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Editorial

Setting the scene, setting the targets. The Joint United Nations Programme on HIV/AIDS prevention targets of 2016 and estimating global pre-exposure prophylaxis targets

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Abstract. Commitment to ambitious and time-bound targets for HIV interventions has been part of the response from the beginning of the HIV epidemic. The Joint United Nations Programme on HIV/AIDS (UNAIDS) HIV primary prevention work[A] is built on five pillars that include offering pre-exposure prophylaxis (PrEP) to population groups at substantial risk of HIV infection. After a slow start, countries are now setting coverage targets for PrEP, but the weakness of epidemiological, demographic and behavioural data at subnational level in many countries where there is a high burden of new HIV infections, makes it difficult to define the locations and populations where to offer PrEP. This article reviews the history and challenges of PrEP target setting and suggests some possible ways of strengthening the process. Reviewing program data will identify gaps in reaching key and other priority populations for whom coverage targets were set and help to refine the offer of PrEP.

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Introduction

Commitment to ambitious and time-bound targets for HIV interventions has been part of the epidemic response from the beginning, guiding action, driving progress and uniting actors in controlling the HIV/AIDS epidemic.[1,2] The transformation of targets to increased programmatic coverage and effect is not automatic,[3] but without coherent targets, there is a greater risk of a fragmented, inefficient and ineffective response.

Target setting for ending the global HIV epidemic is founded on the principle of public health effect through multi-component programs and actions. In 2016, Heads of State and Government adopted the United Nations (UN) declaration[2] that describes the global response required to achieve the Sustainable Development Goal of ending AIDS as a public health threat by 2030.[4] The declaration reflects the Joint United Nations Programme on HIV/AIDS (UNAIDS) 'Fast-Track' approach[5,6] that promotes and models the rapid scale-up and maintenance of prevention and treatment services that will be necessary to reach this goal. This represents a shift in vision from the incremental progress in previous declarations.

Among other ambitious milestones on the road to 2030 was the target of reducing the annual number of new infections to less than 500 000 by 2020, which represents a 75% reduction in new infections since 2010.[2,5,6] Achieving such a reduction would require the joint forces of primary and secondary HIV prevention, provided and used within an enabling structural and human rights framework. Intensive efforts to eliminate new HIV infections among children and to keep their mothers alive have achieved steep declines in the annual number of new infections among children. Declines in new HIV infections in youth and adults have, however, been too slow, and global HIV prevention targets are being missed by a wide margin, with 1.6 million new infections among young people and adults still estimated to have occurred in 2017, a decline of 16% since 2010.[7]

UNAIDS primary prevention targets

Continued HIV testing and treatment scale-up must be accompanied by a much stronger primary prevention response comprising biomedical, behavioural and structural dimensions. The five pillars of primary prevention upon which UNAIDS' activities are built are:

1. Combination prevention for adolescent girls, young women and their male partners in high-prevalence locations, mainly in Africa;
2. Combination prevention programs for all key populations;[B]
3. Strengthened national condom and related behavioural change programs;
4. Voluntary medical male circumcision;
5. Offering pre-exposure prophylaxis (PrEP) to population groups at substantial risk[C] of HIV infection.

[A]This paper considers primary HIV prevention for youth and adults, not including prevention of mother to child transmission.
[B]Including sex workers, gay men and other men who have sex with men, transgender people, people who inject drugs and prisoners.
[C]The World Health Organization's 2016 guidelines provisionally define substantial risk of HIV infection as HIV incidence of 'around 3 per 100 person-years or higher' based on cost-saving achieved by averting HIV treatment costs through the use of PrEP. It was recognised that thresholds for offering PrEP may vary depending on a variety of considerations, including epidemiological context, available resources and the relative costs, feasibility and demand for PrEP and local structural factors.

Table 1. Primary prevention targets included in the 2016 United Nations declaration to be achieved for 2020[8]

Coverage targets	Outputs target
Ensure that 90% of people at risk of HIV infection have access to comprehensive HIV prevention services, including:	Ensure that: 3 million people at high risk access pre-exposure prophylaxis
All young people in high-prevalence settings	An additional 25 million young men are voluntarily medically circumcised in 14 priority countries in Africa
Key populations everywhere, including sex workers, gay men and other men who have sex with men, transgender people, people who inject drugs and prisoners	20 billion condoms per year are made available in low- and middle-income countries

The programmatic targets associated with these five pillars, and included in the UN declaration as required to achieve the 75% reduction in new infections by 2020, are presented in Table 1.[8]

Target for pre-exposure prophylaxis

The World Health Organization (WHO) guidelines and recommendation for PrEP provision are developed in alignment with the results from clinical trials and were comprehensively updated in 2016.[9] The previous 2014 PrEP guidance recommended offering PrEP to gay men and other men who have sex with men (MSM), as well as to the seronegative member of a sero-different couple (SDC).[9] Also in 2014, the United States Centers for Disease Control and Prevention (CDC) had produced clinical PrEP guidelines that recommended the offer of PrEP to a broader population[D] at substantial risk of HIV infection.[10] Despite the combined weight of these two 2014 recommendations, their guidance was adopted into prevention plans of only a few countries, and the uptake of PrEP grew very slowly. UNAIDS included a coverage target in its target setting and resource estimation work, on the premise that this could act to stimulate engagement with PrEP by national HIV programs. By applying 10% coverage in 2020 to the estimated numbers of MSM, female sex workers (FSW), SDCs and adolescent girls and young women at higher risk of HIV infection, a crude coverage target of three million people on PrEP by 2020 was calculated.[6,11]

The definition and collation of the data is starting now for the modelling of the trajectory and resource needs for the HIV epidemic response beyond the current 2016–21 period. Updated estimations of all parameters of HIV programs will be considered, including evidence from mature treatment and prevention programs, established PrEP services and improved sub-national epidemiology. In several high-income settings, the offer of PrEP has contributed to a population-level decline in new HIV cases when PrEP services have been integrated in comprehensive HIV programs, alongside achievement or near achievement of the 90–90–90 treatment goals.[3] Review of the program data has demonstrated the coverage gap compared with the total population targets for PrEP and helped identify the population with indications to be offered PrEP but not yet reached with PrEP services.

