Institution: London School of Hygiene & Tropical Medicine (LSHTM)

Unit of Assessment: UoA2 – Public Health, Health Services & Primary Care

Title of case study: Preventing HIV in African adolescents

1. Summary of the impact

During the 1990s, LSHTM researchers documented a steep rise in HIV prevalence among young people between the ages of 15 and 24 in eastern and southern Africa. Subsequent trials in Tanzania and Zimbabwe examined the effectiveness of interventions to reduce HIV incidence among this age group. The results, and subsequent reviews, have substantially influenced the HIV policies of international organisations such as UNICEF, UNESCO and WHO, and HIV programmes in individual African countries. In particular, findings on knowledge and attitude change through sexual health education have been widely implemented.

2. Underpinning research

Young people remain at the centre of the global HIV/AIDS epidemic, with 15–24-year-olds accounting for 50% of new cases in developing countries. There is increasing recognition that for anti-HIV interventions to work, they must be tailored to meet the local circumstances of young people.

LSHTM has been at the forefront of global research on approaches to improve sexual and reproductive health, and prevent HIV, among youth (15–24 years) in Africa. In the 1990s, population-based HIV prevalence surveys in sub-Saharan African countries, led by Richard Hayes (Professor of Epidemiology & International Health, LSHTM since 1978, then Research Fellow) and others, highlighted a relatively low prevalence of HIV and other STIs in 15–19-year-olds but a dramatic increase in prevalence in 20–24-year-olds. There was a clear need for sexual and reproductive health (SRH) interventions targeted specifically at youth.

Two major collaborative intervention programmes were subsequently conducted by Hayes, David Ross (Professor of Epidemiology and Public Health, LSHTM since 1983, then Research Fellow) and others, with collaborators from University College London, Tanzania and Zimbabwe. These included randomised controlled trials conducted between 1997 and 2008, named MEMA kwa Vijana in Tanzania and Regai Dzive Shiri in Zimbabwe. They showed that it was feasible to implement high-quality interventions in schools, health facilities and the community using government employees and/or youth volunteers, and to scale these up. The trials also showed that these interventions had a substantial and sustained impact on young people's SRH knowledge and self-reported attitudes to sexual risks, and on key self-reported sexual risk behaviours. However, there was no consistent impact on pregnancy or HIV rates, which highlighted the importance of including biomedical evidence in trials.[3.1, 3.2, 3.3]

HALIRA, a comprehensive qualitative study carried out in 1999–2002 alongside the Tanzanian trial (in collaboration with the Medical Research Council's Social and Public Health Sciences Unit and the National Institute for Medical Research, Tanzania) highlighted key societal and social barriers to sexual behaviour change among young people. The findings showed that societal norms predispose against young people avoiding risky sex, for example by condoning and even encouraging transactional sex; for young women, exchanging sex for gifts or support is seen as normal and acceptable.[3.4]

Hayes, Ross and colleagues subsequently used data from the Tanzanian and Zimbabwean trials, along with other data from South Africa, Zimbabwe and Uganda, to show a lack of association between reported adolescent risk behaviours and adolescent HIV prevalence. These findings suggest that it is primarily sex with adults rather than each other that puts adolescents at risk, and so future interventions should include adults.[3.5]

Meanwhile, Ross and colleagues (in collaboration with WHO) led the 'Steady…, Ready…, Go!' reviews published in 2006 for the UN Inter-Agency Task Team for Young People. These examined

what kinds of interventions work to prevent HIV infection among youth in low- and middle-income countries. Among the interventions graded as Go! (i.e. to be implemented widely) were curriculum-based programmes in schools and interventions run through existing community structures. LSHTM updated three of the key reviews for sub-Saharan Africa in 2011.[3.6]

3. References to the research

3.1 Ross, DA, Changalucha, J, Obasi, AIN, Todd, J, Plummer, ML, Cleophas-Mazige, B, Anemona, A, Everett, D, Weiss, HA, Mabey, DC, Grosskurth, H and Hayes RJ (2007) Biological and behavioural impact of an adolescent sexual health intervention in Tanzania: a community-randomized trial, *AIDS*, 21(14): 1943–1955, doi: 10.1097/QAD.0b013e3282ed3cf5. Citation count: 95

3.2 Doyle, AM, Ross, DA, Maganja, K, Baisley, K, Masesa, C, Andreasen, A, Plummer, ML, Obasi AIN, Weiss, HA, Kapiga, S, Watson-Jones, D, Changalucha, J and Hayes RJ for the MEMA kwa Vijana Trial Study Group (2010) Long-term biological and behavioural impact of an adolescent sexual health intervention in Tanzania: follow-up survey of the community-based MEMA kwa Vijana Trial, *PLoS Medicine*, 7(6): e1000287, doi: 10.1371/journal.pmed.1000287. Citation count: 23

