Implementation research in action:

Increasing facility based delivery and reducing HIV-related complications in Mashonaland Central, Zimbabwe

K Webb[1], G Mujaranji[1], A Chari[1], A Mulingwa[2], C Tshuma[2], D Patel[1], E Kennedy[3], F Cowan[4], B Engelsmann[1]

[1]Organisation for Public Health Interventions and Development (OPHID) Trust, Harare, Zimbabwe
[2]Zimbabwean Ministry of Health and Child Care
[3]Burnet Institute, Melbourne, Australia
[4]University College London, UK

Contact: kwebb@ophid.co.zw

AIDS 2014 STEPPING UP THE PACE

Background

- More than 40% of maternal and newborn deaths and still births occur within 24 hours of delivery.[1]
- Zimbabwe's maternal mortality ratio is 470 [270-790] per 100 000.[2]
- 2/3 of childhood deaths occur within first month of life.[3]
- HIV prevalence among women attending ANC of 16.1% and HIV is the leading cause of maternal death in Zimbabwe.[3,4]
- Home delivery increases risk of vertical transmission and non-adherence to ARVs.[5,6]
- 48% of women in Mashonaland Central Province deliver their infants at home.[3]
- Limited evidence in Zimbabwe regarding the barriers and facilitators for institutional delivery and effective interventions to increase demand and uptake of underutilised services along the PMTCT cascade.
- OPHID Trust undertook an action research approach in Mashonaland Central Province with the objective of:
  1. Identifying facilitators and barriers to institutional delivery;
  2. Developing appropriate responses to increase maternal health service uptake, including PMTCT services; and
  3. Conduct embedded impact evaluation of interventions to increase uptake of services along the PMTCT cascade.

Description

- In 2011, OPHID initiated a process of action research in Mashonaland Central Province Zimbabwe (Figure 1) involving rural pregnant women, community and health system stakeholders to understand and address problem of high rates of home delivery.
- Action research approach intended to develop evidence-based response to improve uptake of facility birth and complementary services along the PMTCT cascade.
- Mixed methods including household survey of women who deliver at home, focus group discussions, key informant interviews, policy and literature review were employed.

Action research involves community-based, co-operative enquiry with the purpose of improving *conditions* and *practices* in specific healthcare contexts.[7]

Figure 1. Regions of Zimbabwe

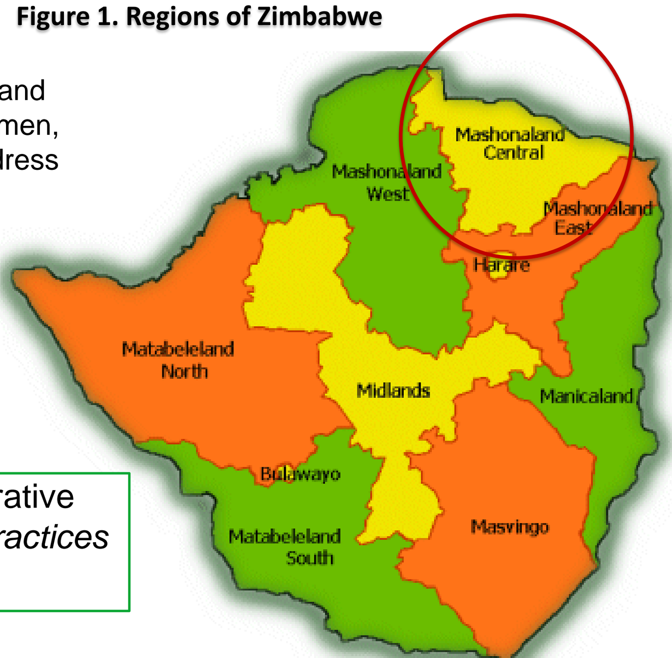


Figure 2. Action Research Spiral

Start with experience of rural women:
- Home Delivery Study (2011-2012)

PROBLEM:
- HIV prevalence in ANC 16.1%
- 48% home delivery

1

2 Add new information and theory, look for patterns:
- Literature review
- Provincial and District Stakeholder Engagement
- National policy direction

3 Participatory Intervention Design (2012):
- Provincial geographic prioritisation: Rushinga District
- District and community planning workshops
- Focus group discussions rural women and traditional leaders

4 Practice skills, strategize and plan for action (2013):
- Baseline assessment
- M&E Framework
- Targeted assessments
- Impact evaluation design

5 Apply in action and generate evidence for impact on uptake and health outcomes (2013-2015):
- Family Friendly Maternity Waiting Homes
- Action Birth Card

Adapted from Loewenson et al, 2010.

