S, et al. Community mobilization in Mumbai slums to improve perinatal care and outcomes: a cluster randomized controlled trial. PLoS Med. 2012;9(7):e1001257. http://doi.org/p5w

[5] Lewycka S, Mwansambo C, Rosato M, et al. Effect of women's groups and volunteer peer counselling on rates of mortality, morbidity, and health behaviours in mothers and children in rural Malawi (MaiMwana): a factorial, cluster-randomised controlled trial. Lancet. 2013 May 18;381(9879):1721-35. http://dx.doi.org/10.1016/S0140-6736(12)61959-X.

[6] Colbourn T, Nambiar B, Bondo A, et al. Effects of quality improvement in health facilities and community mobilization through women's groups on maternal, neonatal and perinatal mortality in three districts of Malawi: MaiKhanda, a cluster randomized controlled effectiveness trial. Int Health. 2013 Sep;5(3):180-95. http://dx.doi.org/10.1093/inthealth/iht011.

[7] Fottrell E, Azad K, Kuddus A, et al. The effect of increased coverage of participatory women's groups on neonatal mortality in Bangladesh: A cluster randomized trial. JAMA Pediatr. 2013 Sep;167(9):816-25. http://dx.doi.org/10.1001/jamapediatrics.2013.2534.

[8] Prost A, Colbourn T, Seward N, et al. Women's groups practising participatory learning and

action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. Lancet. 2013 May 18;381(9879):1736-46. http://doi.org/f2m7hq

Society for Clinical Trials, Trial of the Year Awards 2011: http://www.sctweb.org/public/about/toty.cfm

4. Details of the impact

As a result of the underpinning research described above, scale-up of participatory women's groups has begun in various parts of India. Our work has also begun to influence policy in other low and middle-income countries. The results of our meta-analysis influenced WHO's decision to develop a training module on the intervention for global dissemination.

From 2008-13, UCL and Ekjut worked to scale up the intervention in the high-mortality eastern Indian states of Jharkhand and Odisha. In total, the project led to work with 4,676 women's groups across 17 districts in four states, covering a population of over two million people **[a]**. In 2012, the Department of Health and Family Welfare in Jharkhand incorporated the intervention into the curriculum of the Accredited Social Health Activist, a cadre of community health volunteers working in the country's poorest areas, and rolled out the intervention across the state **[b]**. In 2013, the intervention was rolled out in the state of Odisha in a collaboration between the Departments of Health, Women and Child Development, and Rural Development, together with the UK Department for International Development (DFID). DFID India made the decision to promote the women's group intervention as a cost-effective strategy to improve maternal and newborn health and to test its application to other health issues, including maternal and child under-nutrition **[c]**. The roll-out in Odisha covers a population of over one million women **[d]**.

The results of our work have received vast media coverage in India and internationally. An article in *The Hindu* in 2010 interviewed mothers who had benefited from the programme. One described the impact of the programme as follows: "*Earlier, we didn't clean our hands before cooking and eating. We'd just leave the baby and go off to work. Now we clean and grow vegetables ourselves. We keep the water clean in the house. Women in the village help one another and sometimes pool money to transport someone to hospital for delivery and visits to the doctor*." Another said: "*Earlier, when a problem arose, we would pray. Now, I go to a doctor at the slightest problem. I ate spinach, fish and vegetables during and after my recent pregnancy. I breast-fed for six months from the first day*" **[e]**. This story was also covered by the *Guardian* and *Time*, as well as on Indian national television **[f]**. The *New York Times* also reported favourably on the publication of our first Mumbai trial, where the results were less successful, reflecting on the use of evidence in global policy and the political pressure to show only positive findings **[g]**.

In Malawi, the intervention has been adopted as a model for improving maternal and newborn health by the Ministry of Health, UNFPA and the Uchembere Network. Project team members participated in the development of the Government of Malawi's plan for community interventions, part of the Health Sector Strategic Plan (2011-6) and the Malawi Road Map for Accelerating the Reduction of Maternal and Neonatal Mortality **[h]**. Further media coverage for MaiKhanda included an interview with Voice of America in June 2013 **[i]**.