3.3 Cowan, FM, Pascoe, SJ, Langhaug, LF, Mavhu, W, Chidiya, S, Jaffar, S, Mbizvo, MT, Stephenson, JM, Johnson, AM, Power, RM, Woelk, G and Hayes, RJ on behalf of the Regai Dzive Shiri trial team (2010) The Regai Dzive Shiri project: results of a randomized trial of an HIV prevention intervention for youth, *AIDS*, 24(16): 2541–2552, doi: 10.1097/QAD.0b013e32833e77c9. Citation count: 13

3.4 Wamoyi, JM, Wight, D, Plummer, M, Mshana, GH and Ross, D (2010) Transactional sex amongst young people in rural northern Tanzania: an ethnography of young women's motivations and negotiation, *Reproductive Health*, 7(2), doi:10.1186/1742-4755-7-2. Citation count: 19

3.5 Chapman, R, White, RG, Shafer, LA, Pettifor, A, Mugurungi, O, Ross, D, Pascoe, S, Cowan, FM, Grosskurth, H, Buve, A and Hayes, RJ (2010) Do behavioural differences help to explain variations in HIV prevalence in adolescents in sub-Saharan Africa?, *Tropical Medicine and International Health*, 15(5): 554–566, doi: 10.1111/j.1365-3156.2010.02483.x. Citation count: 10

3.6 Napierala Mavedzenge, SM, Doyle, AM and Ross, DA (2011) HIV prevention in young people in sub-Saharan Africa: a systematic review, *Journal of Adolescent Health*, 49(6): 568–586, doi: 10.1016/j.jadohealth.2011.02.007. Citation count: 8

Key grants

Hayes, MEMA kwa Vijana Trial, European Commission, 1997–2002, €3m and Irish Aid, 2001–2002, €948,000.
Ross, Wight and Changalucha, HALIRA Programme, MRC, 1999–2004, £844,000.
Ross, MEMA kwa Vijana Trial Further Survey, DFID and Irish Aid, 2006–2009, £1.85m.
Ross, Review of Effectiveness of Interventions for HIV Prevention, Treatment and Support. UNICEF, 2013, US$137,000.

4. Details of the impact

The research described has had a direct impact on the HIV-related policies of both international organisations and national governments in Africa. Findings on knowledge and attitude change through education in particular have been widely implemented.

UNESCO's 2009 *International Technical Guidance on Sexuality Education* drew heavily on the evidence from the Tanzanian and Zimbabwean trials and the Steady.., Ready…, Go! reviews, highlighting the MEMA kwa Vijana results as 'particularly interesting' while picking up on its caveat that education and community-based programmes alone are not sufficient to bring HIV incidence down.[5.1] In 2010, comprehensive HIV knowledge among 80% of young people was agreed as the

first 'bold result' of the UNAIDS *Business Case on Empowerment of Young People for HIV Prevention*. To help countries achieve this result, the UNAIDS Inter-Agency Task Team on HIV and Young People agreed in 2011 to focus their efforts on sexuality education in schools. The two trials were influential in these global policy moves.[5.2] The new UNAIDS Strategy for 2011–2015 points to the need for expanded provision of effective school-based sexuality education.[5.3]

The MEMA kwa Vijana intervention materials were introduced into schools in Tanzania, Zambia and Zimbabwe in the early 2000s, and roll-out continued between 2008–2013.[5.3] The materials are approved for use in primary schools in Tanzania, where they are published in Swahili, and are freely available in both English and Swahili on the MEMA kwa Vijana website.[5.4] They were also the first HIV prevention educational materials to be featured in the Global HIV Archive in 2012.[5.5] Two reviews for UNESCO stressed the importance of these two trials and specifically highlighted the MEMA kwa Vijana trial. SIECUS (Sexuality Information and Education Council of the United States), in its *Global Vision: Promising Resources From Around the World* (2008) describes MEMA kwa Vijana as 'innovative' and highlights the features of its training package.[5.6] MEMA kwa Vijana's results were also important evidence used for the WHO guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries (2011),[5.7] and the key UNICEF *Opportunity in Crisis* document (2011) endorsed MEMA kwa Vijana and Regai Dzive Shiri as 'successful in changing attitudes'.[5.8]

Ministries of Health in Tanzania, Uganda and Kenya have accepted the two programmes' joint policy recommendations that educational interventions will need to be combined with both biomedical and structural measures to change social and sexual norms. Global health-related agencies such as UNESCO, WHO, UNICEF and UNAIDS have also used the recommendations, with UNICEF's *Fourth Stocktaking Report on Children and HIV* citing the policy brief based on these projects.[5.9]

