

# India's HIV programme: successes and challenges

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## Abstract

Over the last two decades, India's National AIDS Control Programme (NACP) has evolved and expanded to provide HIV prevention, testing and treatment services countrywide. Scaling up has been uniform across all strategic components and has not only halted, but also reversed, the spread of the epidemic and ensured a major reduction in the number of AIDS-related annual deaths. As the epidemic has been driven by key populations, there was a special focus on these groups from the outset, with various innovative strategies for prevention and testing services. The treatment component has also been scaled up over the years through various models of service delivery that ensured access to free antiretroviral therapy for eligible HIV-infected patients. The programme, now in its fourth phase, has to ensure that new policies and strategies are developed in view of the global UNAIDS targets. The scale up over the years has ensured access to services; however, it is now important to ensure the quality and sustainability of newer models of interventions to ensure that the 2030 sustainable development goals are achieved.

Keywords: National AIDS Control Organization, India, HIV, success, challenges

## Introduction

India, the second most populated country in the world, is home to an estimated 2.1 million people living with HIV (PLHIV) [1], the third highest population globally after South Africa and Nigeria. The HIV epidemic in India is highly heterogeneous. It is concentrated in specific regions of the country and in high-risk groups (HRGs) such as people who inject drugs (PWID), female sex workers (FSW), men who have sex with men (MSM) and transgender people. HIV prevalence among all adults (15–49 years) has been declining steadily from 0.38% in 2001 to 0.26% in 2015, while among FSW, MSM and PWID it remains at 2.2%, 4.3%, and 9.9%, respectively. Over the period 2000–2015, the annual estimated number of new HIV infections has decreased by 66%, while the number of annual AIDS-related deaths has decreased by 54% since 2007 (Table 1)[1].

India's National AIDS Control Programme (NACP), implemented by the National AIDS Control Organization (NACO) under the Ministry of Health and Family Welfare, is one of the most successful public health programmes in India today (Figure 1). Started in 1992, with the objective of understanding the HIV disease burden and epidemiological trends [2,3], the programme has now evolved into a major public health prevention and treatment programme. It is supported financially by the Government of India (63.4%), the Global Fund and the World Bank (23%), and other multilateral and bilateral agencies [4]. Over the last two decades, four phases of the NACP have been implemented, each with a duration of 5 years. The focus in each phase has been on improving coverage of comprehensive HIV prevention, care and treatment services nationwide. The NACP IV (2012–2017) was launched with the aim of consolidating gains made to date, accelerating the process of reversal and further strengthening the response to the epidemic in India. Its objectives include: (1) reduce new infections by 50% from the 2007 baseline of NACP III; and (2) provide comprehensive care and support to all persons living with HIV/AIDS, and treatment services for all those who require it [5].

This article presents an overview of the key components of the NACP IV, highlights the policy and programme actions to improve

access to key services, evaluates progress towards achieving the NACP IV targets, and discusses the challenges and way forward to strengthen the epidemic response in India.

## Health sector response to HIV

### HIV prevention for high-risk groups and bridge populations

Prevention services for high-risk groups and bridge populations (e.g. migrants and truck drivers; Table 2, Figure 2) have been scaled up nationwide through targeted-intervention projects. These provide a comprehensive package of prevention, support and linkage services through an outreach-based service delivery model implemented by non-governmental and community-based organisations. Under NACP IV, targeted-intervention services include needle/syringe exchange programmes and oral-substitution therapy for PWID, condom promotion and distribution, and linkage to HIV and sexually transmitted infections (STI) testing and treatment services. Furthermore, many new HIV prevention initiatives such as interventions for migrant workers and focused strategies for transgender people have been initiated under NACP IV.

Against a target of 2459, there were 1840 targeted-intervention projects in the country in 2014–2015, which were successful in reaching nearly 5.6 million people. In 2014–2015 the coverage of the core HRGs, FSWs, MSM and PWID was 80%, 68% and 75%, respectively [4]. However, concerns such as inequality, stigma and discrimination, especially among HRGs, still remain predominant [7,8].