Lessons Learned

Figure 2 demonstrates Action Research Spiral employed by OPHID Trust in collaboration with Zimbabwean Ministry of Health and Child Care from 2011-2014.

1 **Home Delivery Study (2011):** Descriptive retrospective study of 355 women who delivered at home to document barriers and facilitators to facility delivery.
- Majority of women lived in rural setting (81%), had minimal education (61% primary highest level attained), few household resources and described having low social support (100% of women only stayed in same household with partners on weekends or less frequently), but 96.7% had dependent children to care for.
- *Top 5 ranked reasons for home delivery*: 1. Service fees (41%); 2.Distance to health facility (18.3%) and 'Baby came too fast to travel (18.3%); 3. Did not recognise signs of true labour (6.2); and 5. Time of day made it impossible to travel (4.8%)
- Top 5 ranked preferences for interventions for future facility delivery:1.Fee support (37.5%); 2. Use of maternity waiting home (27.2%); 3. Assistance with transport (14.4%); 4. No preference (9.2%); and 5. Information/planning assistance (5.3%)

2 **New information and theory - look for patterns (2011-2012):** *Presentation and feedback on Home Delivery Study findings*: National and Provincial Zimbabwe Ministry of Health and Child Care forums, IAS 2012 Session: Challenges in scaling up PMTCT, University College London
- *Review of national policy and program direction in Zimbabwe for PMTCT and supporting maternal and child health*: Zimbabwe National Maternal and Neonatal Health Road Map 2007-2015, National Strategic Plan for Elimination of New Paediatric HIV Infections: 2011 – 2015, Zimbabwe Health Transition Fund (2012-2015)
- *Integrate evidence-base/theory on maternal health service utilisation:* Behavioural model for vulnerable populations[8], Three Delays[9], behavioural economics[10]. Evidence regarding intervention effectiveness for improving maternal and infant morbidity and mortality, identification of gaps.

3 **Participatory intervention design (2012-2013):**
- *Key informant interviews and focus group discussions with stakeholders at multiple levels:* **National**: policy direction and priorities; **Provincial**: prioritise intervention components based on Home Delivery Study findings, identify priority District for intervention; **District (Rushinga)**: identify priority sites based on home delivery rates and refine and contextualize intervention strategy; **Community**: participatory planning with healthcare workers, local leaders and women of reproductive age at site level.
- *2 primary intervention components consistent with identified needs and preferences of mothers, health system plans*: 1) **Family Friendly Maternity Waiting Homes**: Residential facilities where women can wait before giving birth at a hospital or health centre; preferred intervention by women in Home Delivery Study facing distance as barrier; 'Family friendly' component allowed for dependent children under 2yrs to stay with mothers and male partners and family to visit. **2) Action Birth Card**: Planning tool promoting community mobilisation to support uptake of underutilised maternal health services: Early antenatal (ANC) care booking. HIV test during pregnancy, 4+ ANC visits, Develop birth plan, Deliver in a health facility, Prompt postnatal care (Figure 3).

4 & 5

Lessons Learned

Practice skills, strategize and plan for action, apply in action & generate evidence for impact (2012-1015)
- *Pre-testing and targeted assessments* conducted to contextualize and refine intervention components prior to implementation:
- *Focus group discussions at rural health clinics*: Defining 'family friendly' maternal health services/maternity waiting homes among rural women, Context-specific barriers to service uptake at each site; Acceptability, feasibility of content and approach of the Action Birth Card.
- *Stakeholder workshops with health authorities and comprehensive, district-wide baseline* identified gap in health care worker training for basic emergency obstetric and newborn care at rural health sites. Intervention design modified to include training and mentorship of rural healthcare workers in BeMONC.
- *Continuous data collection* and review of key indicators within M&E framework for real-time adjustments to project activities has engaged District, Site and Community Health Workers to identify barriers to optimal implementation and act in real-time.
- *Stepped-wedge roll-out* of intervention to health sites to enable impact evaluation. To date, 5 Family Friendly Maternity Waiting Homes have been established and 5, 000 Action Birth Cards distributed to rural women in Rushinga District. Preliminary evidence from early implementation sites indicate significant increase in uptake of facility delivery from pre-intervention.

