Prevention of mother to child transmission of HIV: evaluation of a pilot programme in a district hospital in rural Zimbabwe

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Quality improvement report

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Abstract

Problem Zimbabwe has one of the highest rates of HIV seroprevalence in the world. In 2001 only 4% of women and children in need of services for prevention of mother to child transmission of HIV were receiving them.

Design Pilot implementation of the first programme for prevention of mother to child transmission of HIV in rural Zimbabwe.

Setting 120 bed district hospital in Buhera district (285 000 inhabitants), Manicaland, Zimbabwe.

Key measures for improvement Programme uptake indicators monitored for 18 months; impact of policy evaluated by assessing up-scaling of programme.

Strategies for change Voluntary counselling and testing services for HIV were provided in the hospital antenatal clinic. Women identified as HIV positive and informed of their serostatus and their newborn were offered a single dose antiretroviral treatment of nevirapine; mother-child pairs were followed up through routine health services. Nursing staff and social workers were trained, and community mobilisation was conducted.

Effects of change No services for prevention of mother to child transmission of HIV were available at baseline. Within 18 months, 2298 pregnant women had received pretest counselling, and the acceptance of HIV testing reached 93.0%. Of all 2137 women who had an HIV test, 1588 (74.3%) returned to collect their result; 326 of the 437 HIV positive women diagnosed had post-test counselling, and 104 (24%) mother-child pairs received nevirapine prophylaxis.

Lessons learnt Minimum staffing, an enhanced training programme, and involvement of district health authorities are needed for the implementation and successful integration of services for prevention of mother to child transmission of HIV. Voluntary counselling and testing services are important entry points for HIV prevention and care and for referral to community networks and medical HIV care services. A district approach is critical to extend programmes for prevention of mother to child transmission of HIV in rural settings. The lessons learnt from this pilot programme have contributed to the design of the national expansion strategy for prevention of mother to child transmission of HIV in Zimbabwe.

Background

In 2003 an estimated five million people worldwide were newly infected with HIV. Approximately 800 000 of these were children; 90% of them were born to HIV infected women and acquired the virus during pregnancy, labour, or delivery or through breast feeding.[1 2] Zimbabwe has one of the highest rates of HIV infection in the world, with an average antenatal HIV prevalence of 24.6% (20.9% in urban areas and 28.1% in rural areas) in 2003.[3] By 2005, HIV/AIDS is projected to account for 60% of childhood mortality in Zimbabwe.[4] The HIV/AIDS burden coexists with an important economic crisis, limiting access to an already deteriorating public health service.

Voluntary counselling and testing for HIV are essential for all support and treatment interventions against HIV and AIDS. Progress has been made in the prevention of mother to child transmission of HIV in resource poor countries, primarily through the development of short, easy to use, and affordable antiretroviral regimens.[5–8]

Prevention of mother to child transmission of HIV has been an integrated component of the Zimbabwe HIV/AIDS policy since 1999, when urban pilot programmes were initiated.[9] To mitigate the paediatric HIV epidemic in Zimbabwe, countrywide implementation of this initiative is urgently needed.

Context

The Zimbabwe healthcare system, divided into eight provinces and 58 districts, offers five levels of care: health post, health centre, district hospital, provincial hospital, and national hospital. Murambinda Mission Hospital (120 beds) is the acting district hospital for Buhera district within the province of Manicaland. A total of 27 satellite clinics fall into the catchment area of Murambinda Hospital, catering for a rural population of approximately 285 000 people. The hospital is staffed by 22 nurses, one senior nursing sister, one matron, and three government medical officers. In 2002 the hospital managed a total of 3856 antenatal visits (25% of district

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coverage), of which 1049 were first visits, and 1895 deliveries (55% of district coverage). Because of economic constraints, a shortage of basic supplies for comprehensive antenatal care exists, affecting syphilis screening, ferrous sulphate, folate, multivitamin supplementation, and treatment of symptoms of sexually transmitted infections.

Outline of problem

Population based surveys in Manicaland province (1998-2000) report an HIV prevalence of 22.3% for women aged 15 to 29 years.[10] At the end of 2001, only 4% of Zimbabweans in need of services for prevention of mother to child transmission of HIV were receiving them.[11] Although HIV/AIDS was considered a priority at Murambinda Mission Hospital, it had no HIV/AIDS programme including prevention of mother to child transmission of HIV. Unpublished observational data showed that stigma surrounding HIV/AIDS and HIV testing was high. This paper reports on the process and feasibility of implementing a programme for prevention of mother to child transmission of HIV in this district hospital.