Moving forward, the following steps are being taken to reach the prevention targets set out in NACP IV:

- Greater involvement of PLHIV to address stigma and discrimination.
- Planned demonstration of the oral pre-exposure prophylaxis (PrEP) project as part of an HIV combination preventive intervention for sex workers.
- Test and treat for key populations will be initiated under the support of the Global Fund's New Funding Model [9].

### HIV counselling and testing

When moving towards ending the HIV epidemic by 2030, one of the key challenges remains to ensure that PLHIV, especially those in key populations, are aware of their status so that they can be

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**Table 1.** Burden of HIV in India [1]

Year	Estimated number of new HIV infections in adults (children)	Estimated number of HIV infections	Prevalence (%)	Number of annual HIV-related deaths
2007	106,335 (21,000)	2,225,930	0.34	150,000
2008	96,124 (20,000)	2,198,559	0.32	140,000
2009	88,234 (18,000)	2,174,594	0.31	130,000
2010	84,827 (17,000)	2,156,452	0.30	120,000
2011	82,100 (17,000)	2,146,839	0.29	110,000
2012	80,458 (16,000)	2,143,446	0.28	100,000
2013	78,613 (15,000)	2,127,958	0.27	90,000
2014	77,351 (12,000)	2,119,881	0.27	80,000
2015	75,948 (10,000)	2,116,581	0.26	68,000

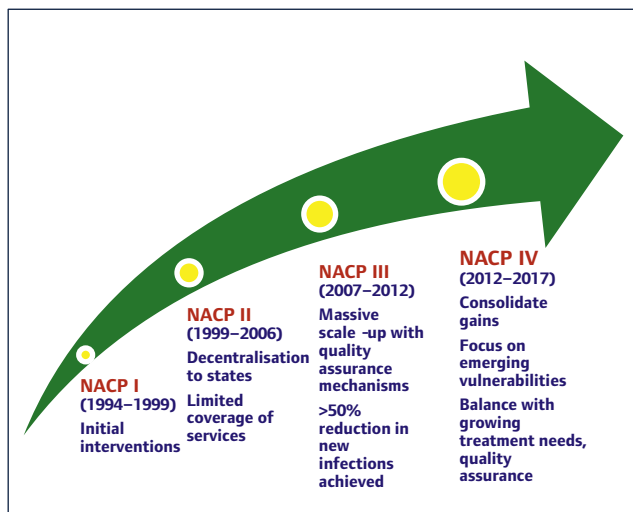
**Table 2.** Prevalence of HIV/AIDS in select populations [6]

	2004	2005	2006	2007	2008–09	2010–11	2014–15
ANC	0.95%	0.90%	0.60%	0.49%	0.49%	0.40%	0.29%
FSW	9.43%	8.44%	4.90%	5.06%	4.94%	2.67%	2.20%
MSM	7.47%	8.74%	6.41%	7.41%	7.30%	4.43%	4.30%
PWID	11.16%	10.16%	6.92%	7.23%	9.19%	7.14%	9.90%

ANC: antenatal care; FS: female sex worker; MSM: men who have sex with men; PWID: people who inject drugs.

linked to life-saving antiretroviral treatment (ART) to prevent HIV morbidity, mortality and transmission. The national HIV testing guidelines have been revised over the years to keep pace with the World Health Organization (WHO) guidelines and recommend client-initiated voluntary counselling and testing and provider-initiated testing and counselling for pregnant women, people infected with TB and STI patients. Under the NACPs, a network of 18,829 stand-alone, mobile, facility-integrated and public-private partnered integrated counselling and testing centres have been established across the country to provide HIV testing and counselling services (Figure 3).

