

## Intervention of a mother-baby delivery pack to increase institutional deliveries in rural Zambia

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CULTURAL



HEALTH



SCIENTIFIC

### SUMMARY

Maternal mortality is extremely high in Zambia: for every 100,000 live births 398 mothers die. The World Health Organisation (WHO) states that delivery in institutions by skilled birth attendants is key to reducing the numbers of mothers in developing countries dying at the time of or shortly after giving birth, but in rural Zambia few babies are delivered in hospitals or other health facilities.

Our research found that the main barrier to having a baby in an institution was financial, because pregnant women have to pay for basic delivery provisions. We found that giving free mother-baby delivery packs out in a rural community in Zambia combined with health education resulted in a 43% increase in the number of babies being delivered in institutions.

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### RESEARCH DESCRIPTION

We asked 897 mothers of reproductive age in the Monze district, Zambia, about what was stopping mothers going to a health facility to have their babies. We found that women could not afford to pay for care and basic provisions at these institutions.

To address this, we developed a free mother-baby delivery-pack to be given to mothers who were coming to the health facility to have a baby. The pack contained delivery supplies (mother/baby clothes), delivery materials (gloves, disinfectants, soap), a 'chitenge' or wrapper for carrying the baby and a malaria net.

We carried out the study in two similar rural regions in Monze. In 2014, one group of pregnant women received health education and if they chose to give birth at the health facility they received the mother-baby delivery-pack when they arrived to have the baby. The other group of women did not receive the intervention. Importantly, UCD researcher Dr Mukonka worked to ensure support from tribal chiefs to ensure they were aware of the study.

Our trial showed a 43% increase in the number of health facility deliveries in the group who received the health education and packs in 2014 (2,396 deliveries) compared to 2013 (1,674 deliveries) and to 2012 (1,680 deliveries), while there was no significant change in the group who didn't receive the information and packs in 2014 (1,214 deliveries) compared to 2013 (1,322 deliveries) and 2012 (1,182 deliveries). The birth rates remained unchanged over the three-year period.

The study was conducted by Dr Victor Mukonka, PhD student at UCD and supervised by Prof Patricia Fitzpatrick (Principal Supervisor) and Prof Fionnuala McAuliffe (Co-supervisor). It was supported by the Ministry of Health, Zambia, Irish Aid, UNICEF and WHO.



Data collector for the cross-sectional survey interviewing a woman at her place of work in the fields

## RESEARCH IMPACT

Our research provides key evidence for policymakers to increase health facility deliveries and to reduce the numbers of mothers dying at and around the time of giving birth.

The mother-baby delivery pack provides a high-impact, low cost intervention that is easy to replicate and scale up using existing health sector systems. Each pack costs 19.15 US dollars and can be delivered to health care facilities using existing medication delivery services.

Thanks to the study, the disproportionately high burden of maternal deaths affecting rural Zambian women is being addressed by scaling up the results. This will provide an evidence-based culturally sensitive intervention aimed at one of the key barriers to institutional deliveries: the absence of delivery supplies. The Ministry of Health in Zambia has already demonstrated strong interest to further expand this intervention and is implementing the programme in two provinces with the highest maternal death rates.

The British Government through the Department of International Development (DFID) expressed interest in funding the scaling up of the intervention. We have worked with the Ministry of Health in Zambia together with UNICEF, WHO and the Tropical Health & Education Trust (THET) to develop a scaling-up proposal and strategy and we have submitted it for funding both to DFID and the Bill & Melinda Gates Foundation.

Dr Mukonka was invited to present research at several key development meetings for Africa, including:

- African Union International Conference on Maternal, Newborn, and Child Health in Africa, Johannesburg, South Africa, August 2013.
- WHO African Region Task Force on Reproductive, Maternal, Newborn, Child and Adolescent Health induction meeting, Congo Brazzaville, April 2014.
- Global Countdown to 2015 MDGs for maternal, newborn and child health conference, Johannesburg, South Africa, July, 2014.

He also received an invitation from WHO to present at the Global Women Deliver 2016 Conference in Copenhagen, Denmark. Women Deliver is a global advocacy organisation bringing together voices from around the world to call for action to improve the health and well being of girls and women.

Dr Mukonka was appointed to serve on the WHO African Region Task Force on Reproductive, Maternal, Newborn, Child and Adolescent Health 2014-2017. He was also elected as Secretary of the Task Force.

## Future Impact

The stated longer-term plan of the Ministry of Health in Zambia is to roll out the programme across rural areas in Zambia with support from partners (WHO, UNICEF, UNFPA, USAID, DFID and World Bank) The primary outcome of this research was to identify and relieve a primary barrier to institutional delivery. The ultimate goal is to reduce the maternal mortality rate. The primary beneficiaries of this intervention are pregnant women and their newborn children in rural areas of Zambia and potentially in other African countries.