Key measures of improvement

We assessed acceptability of the programme among health workers through qualitative observational data. We collected routine monitoring data during the first 18 months of the programme, measuring the following indicators: acceptance of pretest counselling and HIV testing by pregnant women attending antenatal clinic services, post-test counselling rate, prescription and intake of nevirapine to mother-child pairs, and child averted HIV infections. We documented the reasons for women's refusal of voluntary counselling and testing, as well as the acceptability of HIV testing by male partners. We used an assessment of the possibility of up-scaling the programme as a proxy of impact of the policy.

Gathering information

We introduced a coded intervention card documenting progress in mother-child uptake of activities and HIV serostatus in the hospital data collection system. We used pre-existing monitoring tools such as antenatal and delivery registers and defined basic process indicators to monitor the uptake of activities. We entered data on standard forms and managed and analysed them by using Stata 7.0 software.

Community mobilisation among pregnant women at Buhera district, Manicaland, Zimbabwe, 2002

Strategies for change

The main components of the Murambinda Mission Hospital programme for prevention of mother to child transmission of HIV are (*a*) voluntary counselling and rapid HIV testing for all pregnant women attending antenatal care; (*b*) administration of a single dose of nevirapine to the HIV positive mothers informed of their serostatus and their newborns, following the HIVNET 012 regimen[6]; (*c*) post-test counselling and support for mothers to exclusively breast feed for six months, as replacement feeding was not routinely supported; (*d*) continuous follow up of mother-child pairs through routine health services, including provision of cotrimoxazole prophylaxis for opportunistic infections; and (*e*) promotion of these activities in Buhera district. We implemented two key operational strategies: training of nursing staff and social workers (n=40) in HIV counselling and rapid testing; and community mobilisation to enhance adherence to the cascade of activities (figure). Drugs and medical supplies for the hospital maternity unit were enhanced to improve the package of services offered. A procurement system for rapid HIV tests was implemented through the Zimbabwe Ministry of Health, and project personnel were recruited to facilitate the introduction of these new services within the hospital. Participants gave oral consent to participate in the programme.

Effects of change

Murambinda Mission Hospital was the first site to implement a programme for prevention of mother to child transmission of HIV in a rural setting in Zimbabwe. Integration of voluntary counselling and rapid testing within routine antenatal care required adjustment of the patient flow to allow sufficient time and ensure confidentiality of these new services. Involvement of district health authorities was key for the integration and reorganisation of services in a sustainable manner.

During the first 18 months of the programme, 2298 pregnant women had pretest counselling; the acceptance of HIV testing reached 93.0% (n=2137) among these women. Of all women who had an HIV test, 1588 (74.3%) returned to collect their result. Overall HIV prevalence was 20.4% (n=437); 326 (74.6%) of these HIV positive women had post-test counselling, and 104 (23.8%) received complete mother-child prophylaxis with nevirapine. The reasons women gave for refusing testing were mainly related to the need to consult their husband or partner and their wish to think more about being tested.

The rate of return for test results was low. It is, however, consistent with recent findings from other programmes for prevention of mother to child transmission in West Africa and East Africa as well as the Caribbean.[12–16]

The minimum estimate of the coverage of the programme is 23.8%—that is, 104 women-child pairs receiving nevirapine out of a total of 437 HIV infected

pregnant women given a diagnosis. The maximum estimate is 67.5%, considering that 220 women were prescribed nevirapine among 326 HIV positive women who received post-test counselling.

Reduction in stigma has not been formally documented. Nevertheless, participation in the programme and field observations in the community during information, education, and communication sessions indicated that the perceived disincentive for HIV testing, particularly among women, has been decreasing over time.

Follow up of mothers and children during the postnatal period has been one of the most challenging problems owing to centralisation of activities when the programme started and because of poor access to health facilities and limited trained staff. We subsequently considered a plan of action incorporating district satellite health centres in all activities related to prevention of mother to child transmission of HIV and strengthening community outreach programmes. Communication networks among the different levels of the healthcare system were reinforced to ensure appropriate patient flow and referral systems within the district.

Because the programme was planned and developed as a pilot, we used detailed monitoring tools. This enabled collection of quantitative and qualitative data on routine service uptake as well as identification of existing barriers. The information gathered set the basis for defining priorities for operational research, such as assessment of infant feeding options in the context of HIV infection, which is now being done.