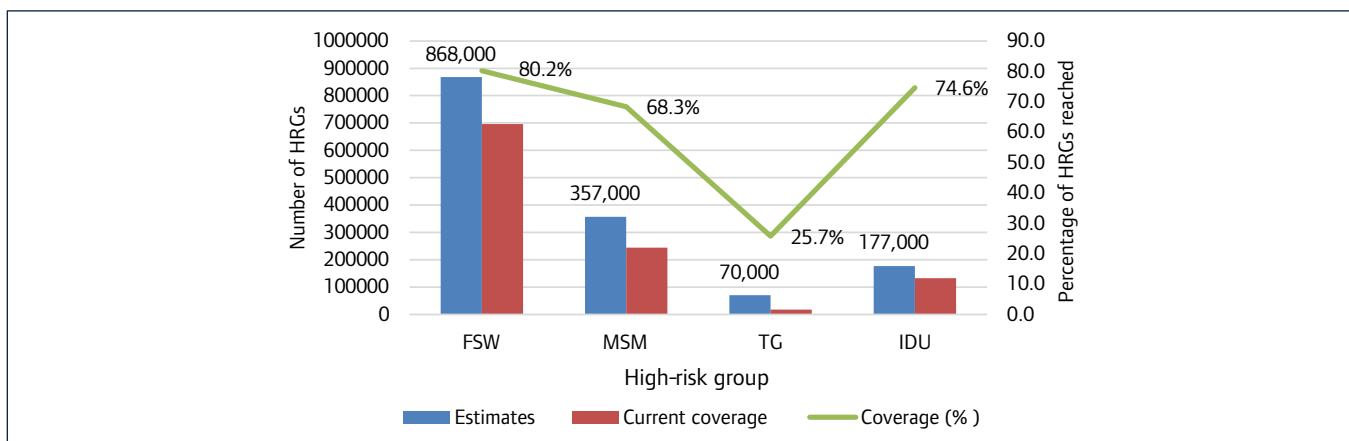
In India, nearly 24 million adults and 300,000 children use HIV testing services annually. Among these, approximately 200,000 adults and 9000 children were identified as HIV positive in 2015. Of the estimated 2.1 million PLHIV, approximately 67% were aware of their HIV status in 2015. Although the national testing guidelines recommend HIV testing every 6 months for key populations, coverage remains low as reflected by TI programme data: 70% of MSM and 64% of PWID were tested in the last 12 months (Global AIDS Response Progress Reporting 2016).



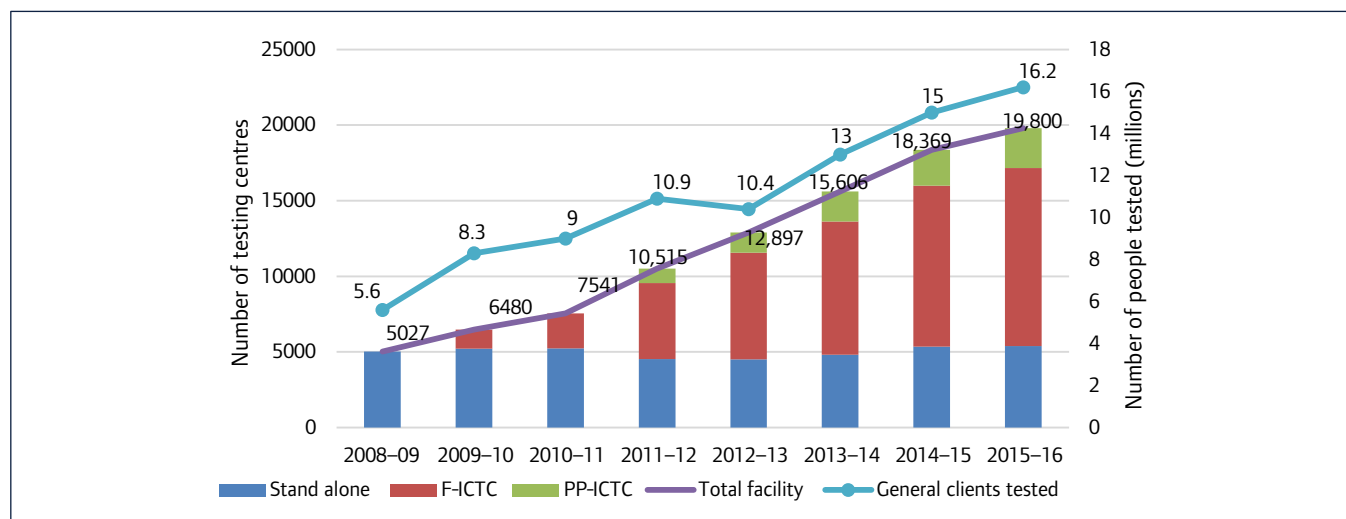
**Figure 1.** The development of National AIDS Control Programme (1994–2017)

