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Outcomes and impact of HIV prevention, ART and TB programmes in Swaziland - early evidence from public health triangulation.

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In 2011, the Ministry of Health in Swaziland joined forces with the World Health Organization (WHO), the Global Fund (GF) and SACEMA to do the first in-depth health programmes progress evaluation using triangulation from key empirical data sources (1). Guidelines to provide monitoring and evaluation using the triangulation approach were developed by WHO, GF and UNAIDS and were used to report on policy development, implementation and programmatic progress of HIV testing and counselling (HTC), antiretroviral treatment (ART), tuberculosis (TB) and prevention of mother to child transmission (PMTCT) services (2).

An analysis of this kind was timely in Swaziland, since the country has a high prevalence of HIV (at 26% for adults ages 15-49 in 2010), started its AIDS response early (in the early 1990s), and has regularly reported progress of the national ART programme. The Ministry of Health Monitoring and Evaluation team decided to focus on key questions like:

- Given increasing coverage of ART, has ART reduced adult and/or infant mortality?
- Can TB trends be related to trends in HIV prevalence, ART coverage and combined TB/HIV interventions?
- Can trends in infant mortality be related to uptake of PMTCT?

Data sources, aggregated at the national level, included programme records and patient registries from the HTC, ART, TB and PMTCT programs, two-yearly HIV sentinel surveillance among women attending antenatal clinics, annual data on morbidity and mortality registered in health facilities and hospitals assembled in the national hospital monitoring information system (HMIS), the 2007 Population Census and 2007 Demographic and Health Survey (DHS). In addition, we used national-level estimates of incidence, prevalence, AIDS deaths and population size produced with the HIV epidemic model Spectrum, developed by UNAIDS and technical partners.

For a brief summary of the demographics of the Kingdom of Swaziland, the national response to the HIV epidemic and some programmatic indicators, please refer to the official report (1) or the paper

(3). The rest of this article will focus only on the three questions above:

Given increasing coverage of ART, has ART reduced adult and/or infant mortality?

Since its launch in 2004, the national ART programme scaled up to ~60,000 clients on treatment at the end of 2010, with an estimated coverage of ~70% of people living with HIV in need of treatment at the time. The only official national level mortality estimates available are census all-cause mortality estimates that show a drastic increase between 1997 (just before the peak in HIV incidence) and 2007 (close to the estimated peak in mortality due to AIDS). As proxies for national level mortality estimates, two indicators were considered: First, the 12-month retention on treatment improved from 75% for the adult cohort enrolled in 2007 to 84% for the adult cohort enrolled in 2009. Second, in-patient case fatality rates (defined as the proportion of patients admitted to hospital who died in a given year) for both adults and children for AIDS-attributed admissions as well as all-cause admissions in females aged 15 or older rapidly rose from 2001 to a peak in 2004-5, followed by a gradual decline until 2009 (latest available data at time of report).

Can TB trends be related to trends in HIV prevalence, ART coverage and combined TB/HIV interventions?

Swaziland remains among the countries with the highest TB disease incidence rates, estimated at 1,290 per 100,000 person years (95% CI 1,060-1,530) in 2010. Around 80% of patients with active TB in Swaziland are also HIV-infected, and this proportion has been stable over the period 2006 to 2010. By 2010, according to TB program records, coverage of HIV screening among TB patients had reached 86%, coverage of co-trimoxazole preventative treatment (CPT) among TB/HIV co-infected patients 93%, and coverage of ART for TB/HIV co-infected patients 35%. TB case notifications continued to increase until 2009, for both new pulmonary, new extra-pulmonary and relapse cases. When disaggregated by age and sex, the largest and steepest increases in TB case notifications were in the age groups with highest HIV prevalence: men 35-44 years and women 25-34 years.

Can trends in infant mortality be related to uptake of PMTCT?

High coverage of PMTCT services among HIV infected pregnant women is facilitated by the high antenatal care (ANC) attendance - 97% of women make at least one ANC visit during their pregnancy. In 2010, 81% of these women received a HIV test result and counselling and 9,273 (86%) of the HIV positive women received ARV prophylaxis to reduce MTCT. The percentage of HIV-exposed babies testing HIV-positive with DNA PCR methods dropped from 24% in 2007 to 12% in 2010. In parallel, in-patient all-cause case fatality rates fell sharply for both infants aged 0-1 year and children aged 1 to 4 years.

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