

Huge decline in HIV rates in Zimbabwe driven by fear of infection

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The big drop in the numbers of people infected with HIV in Zimbabwe is because of mass social change, driven by fear of infection, according to an international study reported recently in the journal *PLoS Medicine*.

A major investigation of the reasons why HIV prevalence in Zimbabwe has fallen from 29% in 1997 to 16% in 2007 was carried out by epidemiologists at Imperial College, London, and Harvard University School of Public Health, Boston, in partnership with the Zimbabwean Ministry of Health, the UN Population Fund and UNAIDS.

The research included extensive analysis of epidemiological data, together with focus groups and key informant interviews, to test different explanations for the dramatic decline in prevalence. Although HIV prevalence remains high, even by African standards, the fall in HIV prevalence that has taken place in Zimbabwe is the largest seen anywhere in sub-Saharan Africa.

HIV incidence – the number of new infections taking place each year – also fell markedly, especially after 2000, from 5 infections per 100 persons per year to fewer than 2 infections per 100 persons per year in 2010.

Professor Simon Gregson, from the School of Public Health at Imperial College, London, and senior investigator on the study, said: 'Given the continuing, and worrying, trend for high HIV/AIDS infection rates in many sub-Saharan African countries, we felt it was important to understand why the disease has taken a such a dramatic downturn in Zimbabwe. Very few other countries around the world have seen reductions in HIV infection, and of all African nations, Zimbabwe was thought least likely to see such a turnaround. This is why there was such an urgent need to understand its direct and underlying causes.'

Past speculation that the economic crisis in Zimbabwe and consequent migration out of

the country might have contributed to the decline in HIV prevalence is dismissed as an explanation by the researchers. They point out that the financial crisis did not begin to bite until after 2002, when changes in behaviour were well underway.

For migration to explain the big fall in prevalence, they say, the majority of emigrants would need to be HIV infected, yet in the UK, HIV prevalence among pregnant women from Zimbabwe peaked at 12% in the early 2000s, less than half the level recorded among women still living in Zimbabwe.

Condom use does not appear to have risen substantially after 1999 (Zimbabwe already had a high level of condom use by the mid-1990s), and continued to be low in regular partnerships.

What drove the change, researchers now agree, was the big increase in AIDS deaths after the mid-1990s. Deaths peaked between 2000 and 2005 in Zimbabwe, and focus groups agreed that the critical factor in changing individual behaviour had been seeing someone die of AIDS. This made people fearful of contracting HIV, and led to a reduction in the number of casual partners.

For example, focus groups told researchers that major changes in norms of sexual behaviour began to take place in Zimbabwe from the late 1990s, such that visiting sex workers or getting a sexually transmitted infection was considered shameful rather than a badge of masculine pride.

This is backed up by evidence from a number of surveys showing a decline in multiple sexual partners between 1998 and 2005, together with a decline in the number of men who reported paying for sex.

The decline in HIV prevalence may have been greater in Zimbabwe than in other countries of the region because of high levels of both education and marriage, especially among urban men, who exhibited the greatest degree of behaviour change. Sixty per cent of urban men aged 17 - 43 were married in Zimbabwe in 2005, compared with less than 20% in Namibia, Mozambique and Botswana in surveys between 2000 and 2003.

Similarly, over 80% of Zimbabwean men aged 17 - 43 had received some secondary education, compared with 50% in Malawi and around 60% in Botswana and Zambia. Education helped people to understand and accept messages about HIV transmission and prevention, while marriage helped people to act on the 'be faithful' messages included in prevention campaigns. Zimbabwe has a higher rate of marriage than most neighbouring countries.

The comprehensive nature of prevention activities may also have helped, the researchers suggest. Although respondents failed to identify a specific prevention activity that influenced their behaviour, the researchers speculate that the combination of activities resulted in a 'tipping point' that encouraged widespread change. Messages about HIV were widespread in popular culture in the late 1990s.

Home-based care for people with AIDS promoted by the government may also have influenced society, because more people saw relatives or neighbours die at home as a result. In contrast, people with AIDS in Botswana received hospital care.

The researchers say that partner reduction played a crucial role and needs to play a central part in prevention campaigns. In Zimbabwe public and private sector prevention activities are now giving stronger warnings about multiple and concurrent partners, and this model has been followed in Swaziland.

Dr Timothy Hallett, also from the School of Public Health at Imperial College, London, and an investigator on the study, said: 'The HIV epidemic is still very large, with more than one in ten adults infected today. We hope that Zimbabwe – and other countries in southern Africa – can learn from these lessons and strengthen programs to drive infections down even further.'

Halperin DT, *et al.* A surprising prevention success: Why did the HIV epidemic decline in Zimbabwe? *PLoS Medicine* 8(2):e1000414.

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