

POLICY BRIEFS ON

ECONOMIC IMPACT OF HIV



12.

TRADE-OFFS AND SYNERGIES BETWEEN HIV AND OTHER HEALTH OBJECTIVES

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12.

TRADE-OFFS AND SYNERGIES BETWEEN HIV AND OTHER HEALTH OBJECTIVES

KEY POINTS

- HIV is associated with a range of other diseases, through shared risk factors, effects of HIV on the incidence of other diseases, and the ageing of populations living with HIV.
- While investment in HIV may crowd out other health services, investments in the HIV response have contributed to the strengthening of health systems overall. Empirical evidence suggests positive and negative effects on the delivery of specific types of non-HIV health services.
- Integration of HIV and other health services serves to improve efficiency and to address the changing needs of people living with HIV, which – for most patients – has been transformed into a chronic disease.

HIV programmes do not occur in isolation, but are linked to other health challenges – on the demand side through interactions between diseases, and on the supply side through interactions (synergies or trade-offs) in the delivery of health services. Where such effects are important, a **health-systems perspective** complements and improves the insights from an intervention-focused cost-effectiveness analysis. In this brief we develop some of these interactions: the role of HIV as a

contributor to a range of other diseases, most notably TB; the implications of the growing burden of non-communicable diseases (NCDs) among people living with HIV, primarily as a consequence of ageing; and supply-side intersections as HIV investments contribute to the strengthening of health systems overall, or as allocations of resources to HIV programmes crowd out the delivery of other health services.

Intersecting burdens of HIV and of other diseases

HIV is associated with a range of other diseases, since it weakens the immune system and shares risk factors. In addition, as the population living with HIV ages because of increased treatment access, non-communicable diseases are becoming more common among people living with HIV.

HIV is directly linked to various other diseases, since it weakens the immune system. These diseases include some which occur predominantly among people living with HIV

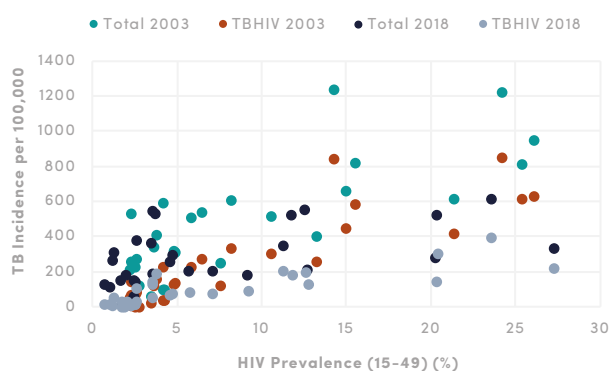
(PLHIV) – such as certain “AIDS-defining” cancers – as well as otherwise-common infectious diseases which occur much more frequently among PLHIV. The most important of these is tuberculosis (TB) (Figure 12.1), for which HIV is one of the most important risk factors. As of 2000, there were 1.5 million TB cases among PLHIV globally, accounting for 13.8 percent of the total number of TB cases, and the incidence of TB among PLHIV was 41 times higher than for HIV-negative people. Since then, the incidence of TB among PLHIV has

declined sharply, from 6.1 percent annually in 2000 to 2.1 percent annually in 2019, largely in line with the scale-up of treatment (see example in Figure 12.2). Consequently, while the number of people living with HIV has increased sharply (from 24 million in 2000 to 38 million in 2019), the share of PLHIV in global incidence of TB has declined to 8.2 percent over the same period.

However, HIV-TB co-infections remain an important challenge. TB incidence among PLHIV remains much higher than for HIV-negative people (by a factor of 18 globally), and in several countries PLHIV account for more than

one-half of all TB cases (Eswatini, Lesotho, South Africa, Zimbabwe). For the provision of services, these data and developments have at least two implications. First, HIV prevention and treatment contribute strongly to reducing the burden of TB, both among PLHIV and – through the prevention of onward transmission of TB – among the population overall. Second, the fact that a large share of TB patients are also HIV-positive has implications for the effective delivery of HIV and TB services. Indeed, this is an area in which integrated models of service delivery have long been used or considered (Legido-Quigley et al., 2013).

Figure 12.1: TB incidence total and linked to HIV versus HIV prevalence (15–49)

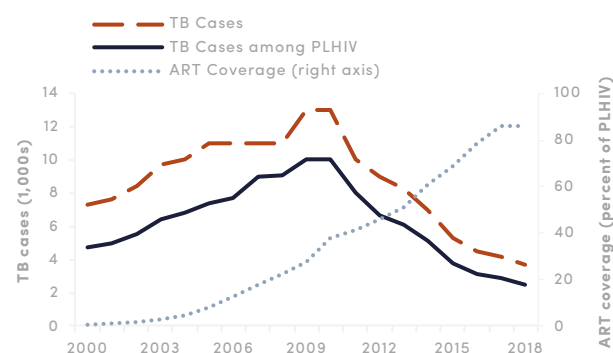


Source: WHO (2020) for TB incidence and population, UNAIDS (2019) for HIV prevalence.
 Note: Figure 12.1 excludes countries where HIV prevalence was less than 2 percent as of 2003.

