



## THE EVOLUTION OF NACP: INDIA'S ATTEMPT AT CONTROLLING THE HIV/AIDS EPIDEMIC

### Community Medicine

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### KEYWORDS

#### History of HIV

The origin of HIV has been a subject of scientific research and debate since the virus was identified in the 1980s. HIV is a type of lentivirus, which means it attacks the immune system. In a similar way, the Simian Immunodeficiency Virus (SIV) attacks the immune systems of monkeys and apes. [1] Studies of some of the earliest known samples of HIV provide clues about when it first appeared in humans and how it evolved. Research found that HIV is related to SIV and there are many similarities between the two viruses. HIV-1 is closely related to a strain of SIV found in chimpanzees, and HIV-2 is closely related to a strain of SIV found in sooty mangabays. [2]

The most accepted theory as to how humans got infected with a monkey virus is through hunting and consumption of monkey meat. Studies concluded that the first transmission of SIV to HIV in humans took place around 1920 in Kinshasa in the Democratic Republic of Congo (DR Congo). [3] The first verified case of HIV is from a blood sample taken in 1959 from a man living in what is now Kinshasa in the Democratic Republic of Congo. The sample was retrospectively analyzed and HIV detected. There are numerous earlier cases where patterns of deaths from common opportunistic infections, now known to be AIDS-defining, suggest that HIV was the cause, but this is the earliest incident where a blood sample can verify infection. [4]

The area around Kinshasa was full of transport links, such as roads, railways and rivers. The area also had a growing sex trade around the time that HIV began to spread. The high population of migrants and sex trade might explain how HIV spread along these infrastructure routes. In the 1960s HIV had made its way to Haiti. At this time, many Haitian professionals who were working in the colonial Democratic Republic of Congo during the 1960s returned to Haiti. [3]

In 1981, a few cases of rare diseases were being reported among gay men in New York and California, such as Kaposi's Sarcoma and a lung infection called *Pneumocystis carinii* Pneumonia (PCP). No one knew why these cancers and opportunistic infections were spreading, but they concluded that there must be an infectious disease causing them. [5,6] At first the disease was called all sorts of names relating to the word 'gay'. [7] It wasn't until mid-1982 that scientists realized the disease was also spreading among other populations such as haemophiliacs and heroin users. [8,9] By September that year, the 'disease' was finally named AIDS. [10]

It was only in 1983 that the HIV virus was isolated and identified by researchers at the Pasteur Institute in France. Originally called Lymphadenopathy-Associated Virus (or LAV) the virus was confirmed as the cause of AIDS, when scientists working at the USA National Cancer Institute isolated the same virus and called it HTLV-III. LAV and HTLV-III were later acknowledged to be the same. Since its first identification almost three decades ago, the pandemic form of HIV-1, also called the main (M) group, has infected at least 60 million people and caused more than 25 million deaths [11].

#### Problem statement- World

In the 30 years since it was first recognized, HIV has spread globally. In the history of public health, HIV/AIDS is unique in terms of how it is spread and attacks the body and because of its widespread and long-lasting demographic, social, economic and political impacts. [12] The World Health Organization estimates that 36.9 million people are currently living with human immunodeficiency virus. [13] In 2015, 17 million HIV-infected individuals worldwide were on antiretroviral drug therapies, which are remarkably effective in suppressing the

virus. Yet, 6000 people a day become newly infected. [13]

The epidemic is not homogenous; the global picture is diverse. In wealthy countries, most of Latin America, Asia, north Africa and the Middle East, infections are concentrated in particular geographical locations and among specific population groups which are often socially and politically marginalized populations, including injecting drug users, men who have sex with men, and commercial sex workers. The more common virus is HIV-1 however, HIV-2 infection is endemic in West Africa but is also found in parts of Europe, North and South America, and India where it is thought to have been introduced secondary to migration and commercial trade ties. [14]

#### Problem statement- SEAR & India

The HIV/AIDS epidemic still remains a major public health concern in the World Health Organization (WHO) South-East Asia region. The region, comprising 11 member states, is home to a quarter of the world's population and has the second largest HIV burden after sub-Saharan Africa. [15] Around 99% of people living with HIV (PLHIV) live in five countries: India, Indonesia, Myanmar, Nepal and Thailand. [15] With 2.1 million (1.7 million–2.6 million) PLHIV, India has the largest number of PLHIV in the region. There were an estimated 180,000 (150,000–210,000) new HIV infections and 130,000 (110,000–150,000) AIDS-related deaths in 2015. [16] HIV prevalence among the adult population aged 15–49 years, 0.3% in 2015, has remained low and stable across the region. [16] ART eligibility criteria also vary among countries. [17] India and Indonesia recommend treatment at 2010 WHO guideline [18] levels of CD4 cell count <350 cells/mm<sup>3</sup> and irrespective of CD4 count for PLHIV co-infected with TB or hepatitis B and pregnant women. India recommends ART irrespective of CD4 cell count for children below 2 years of age. HIV prevalence among all adults (15–49 years) has been declining steadily from 0.38% in 2001 to 0.26% in 2015, while among female sex workers (FSW), men who have sex with men (MSM) and people who inject drugs (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. [19]