In the period since the 2016 United Nations declaration, most countries with a high burden of new HIV infections have set ambitious impact targets to achieve the 75% reduction in new infections, but these are not consistently matched with corresponding targets for prevention program coverage. In middle- and low-income countries, coverage targets were commonly set only for projects; for instance, funded by a donor, but not at the national level.[8,11]

Under the auspices of the recently founded Global HIV Prevention Coalition,[8,11] a primary prevention road map has been developed through a consultative process to provide the basis for country-led movements to scale up HIV prevention towards the United Nation declaration targets.[8] Stimulated by the road map, 20 of the countries with the highest annual number of new HIV infections have revisited their prevention targets or set new ones.

Setting national and sub-national PrEP targets

Setting coverage targets requires national or sub-national estimates of the size of each key population, data on the likely demand for PrEP and quantitative evaluation of resource and capacity needed and available to provide PrEP. Strengthened sub-national population size estimates (PSEs) are required for all prevention coverage target setting,[12] but the identification of the populations of people who are HIV negative with a substantial risk of HIV infection is especially important for PrEP targets.[13] The best sources of sub-national data should be used to localise clusters of high HIV incidence, strengthened by linked evaluation of behavioural and structural factors that are associated with increased risk of HIV infection.[14]

Estimating the size of key populations with indications for the offer of PrEP is challenging due to the stigma, criminalisation and marginalisation their members face in many countries where HIV prevalence is high.[12] The weakness of epidemiological, demographic and behavioural data at sub-national level in many countries where there is a high burden of new HIV infections makes it difficult to define the locations and populations where to offer PrEP. The absence of a defined population undermines the validity of PSEs, limits target setting and threatens the rollout of PrEP. Risk factor evaluations, in particular, are poorly transferrable between localities,[15,16] and

[D]These populations were identified as sexually active adult gay men and other men who have sex with men at substantial risk of HIV acquisition, adult heterosexually active men and women who are at substantial risk of HIV acquisition, adult injection drug users at substantial risk of HIV acquisition and HIV-discordant couples.[10]

every effort should be made to understand the local behavioural and structural factors at play in increasing individuals' HIV risk. Community mapping, built on mutual trust between those collecting data and the key and other priority populations, is the local entry point to describe population heterogeneity and identify where to offer PrEP services.[16] Privacy concerns, reluctance to discuss 'risky' behaviours and the possibility of penalisation mean that community mapping conducted in person may identify only part of the target population. Social network-based assays conducted with and by the communities concerned could enrich the data and provide timely feedback on the rollout of PrEP services.

Even if no PSEs are possible, and the only data available are estimates of localised HIV incidence, then the PrEP targets could still be defined for the number of sites offering PrEP.[13] The provision of PrEP services can act to engage the populations most at risk of HIV infection[9,13] and therefore lead to strengthened PSEs.

Subsequent to the size estimations of populations with indications for PrEP, the scale of anticipated demand will need to be evaluated in order to assess the capacity and resource needs to deliver PrEP.[12] Data from demonstration projects of PrEP introduction in middle- and low-income countries suggest that initial uptake is ~10% of those with indications to be offered PrEP.[17–19] The capacity to engage populations and provide PrEP depends not only on the knowledge, attitudes and skills of the healthcare workers, but also on the strength of support and involvement of all partners including faith-based organisations (FBOs), HIV network organisations and community-based organisations directly servicing communities and populations at risk of HIV.[13]

In the early stages of PrEP rollout, it is recommended that country programs work with priority populations where there is established collaboration[13,16] to maximise the uptake of the service. Where PrEP is a new intervention and a novel concept for the population, programs may need initially to be more permissive in the indications for PrEP in order to include people with a high but unrecognised risk of HIV infection.[13] Often countries with weak data start with small PrEP projects in order to understand likely uptake patterns and inform the target calculations.

Limitations of target setting

Setting the PrEP target is one part of comprehensive prevention planning and ought not to lead to isolationist consideration of PrEP as a stand-alone intervention. It is vital to coordinate all prevention target setting and subsequent programmatic planning across the range of prevention strategies in order to see the greatest benefit.[8] Coverage targets for PrEP are useful insofar as they engage the priority populations in sexual health care, guide resource allocation, encourage capacity building, stimulate demand creation for PrEP access and lead to comprehensive program development.[12,16,20] Ideally, all HIV-related targets would be set and ultimately endorsed through a national stakeholder meeting.[12] This helps ensure that the purpose of surveys and use of results is well understood, that targets are realistic and owned by all groups that use them, and also strengthen the associated data collection for monitoring.

Conclusion

Setting coverage targets for PrEP can stimulate program planning for PrEP provision to the people who can benefit from it. As early PrEP programs mature the PSEs and targets should be reviewed. Indeed, when demand is created and access is improved, the size of the population at substantial risk becomes more evident and may be higher than initially estimated. Successful PrEP programs have reached some, but not all, of their targeted populations. Review of uptake, adherence and continuity rates are required to refine recruitment and retention strategies. Without ambitious yet realistic targets and integration in a comprehensive HIV program, it is unlikely that the potential of PrEP to contribute to ending the AIDS epidemic will be realised.

Conflicts of interest

The author declares no conflicts of interest.

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