The results of the Steady.., Ready…, Go! reviews have been used extensively by policy-makers and programme implementers in international agencies and governments to focus their priorities on 'Go!' and 'Ready' interventions – those that should be implemented forthwith without needing further evidence, and those that should be implemented with careful evaluation.[5.2, 5.10] Senior UNICEF staff have quoted the reviews to justify their priorities, including Geeta Rao Gupta, Deputy Executive Director at the International AIDS Conference in July 2012.[5.10] A 2012 LSHTM-UNICEF review of the national response to prevent HIV among young people in 20 high-prevalence countries found that the programme with the strongest evidence and thus designated as 'Go!' in the review – in-school interventions that are adult-led and curriculum-based – was the most widely-implemented youth prevention strategy across countries.[5.10]

Presentations of the research to policy-makers and health practitioners have helped raise awareness and understanding of the research findings. Ross presented findings from the MEMA kwa Vijana trial and the systematic reviews at numerous UN and other meetings, including the Annual Meeting of HIV Program Focal Points from Ministries of Education in Sub-Saharan Africa, Dakar, Senegal, December 2008 (over 50 participants from 30 countries); and an expert consultation at the International Centre for Research on Women, Washington DC, May 2011 (over 50 participants from international organisations, funding agencies and governments).

Ross has also been influential as the Chair of the Technical Steering Committee of the WHO's Department of Maternal, Newborn, Child and Adolescent Health,[5.2] on the UNAIDS Monitoring and Evaluation Reference Group, and as an academic lead on the new *Lancet* Commission on Adolescent Health and Wellbeing.[5.2]

In July 2013, Ross and colleagues presented their latest review of global evidence on the effectiveness of interventions for HIV prevention, treatment and care to UNICEF (48 participants, including UNICEF staff, government adolescent health focal persons, etc.) and these have been used as a central piece in UNICEF's new operational guidance on adolescents and HIV.[5.10]

5. Sources to corroborate the impact

5.1 UNESCO (2009) *International Technical Guidance on Sexuality Education: An Evidence-informed Approach for Schools, Teachers and Health Educators*. Paris: UNESCO, http://hivaidsclearinghouse.unesco.org/fileadmin/user_upload/pdf/2009/20091210_international_guidance_sexuality_education_vol_1_en.pdf (accessed 16 October 2013) (this review highlighted the MEMA kwa Vijana Trial in Box 4 on p. 16).

5.2 Scientist, Maternal, Newborn, Child & Adolescent Health Dept (MCA), WHO.

5.3 UNAIDS (2010) *Getting to Zero: 2011–2015 Strategy*, http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2010/JC2034_UNAIDS_Strategy_en.pdf (accessed 16 October 2013) (see particularly p. 32).

5.4 MEMA kwa Vijana (2008) *Teacher's Guides*, http://memakwavijana.org/materials-and-resources/teachers-guides.html (accessed 16 October 2013) (this web page had been accessed 457 times as of June 2013).

5.5 *MEMA kwa Vijana Program: Good Things for Young People,* Global HIV Archive, http://www.socio.com/globalhivarchive/GHA07.php. (accessed 17 October 2013) (featured in Archive from 2012, this website selects and then archives the most important and best evaluated interventions for HIV prevention globally).

5.6 Sexuality Information and Education Council of the United States (SIECUS) (2008) *Global Vision: Promising Resources from Around the World,* http://www.siecus.org/index.cfm?fuseaction=Feature.showFeature&featureID=1154&noheader=1 (accessed 16 October 2013) (this initiative provides 'an online resource that connects educators and program planners with the latest, most compelling, international sexuality education, HIV and AIDS prevention, and sexual and reproductive health interventions and practices').

5.7 WHO (2011) *WHO Guidelines on Preventing Early Pregnancy and Poor Reproductive Outcomes Among Adolescents in Developing Countries*. Geneva: WHO, http://whqlibdoc.who.int/publications/2011/9789241502214_eng.pdf (accessed 16 October 2013) (specifically see refs #13 and 15 for Outcome 3, 'Increase use of contraception by adolescents at risk of unintended pregnancy', p. 68).

5.8 UNICEF, UNAIDS, UNESCO, UNFPA, ILO, WHO and World Bank (2011) *Opportunity in Crisis: Preventing HIV from Early Adolescence to Young Adulthood,* UNICEF, http://www.unicef.org/publications/index_58708.html (accessed 16 October 2013) (see particularly pp. 17/18 and their ref. #81).

5.9 UNICEF, UNAIDS, WHO and UNFPA (2009) *Children and AIDS: Fourth Stocktaking Report*. New York: UNICEF, http://www.unicef.org/publications/files/Children_and_AIDS_Fourth_Stocktaking_Report_EN_110609.pdf (accessed 16 October 2013) (see particularly ref. #54, p. 17).

5.10 Senior Specialist/Team Leader, HIV (Adolescents), UNICEF HQ.