HIV is linked to several other diseases (such as sexually transmitted infections and drug-use disorders) through common risk factors, such as condomless sex and injecting drug use. These links have been recognised in the design of HIV prevention and care programmes that focus on key populations such as female sex workers, or that use harm-reduction interventions for people who inject drugs. An important but indirect linkage occurs in the areas of maternal and child health. Mother-to-child transmission of HIV is largely preventable, making maternal health services a focus of HIV prevention and a significant way to diagnose HIV in patients and refer them for care. Conversely, investments in maternal health services to combat the spread of HIV typically improve the performance of maternal health services overall (see next section).

A third driving factor between HIV and other diseases is the ageing of the population living with HIV. Following the scale-up of treatment and increased survival, the population living with HIV is ageing. An increasing share of

Figure 12.2: Total number of TB cases and number of TB cases among PLHIV, Eswatini



PLHIV are reaching age brackets where significant NCDs such as cardiovascular diseases, diabetes and chronic kidney disease become more common (Hontelez et al., 2016; Mahy et al., 2014). The treatment of HIV becomes more complex when ageing PLHIV increasingly develop NCDs or multi-morbidities (Atun et al., 2009), and the prevalence of significant NCDs among PLHIV is projected to increase steeply overall (Smit et al. 2018, Figure 12.3). Relatedly, prevalence of HIV among (generally older) populations affected by NCDs remains high even if headline HIV prevalence – in which younger cohorts with low HIV prevalence carry a large weight– declines (Haacker et al., 2019, see Figure 12.4). One emerging challenge is the role of HIV and long-term exposure to antiretroviral therapy (ART) as risk factors for some NCDs, especially cardiovascular disease and diabetes (Calcagno et al., 2015), and the potential of adapting treatment to minimise such risks. This has several consequences for addressing the challenges posed by HIV and NCDs.

Figure 12.3: Projected prevalence of selected NCDs in Kenya, by HIV status (ages 18+)

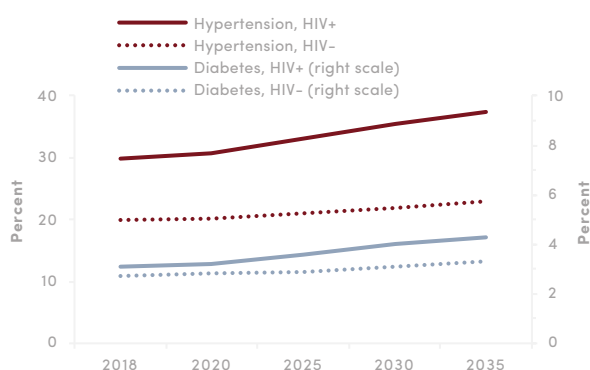
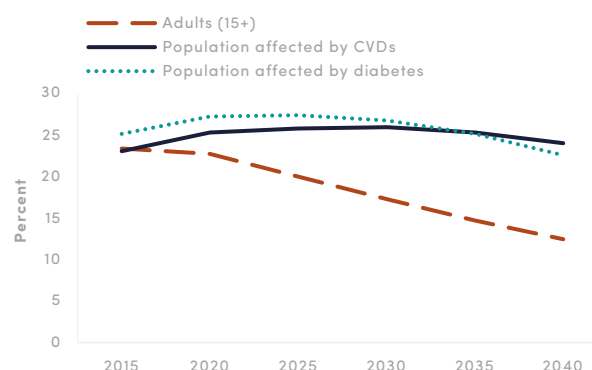


Figure 12.4: HIV prevalence, selected populations, Botswana, 2015–2040



Sources: Haacker et al. (2019) for Figure 12.3. Figure 12.4 adapted from Smit et al. (2019), using data provided by Smit. CVDs (Figure 12.3) = cardiovascular diseases.

HIV crowding out other health services?

In many countries, the HIV response has caused a steep increase in demand for health services and has also triggered a strong health-system response, often enabled by very substantial external support. For an appraisal of the impact of the HIV response, it is important to understand its implications across the health sector, and the extent to which populations beyond PLHIV have been affected. These implications could be negative if limited health resources are reallocated to the HIV response at the expense of other health services. They can also be positive if investments under the umbrella of the HIV response contribute to overall health-systems strengthening and capacity-building.

Concerns regarding the implications of HIV programmes on health systems include inequities in access to and quality of care, access to HIV services versus other under-resourced services of the health system, distorted incentives for health workers caused by disparities in salaries and workloads (Mussa et al., 2013), and lack of coordination between HIV and non-HIV services (Biesma et al., 2009).