In order to achieve the Joint United Nations Programme on HIV/AIDS (UNAIDS) 90-90-90 targets, that is 90% PLHIV tested and aware of their status, 90% of those to be on ART and of those, 90% to be virologically suppressed, some ongoing activities require scaling up while at the same time new activities need to be planned to improve HIV testing rates, especially among key populations:

- The national guidelines are being updated according to the 2015 WHO consolidated HIV testing services guidelines to recommend community-based testing for HRGs using lay providers.
- Demand promotion strategies using mid-media are being implemented, for example National Folk Media Campaign Red Ribbon Express and buses.
- The Ministry of Health and Family Welfare is planning to launch a new campaign: ‘I know my HIV status’ to encourage people to get themselves tested and declare their



**Figure 2.** Coverage of core high-risk groups 2014–2015 (FSW, MSM, PWID)



**Figure 3.** Scale up of HIV testing in India (adults and children). F-ICTC: facilitated integrated counselling and testing centre; PP-ICTC: public-private partnered integrated counselling and testing centres

HIV status on social media. The campaign will serve the objectives of addressing the stigma associated with HIV and getting people to opt in for testing and treatment.

### Prevention of mother-to-child transmission of HIV (PMTCT)

Eliminating paediatric HIV by 2020 has been high on the agenda but with limited progress to date. The national guidelines recommend provider-initiated testing and counselling for pregnant women across the country by the general health system [10]. Under NACP IV, a multidrug regimen for all pregnant women living with HIV, irrespective of their CD4 cell count, was recommended in keeping with international guidelines. Also, new initiatives such as point-of-care testing using whole blood finger prick for pregnant women has been initiated for those who do not come to health facilities for antenatal care in order to ensure better coverage.

However, the 2015 data suggest that of the approximate 29.5 million annual pregnancies in India, only 15 million (50%) pregnant women were tested for HIV. Of these, nearly 13,000 were diagnosed with HIV. This accounts for only 35% of the estimated 35,000 HIV-positive pregnant women in India. The most important reasons for the low levels of HIV testing among pregnant women include late antenatal care registration (less than 50% register in first trimester) and the limited reach of HIV testing services for pregnant women in low HIV prevalence states, which contribute about 57% of the total burden of HIV-positive pregnant women. Once diagnosed, 97% of HIV-positive pregnant women received antiretroviral therapy for PMTCT. Elimination of paediatric HIV in India requires significant improvements in uptake of HIV testing among pregnant women. In fact under the Reproductive, Maternal, Newborn and Child Health plus Adolescent (RMNCH+A) programme of the National Health Mission, India's Ministry of Health has launched an integrated action plan for PMTCT of HIV and syphilis. It will ensure that HIV and syphilis testing is part of the essential ANC package delivered across the country by the general health system [11].

### HIV treatment

Since the roll-out of free HIV treatment services in 2004, this is an area where gains have been more visible as PLHIV are living longer and have a better quality of life (Figure 4). The national ART guidelines have evolved over the years to keep pace with WHO guidelines in the face of new evidence in favour of an earlier initiation of ART. Since 2013, ART is provided irrespective of CD4 cell count for pregnant women (option B+), PLHIV co-infected

with TB or viral hepatitis, and children below the age of 5 years. Since April 2015, the Indian Government has agreed to start ART for asymptomatic PLHIV at CD4 cell counts  $\leq 500$  cells/mm<sup>3</sup> as recommended by the 2013 WHO guidelines. Furthermore, ART as a fixed-dose combination of tenofovir, lamivudine and efavirenz was introduced in the National Programme in 2013. The establishment of treatment service facilities has been scaled up significantly to 519 ART centres, 1094 link ART centres and third-line ART under the programme has also been introduced earlier this year.