Through the non-governmental organisation Women and Children First, we are supporting further uptake of the women's group intervention in Bangladesh, Malawi, Ethiopia and Uganda, using an implementation guide developed jointly with UCL, the Perinatal Care Project of the Diabetic Society of Bangladesh and Ekjut India **[j]**. The organisation aims to extend the thematic content of the women's groups model to test its effectiveness for addressing other maternal and child health issues, including family planning, prevention of mother to child transmission of HIV, and under-five's health and nutrition.

In December 2012, Costello and Prost participated in a World Health Organisation (WHO) workshop to design a module on community mobilisation with women's groups for maternal and newborn health, which will supplement WHO's existing guidance on Caring for Newborns and

Children in the Community **[k]**. The results of our meta-analysis were also presented to WHO in early 2013 and influenced their decision to develop a training module for community health workers intended for global dissemination; this will have an impact on developing country health systems around the world **[l]**. The meta-analysis results were also launched at a large event in the Houses of Parliament and at the Women Deliver International Conference, both in May 2013.

5. Sources to corroborate the impact

[a] Letter of support from the Funding Officer, Big Lottery Fund, who provided a grant to support the roll-out. The letter confirms the population coverage and numbers of groups, and writes that "having undertaken monitoring visits to project communities in both countries I am aware of how well the portfolio was received by the project beneficiaries and stakeholders and how successful it has been". Copy available on request.

[b] Letter from the Deputy Director of Health Services, Jharkhand Rural Health Mission Society, Department of Health and Family Welfare, Jharkhand. Corroborates incorporation into training modules. Copy available on request. Copies of letters to Chief Medical Officers of individual regions, confirming the roll-out, are also available.

[c] Corroboration of the influence of UCL and Ekjut's work on DFID in India can be obtained from the Health Advisor for DFID. Contact details provided.

[d] Odisha CM launches Shakti Varta- empowering women through participatory learning and action on health, nutrition involving self help groups". Odisha Diary. April 30, 2013. http://www.orissadiary.com/CurrentNews.asp?id=40992

[e] 'Lessons from the Ekjut way.' The Hindu. September 15, 2010. http://www.thehindu.com/opinion/op-ed/lessons-from-the-ekjut-way/article646019.ece

[f] Further media coverage:
- 'Ekjut achieves dramatic success in cutting child deaths in India.' The Guardian. September 10, 2010. http://www.guardian.co.uk/global-development/2010/sep/24/child-mortality-cut-india-ekjut
- 'In India, Getting Mothers Talking Saves Babies' Lives.' Time. April 6, 2010. http://www.time.com/time/world/article/0,8599,1978043,00.html
- Indian national television coverage: http://www.youtube.com/watch?v=fF-ebpLWNm8

[g] 'Learning From Failure.' The New York Times. February 1, 2013 http://www.nytimes.com/2013/02/03/opinion/sunday/learning-from-research-failure.html?_r=0

[h] Corroboration of the influence of UCL and MaiMwana's work on strategies to scale up interventions with community groups in Malawi can be obtained from the Principal Secretary, Ministry of Health, Government of the Republic of Malawi. Contact details provided.

[i] 'Better Maternal Care Reduces Newborn, Infant Mortality in Malawi.' Voice of America. June 24, 2013. http://m.voanews.com/a/1688430.html

[j] http://www.womenandchildrenfirst.org.uk/what-we-do/international-programmes/programme-resources

[k] Film by Mikey Rosato which was presented as evidence: https://vimeo.com/75751099

[l] Corroboration on plans for a WHO module on working with participatory women's groups to improve maternal and newborn health can be obtained from Technical Officer, Department of Maternal, Newborn, Child and Adolescent Health, World Health Organisation. Contact details provided.