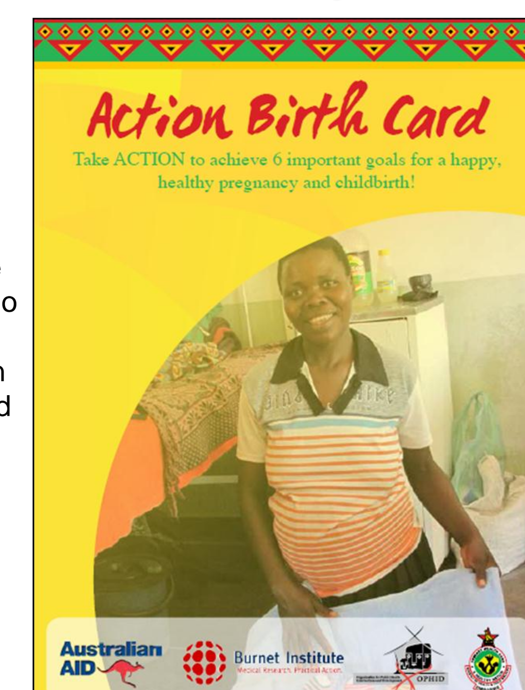
Conclusions

Action research approach has contributed to the development of previously unavailable evidence to understand barriers and intervention preferences for uptake of institutional delivery and other underutilised services along the PMTCT cascade by rural women in Mashonaland Central Province.

The approach has improved the evidence-based response for increasing facility based delivery in the intervention District. Specifically, the Action Research approach has enabled:
- **Identification of intervention components** through inclusive participatory process from national stakeholders to women who deliver at home.
- **'Real-time' refinements to intervention strategies** based on current evidence such as introduction of BeMONC training and clinical mentorships in response to MNCH training gaps.
- **Impact evaluation** using implementation science methods: contribute to evidence base for interventions to increase retention across PMTCT cascade and inform decisions for transition to scale.

Action research approach requires highly engaged partnerships with multiple stakeholders, and flexible programming to accommodate for continuous reflection and refinement of strategies.

Figure 3. Action Birth Card Community Mobilisation and Planning Tool



Capacity building of local implementing organisations such as OPHID Trust in the use of implementation research methodologies has the potential to transform standard operational practices into significant contributions to the evidence-based response to HIV in high-burden, low resource settings.

Literature cited

[1]Samarasekera U, Horton R. The world we want for every newborn child. Lancet. 2014. Epub 2014/05/24.
[2]WHO, UNICEF, UNFPA, The World Bank, and United Nations: Maternal mortality in 1990-2013.Population Division Maternal Mortality Estimation Inter-Agency Group Zimbabwe Brief; 2014.
[3](ZIMSTAT) ZNSA. 2010-2011 Zimbabwe Demographic and Health Survey(2010-2011 ZDHS). Harare: June 2011.MoHCW. 2013.
[4]Munjanja S NL, Nyandoro M and Magwali T. Zimbabwe Maternal and Perinatal Mortality Study Harare: Ministry of Health and Child Welfare, 2007.
[5]Albrecht S, et al. Predictors of nonadherence to single-dose nevirapine therapy for the prevention of mother-to-child HIV transmission. J Acquir Immune Defic Syndr. 2006 Jan 1;41(1):114-8.
[6]Temmerman M, Quaghebeur A, Mwanyumba F, Mandaliya K. Mother-to-child HIV transmission in resource poor settings: how to improve coverage? AIDS. 2003 May 23;17(8):1239-42.
[7]Koshy E, Waterman H, Koshy V: Action research in healthcare. Los Angeles, Calif.: SAGE; 2011.
[8] Gelberg L, Andersen RM, Leake BD: The Behavioral Model for Vulnerable Populations: application to medical care use and outcomes for homeless people. Health services research 2000, 34(6):1273-1302.
[9]Darmstadt GL, et al: 60 Million non-facility births: who can deliver in community settings to reduce intrapartum-related deaths? International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics 2009, 107 Suppl 1:S89-112.
[10] Buttenheim AM, Asch DA: Behavioral economics: the key to closing the gap on maternal, newborn and child survival for Millennium Development Goals 4 and 5? Maternal and child health journal 2013, 17(4):581-585.

Acknowledgments

Components of this research have been supported by the Australian Government through the Burnet Institute.

Presented at AIDS 2014 – Melbourne, Australia

Australian Aid | Burnet Institute Medical Research. Practical Action. | OPHID