At the end of 2015, 925,000 PLHIV were receiving ART nationwide with a coverage of 44% among the estimated number of PLHIV and 66% among people living with diagnosed HIV (UNAIDS target: 90% by 2015) (Figure 5). With the extended ART eligibility criteria, it may be possible to have 1.2 million people on ART by end of 2016.

To strengthen the ART programme, NACO has piloted an integrated tool with quality-of-care indicators and early warning indicators for HIV drug resistance [11]. Even though retention rates were high and pharmacy dispensing practices have been adhered to, concerns regarding the emergence of drug-resistant HIV are relevant in mature programmes as in India. The National Programme, with technical support from WHO, has phased in the use of this tool across 260 ART sites since 2014 [12]. Since 2015, India has also committed to provision of annual viral load testing for monitoring patients on treatment. Currently, there are only nine viral load laboratories in the country. Several options are being considered to ensure availability of annual testing, including an increase in the number of laboratories; the outsourcing to quality-assured private laboratories; and the use of nucleic acid-based test (NAT) technology for viral load testing using point-of-care GeneXpert. This platform is extensively used by the tuberculosis programme and has been validated.

### Management of HIV comorbidities

The HIV/TB collaboration and optimisation of their respective resources has been boosted in 2015 for the scale up of provider-initiated testing and counselling for TB patients and the 'Three I's for HIV/TB' – intensified TB case finding, isoniazid preventive therapy (IPT), and TB infection control. NACO and the Revised National TB Control Programme (RNTCP), with the support of WHO, have developed the capacity for 30 ART centres to detect TB among PLHIV using cartridge-based nucleic acid amplification tests and provide treatment. Under NACP IV, implementation of