Chief addressing Headmen (one headman per village) about the trial



Mother-baby delivery pack provided to pregnant women who attended for institutional delivery

## REFERENCES

### Awards

- 1) Best overall oral presentation at the 3rd Irish Congress of Obstetrics, Gynaecology & Perinatal Medicine held in Dublin, May 2015.
- 2) Awarded the Inaugural Ann Ward Medal, Irish Perinatal Society North-South spring conference, Drogheda, Ireland, February 2016.
- 3) Awarded first prize for oral presentation in the Global Health Stream at the World Congress of the Royal College of Obstetricians & Gynaecologists, Birmingham, UK, June 2016.

### Submitted Articles

- 1) Community Intervention trial of non-financial incentives to improve health facility deliveries in rural Zambia: A step towards reducing maternal mortality.
- 2) Male perceptions and involvement in childbirth - key for reducing maternal mortality in rural Zambia.

### Oral presentations/publications (International)

- 1) V Mukonka, FM McAuliffe, O Babaniyi, S Malumo, C Sialubanje, P Fitzpatrick. Addressing Zambia's high maternal mortality ratio through improved institutional deliveries in rural areas by provision of non-financial incentives. Royal College of Obstetricians & Gynaecologists World Congress, Birmingham, June 2016.
- 2) V Mukonka, FM McAuliffe, O Babaniyi, S Malumo, C Sialubanje, P Fitzpatrick. Addressing hidden barriers to institutional deliveries - key intervention for reducing maternal mortality in rural Zambia, XXI FIGO World Congress of Gynecology & Obstetrics, October 2015, Vancouver, Canada.
- 3) V Mukonka, FM McAuliffe, O Babaniyi, S Malumo, C Sialubanje, P Fitzpatrick. Addressing hidden barriers to institutional deliveries - a key intervention for reducing maternal mortality in rural Zambia, 9th European Congress on Tropical Medicine and International Health, September 2015, Basel, Switzerland.

### Oral presentations/publications (National)

- 1) Mukonka V, M McAuliffe F, Babaniyi O, Sarai Malumo S, Sialubanje C, Fitzpatrick P. Zambia's high maternal mortality ratio: providing evidence for change. Irish Perinatal Society February 2016.
- 2) V Mukonka, FM McAuliffe, O Babaniyi, S Malumo, C Sialubanje, P Fitzpatrick Addressing low institutional deliveries in rural Zambia - A key intervention for reducing high maternal mortality ratio, Jacqueline Horgan Bronze Medal Prize, Royal Academy of Medicine in Ireland, Section of Epidemiology and Public Health Medicine, November 2015, RCPI Dublin, Ireland.
- 3) V Mukonka, FM McAuliffe, O Babaniyi, S Malumo, C Sialubanje, P Fitzpatrick Addressing hidden barriers to institutional deliveries - a key intervention for reducing maternal mortality in rural Zambia, 59th Annual Scientific meeting, Society for Social Medicine, 2 - 4th September 2015, Dublin, Ireland.
- 4) V Mukonka, FM McAuliffe, O Babaniyi, S Malumo, C Sialubanje, P Fitzpatrick. Increasing institutional deliveries by skilled birth attendants through addressing hidden costs in rural Zambia, 3rd Irish Congress of Obstetrics, Gynaecology & Perinatal Medicine, May 2015, Dublin, Ireland.
- 5) V Mukonka, FM McAuliffe, Pa Fitzpatrick. Improving Institutional Deliveries in Rural Zambia, Global Health Seminar, Trinity College Dublin, 16th October 2013.

### Invited Presentations

- 1) Mukonka V, Fitzpatrick P. Addressing Hidden Barriers to Institutional Deliveries - A key intervention for reducing maternal mortality in poor rural Zambia, Global Countdown to 2015 MDGs for maternal, newborn and child health conference, Johannesburg, South Africa, July 2014.
- 2) Mukonka V, Fitzpatrick P. Improving Institutional Deliveries in Rural Zambia by addressing hidden barriers, Universitas 21 European Millennium Development Goals Workshop, UCD, June 2014.
- 3) Mukonka V. Addressing Hidden Barriers to Institutional Deliveries - A key intervention for reducing maternal mortality in poor rural Zambia, World Health Organisation African Region Task Force on Reproductive, Maternal, Newborn, Child and Adolescent Health induction meeting, Congo Brazzaville, April 2014.
- 4) Mukonka V. Improving Institutional Deliveries in Rural Zambia, African Union International Conference on Maternal, Newborn, and Child Health in Africa, Johannesburg, South Africa, August 2013.

### Poster Presentations

- 1) Mukonka V, McAuliffe F, Babaniyi O, Sialubanje C, Fitzpatrick P. Improving Institutional Deliveries in Rural Zambia, Faculty of Public Health Medicine Summer Scientific Meeting, RCPI, May 2014, RCPI, Dublin, Ireland.
- 2) Mukonka V, McAuliffe FM, Babaniyi O, Mwanza J, Fitzpatrick P. Male perceptions and involvement in childbirth - key for reducing maternal mortality in rural Zambia, Faculty of Public Health Medicine Summer Scientific Meeting, May 2015, RCPI, Dublin, Ireland.