On the basis of the lessons from this first pilot rural programme and others, the national AIDS and TB programme of the Zimbabwean Ministry of Health has initiated widespread scaling-up and replication of programmes for prevention of mother to child transmission of HIV to other regions of the country.[17]

Lessons learnt

Minimum staffing levels (nurses, midwives, physicians, and counsellors) with a well defined training programme, as well as the involvement of district health authorities, were needed for the implementation of this relatively successful programme. In our experience, individual counselling remains the only aspect of the overall cascade of activities for prevention of mother to child transmission of HIV that cannot be fully integrated within routine antenatal clinics owing to lack of human resources. Low participation of male partners (2.3% in our experience) creates the need for enhanced community mobilisation, including specific and innovative ways of involving men in programmes for prevention of mother to child transmission of HIV.

Information, education, and communication activities related to HIV prevention and the identification of HIV infected women in the community had an impact on the desire of other family members and the community in general to have access to HIV counselling and testing services. A voluntary counselling and testing centre for the general population was implemented through external funding and in close coordination with this programme and district health authorities. Voluntary counselling and testing services should be important entry points for HIV prevention and care and for referral to community networks and basic HIV medical care services.

Key learning points

- Implementation of programmes for prevention of mother to child transmission of HIV needs minimum health staffing in resource poor settings
- All points of the intervention cascade need to be further improved to increase the coverage of services
- Follow up of mothers and children during the postnatal period is one of the most challenging aspects, especially in rural areas
- A district approach is critical to extend the accessibility and acceptability of programmes for prevention of mother to child transmission of HIV in rural settings
- Improving the continuum of care after delivery for mothers, infants, and their families is a priority for prevention of mother to child transmission of HIV

Next steps

Improving the continuum of care after delivery is a priority for prevention of mother to child transmission of HIV. In close collaboration with the national AIDS and TB programme and other partners, district health authorities are defining a follow up package that includes clinical and psychosocial support protocols, training of health professionals, continued decentralisation of services, and improvement of transport possibilities for community based follow up.

More importantly, the coverage of services for prevention for mother to child transmission of HIV at all points of the intervention cascade needs to be improved. Protocol development combining the introduction of opt-out voluntary counselling and testing, voluntary counselling and testing in labour wards, and prescription of nevirapine to women and children of unknown HIV status are now planned or at least being considered, as has recently been advocated.[18 19] In addition, an enhanced basic package for prevention of mother to child transmission of HIV through the selection of more effective antiretroviral regimens than nevirapine alone could be considered.[20] Access to antiretroviral therapy for HIV infected women and children identified through the programme and for their HIV infected family members is planned in Buhera district on the basis of principles outlined in the "mother-to-child transmission-plus initiative."[21]

The World Health Organization and UNICEF have developed the "integrated management of sick children" initiative to improve survival in children.[22] A comprehensive HIV/AIDS continuum of care, including prevention of mother to child transmission, will need to be incorporated within this powerful public health strategy so as to facilitate sustainability of the management of paediatric HIV infection in communities such as ours.[23]

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A memorable patient

The sincerest form of flattery

A 9 year old girl was admitted to our hospital with prolonged fever for over two months and swellings in the neck. We could offer her only symptomatic treatment while we awaited the results of investigations. Her parents were running out of patience and could not understand our inability to start treatment even after the patient had been in hospital for more than 10 days. Then the investigations confirmed our clinical suspicion of systemic lupus erythematosus; the girl started definitive treatment, and her condition improved dramatically within 48 hours.

During the intervening period, we had referred this patient to a social organisation called "Make a Wish Foundation," which works closely with our institution to help fulfil the wishes of children who have serious or incurable disease. Coming from poor socioeconomic strata, most children ask the foundation for cable television subscriptions so that they can watch popular movies or cricket matches or for toys, dolls, bicycles, television sets, and other material objects that they normally have no opportunity to use, let alone own. This girl, however, simply asked to be a doctor for a day and to join us on our clinical rounds. She wanted to speak to other sick children and reassure them that they would get well with the care offered by the hospital and its doctors and nurses.

This has been one of the most touching moments of my career. Despite having several unfulfilled material needs, let alone aspirations and dreams, this girl asked to spend a few hours with our team. By wishing to imitate and join us, she showed her appreciation of our work and her faith in our abilities. She also showed a deep understanding of the admitted children's needs for assurance and psychological support, the needs that are often relegated to the background in our setting. Her simple wish also gave a huge boost to the team's morale and enthusiasm.

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