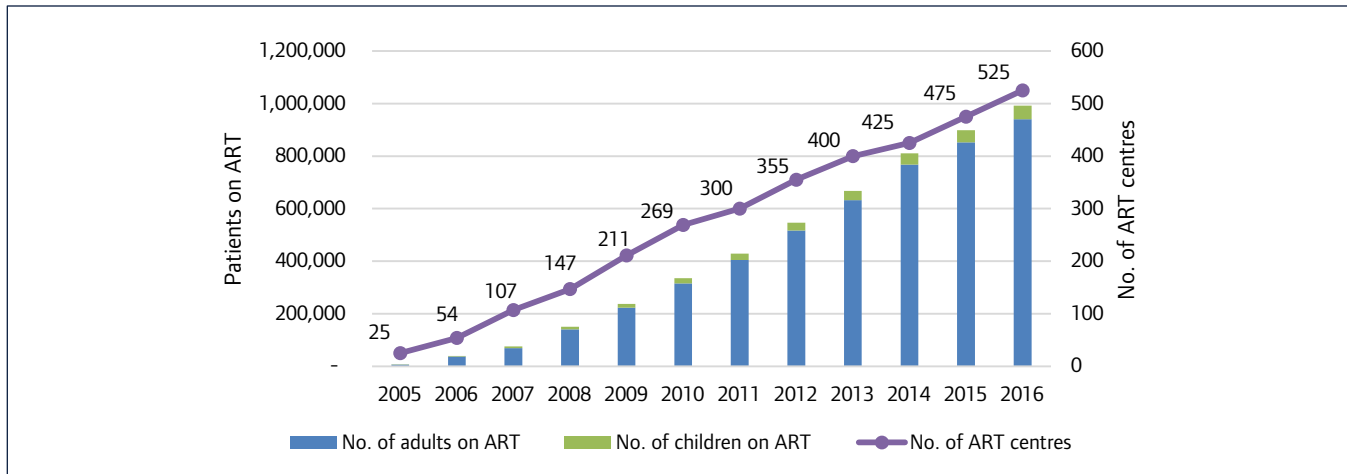


Figure 4. HIV treatment scale up in India

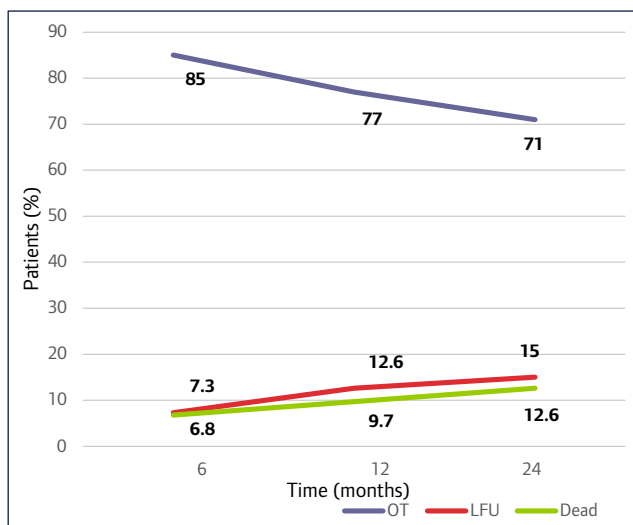


Figure 5. Treatment retention cascade (early-warning indicator results)

operational guidelines for provider-initiated testing and counselling among presumptive TB cases, isoniazid preventive therapy plans, and national airborne infection control guidelines in HIV care settings have also been prioritised and members of staff across ART centres are currently being trained. In 2014–2015, analysis of patient samples was performed across 70 ART centres throughout India and, of the 9468 patients sampled, TB was diagnosed in 1871 (19.7%) with the time between anti-tuberculosis treatment and ART initiation of 2–8 weeks for 65% of patients who were not already on ART. The median time was 23 days [12].

With the HIV treatment programme maturing, there has been a realisation that in order to optimise the ART benefits, co-infections with hepatitis B and C, and kala-azar also need to be managed. Hepatitis C, which is common among members of key populations, especially PWID, is a major concern in certain parts of India [13]. Following a policy dialogue with WHO and other partners, the Indian government has decided to develop a strategy for the treatment of hepatitis C in PLHIV. Similarly, in 2015, NACO in collaboration with the National Vector Borne Diseases Control Programme, developed guidelines for the diagnosis and treatment of kala-azar in this population.

## Challenges and the way ahead

The Indian HIV programme has evolved, expanded and implemented various new initiatives over the years. The national

HIV programme has, so far, been a success story, however, challenges and gaps remain, including stigma and discrimination and access to testing services for people from certain sections of society. The other major challenge that the programme faces is funding. With declining funding from external donors, access to the domestic budget has progressively increased but has been slow. As a result, newer policies and strategies such as ‘test and treat’ might be difficult to implement. As India has a large number of PLHIVs, any change in policy has major financial implications. The global vision and sustainable development goal to end AIDS by 2030 requires initiating all PLHIV on ART irrespective of CD4 cell count as per the 2015 WHO antiretroviral therapy guidelines [14]. The UNAIDS 90:90:90 targets have been designed in a manner that would help countries to plan further strategies that would ensure the end of AIDS [15].

The Indian government needs to align its policies and strategies with the global target of ending AIDS by 2030. To meet this goal, UNAIDS 90:90:90 targets need to be achieved and the country first needs to identify the detection and treatment gaps in high-burden areas and key affected populations and address them. Work starts from the identification of people with HIV, then carries on through their linkage to treatment services. NACP IV, along with WHO, is working to develop a treatment cascade that will identify gaps in the HIV care cascade. Any gaps identified could then guide policy makers in modifying strategies accordingly so that the country can proceed towards achieving targets. National surveillance of HIV drug resistance levels is a priority before the end of NACP IV. After the completion of NACP IV in 2017, with additional well-led initiatives, political commitment, active engagement of civil society, and additional funding, India could demonstrate that it is indeed possible to end AIDS by 2030. It will require acceleration of current efforts and scale up of innovations in order to change the trajectory of the response.

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### Disclaimer

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