These challenges, however, have long been recognised in HIV policy planning. For example, the UNAIDS “Fast Track” strategy 2016–2021 (UNAIDS, 2014) highlights the contributions of health-systems strengthening and progress towards universal health coverage to ensuring “access to comprehensive and integrated (where appropriate) HIV and health services.” Relatedly, some funding for HIV programmes has been dedicated to health-systems strengthening. For example, 9 percent of budget allocations by the US President’s Emergency Plan for AIDS Relief (PEPFAR) were dedicated to health-systems strengthening

(also including lab infrastructure and strategic information) in the financial years ending 2016 to 2020 (PEPFAR, 2020).

One channel through which HIV services may improve access to health services in other areas is engagement at the point of delivery of HIV care. PLHIV receiving ART “are more likely to have received health-care services for diabetes and hypertension” (Manne-Goehler et al., 2017). The presence of clinics providing ART may also result in increased acceptance and uptake of public primary-health services across the population, irrespective of HIV status (Hontelez et al., 2016).

In terms of access and quality of health services beyond people living with HIV, the picture is uneven. There is evidence of positive effects of the presence of HIV services on related services – that is, services which are often delivered in combination with HIV interventions. For example, facility-level data (Kruk et al., 2015) and cross-country evidence (Grépin, 2012) support a positive impact of the presence of HIV programmes on maternal health services, where capacity-building in support of prevention of mother-to-child transmission of HIV has contributed to stronger functioning of facilities (Brugha et al., 2010; Rassaert et al., 2011; Kruk et al., 2015). In contrast, the scaling-up of HIV services may have affected health services negatively in areas not directly linked to the delivery of HIV services, including neonatal health (Lee & Izama, 2015) and immunisation (Grépin, 2012; Wilson, 2015; Brugha et al., 2010; though Cohen et al. (2013) suggest a positive effect of PEPFAR investments). Wollum et al. (2017) do not find a statistically significant link between provision of ART and of outpatient services.

Integration of HIV and other health services

Integration of HIV services and other health services serves a number of often overlapping objectives – adapting to the changing context and nature of the HIV response, realising efficiency gains and achieving cost savings, aligning service delivery as funding becomes more integrated, and responding to the changing needs of PLHIV.

In part, integration of HIV and other health services mirrors the declining role of donors in funding national HIV programmes (Binagwaho et al., 2016). At the same time, the delivery of HIV-related services has become much more effective, through the development of robust drugs and task-shifting of some services from doctors to nurses (Kredo et al., 2013, 2014). The constraints and immediate needs which motivated the establishment of vertical programmes outside the public-health sector at the beginning of the global HIV response have correspondingly become less binding.

On a more specific level, integration is motivated by the objective of improving the cost-effectiveness of delivering HIV-related services. Gains in cost-effectiveness may arise from two factors: the presence of economies of scale, and synergies in the delivery of HIV services and other health services (i.e., economies of scope). Economies of scale are well documented in the delivery of HIV prevention services such as testing and counselling, prevention of mother-to-child transmission, and male circumcision (Galárraga et al., 2017; Bautista-Arredondo et al., 2018). Conversely, this means that the relative cost of each positive HIV test can be very high in facilities where the number of patients overall, or HIV prevalence among patients, is low. This insight led PEPFAR to focus site-level support on regions where HIV prevalence was high (Wilhelm et al., 2019), relying on more integrated modes of service delivery in other areas.

Probably the most important example of synergies between HIV-related services and other health services is the integration of prevention of mother-to-child transmission of HIV into antenatal and maternal health services, and the role of antenatal care in increasing access to HIV testing and counselling and, ultimately, treatment. Client interactions with health services at the point of (HIV) care offer numerous further opportunities for screening for health conditions like cervical cancer, hypertension or diabetes (Golovaty et al., 2018; Haldane et al., 2018; Nugent et al., 2018; Sigfrid et al., 2017). Such interactions are strengthened by effective referral to care, which is facilitated by proximity (if not full integration) of facilities and consistent quality of care across diseases (not always satisfied, see Rabkin & Nishtar, 2011). In practice, gains from service integration are driven by the presence of both economies of scale and economies of scope. For instance, Obure et al. (2016) find that efficiency gains are “most achievable in settings that are currently delivering HIV and SRH [sexual and reproductive health] services at a low scale with high levels of fixed costs.”

Looking ahead, one of the most complex challenges is posed by the ageing of the population living with HIV (discussed above). This means that the prevalence of NCDs (and, frequently, of NCD multi-morbidities) will increase steeply among PLHIV (typically more so than for the population overall), and that the management of these NCDs is complicated by a history of HIV and long-term ART (Althoff et al., 2016). The needs of PLHIV thus become more specific and complex. Effective care for ageing PLHIV therefore requires some integration across health-system functions (Atun et al., 2013). At the same time, the chronic-disease model of HIV offers a template for meeting the increasing demand for NCD-related health services (Binagwaho et al., 2016).

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