#### Evolution of NACP

The first cases of HIV infection in India were detected in 1986 among female sex workers in Chennai. A rapid increase followed in many states. The current national prevalence is about 0.26% compared with a global average of 0.2%, but the figure in most high-risk groups including female sex workers is much higher (up to 7%). [20] New HIV infections reached a peak in 1998 and have since declined by 60%, although the total number of HIV-positive persons remains stable at 2.1 million, largely probably due to the increased life expectancy following antiretroviral therapy. The Indian epidemic is characterized by low levels in the general population and elevated concentrations among high-risk groups. Transmission is mainly heterosexually driven, with differential burdens across the states. The four main drivers of HIV infection in India differ in order from that elsewhere in the world and are commercial sex work, general heterosexual intercourse, injecting drug use and unprotected anal sex between men who have sex with men. There are distinct differences from state to state in the prevalence of HIV, with some around the national norm of 0.21% but others with over 1% infected. India has embarked on a targeted HIV prevention strategy in recent years which is strongly associated with a fall in infection rate in both low- and high-risk groups. [20]

The National AIDS Control Program (NACP) was started in 1992, with the objective of understanding the HIV disease burden and epidemiological trends [21,22]. The program has now evolved into a major public health prevention and treatment program. 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.[23] Over time, the focus has shifted from raising awareness to behavior change, from a national response to a more decentralized response and to increasing involvement of NGOs and networks of PLHIV.

- NACP-I was launched with a credit of USD 84 million and demonstrated its commitment to combat the disease. NACP I was implemented with an objective of slowing down the spread of HIV infections so as to reduce morbidity, mortality and impact of AIDS in the country. National AIDS Control Board (NACB) was constituted and an autonomous National AIDS Control Organization (NACO) was set up to implement the project. The first phase focused on awareness generation, setting up surveillance system for monitoring HIV epidemic, measures to ensure access to safe blood and preventive services for high risk group populations.
- In November 1999, the second National AIDS Control Project (NACP II) was launched with World Bank credit support of USD 191 million. [24] The policy and strategic shift was reflected in the two key objectives of NACP II:
  - (i) To reduce the spread of HIV infection in India, and
  - (ii) To increase India's capacity to respond to HIV/AIDS on a long-term basis.

Key policy initiatives taken during NACP II included:

- Adoption of National AIDS Prevention and Control Policy (2002);
- Scale up of Targeted Interventions for High risk groups in high prevalence states;
- Adoption of National Blood Policy; a strategy for Greater Involvement of People with HIV/AIDS (GIPA);
- Launch of National Adolescent Education Program (NAEP);
- Introduction of counseling, testing and prevention of parent to child transmission (PPTCT) programs;
- Launch of National Anti-Retroviral Treatment (ART) program;
- Formation of a ministerial group for mainstreaming and setting up of the National Council on AIDS, chaired by the Prime Minister; and setting up of State AIDS Control Societies in all states.
- In response to the evolving epidemic, the third phase of the national program (NACPIII) was launched in July 2007 with the goal of halting and reversing the epidemic by the end of project period by scaling up prevention efforts among High Risk Groups (HRG) and General Population and integrating them with Care, Support & Treatment services. Thus, Prevention and Care, Support & Treatment (CST) form the two key pillars of all the AIDS control efforts in India. Strategic Information Management and Institutional Strengthening activities provide the required technical, managerial and administrative support for implementing the core activities under NACP-III at national, state and district levels.
- During NACP-IV, prevention services for high-risk groups and bridge populations (e.g. migrants and truck drivers) were 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 organizations. Targeted-intervention services included needle/syringe exchange programs 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 were initiated. [19] 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. [23] However, concerns such as inequality, stigma and discrimination, especially among HRGs, still remain predominant. [25,26] A multi drug 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. [19] 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. [19]

With the HIV treatment program maturing, there has been a realization that in order to optimize 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. [27] 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 Program, developed guidelines for the diagnosis and treatment of kala-azar in this population. [19]

### Major challenges

Despite of the success, 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 program 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. [19]

Management of HIV in India has significantly improved with many international and local programs supporting prevention and treatment. However, there are areas in India where women and children living with HIV endure a myriad of medical, psychological and social challenges. Women in rural poor areas in India have little control over important aspects of their life. Often, they have little decision-making powers within their families on matters that affect them personally. They find themselves unable to negotiate to protect themselves from harm or risk of infection. Those who are known to have contracted HIV are reluctant to access health care for fear of discrimination and marginalization, leading to a disproportionate death rate in HIV women. India is arguably home to the largest number of orphans of the HIV epidemic. These children face an impenetrable barrier in many Indian societies and endure stigmatization. This situation encourages concealment of the disease and discourages children and their guardians from accessing available essential services. [28] 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.

### Way ahead

In conclusion, despite progression by India in advancing towards prescribed national targets—and as reflected from 2008/2009 India HIV estimates—much remains to be done for halting and reversing HIV considering that in absolute terms; a large proportion of India's populous is infected or affected with HIV. A proliferation of the epidemic must be thwarted with zero new infections made as the principle target. The vision for eliminating the impact of the AIDS epidemic can be real through appropriate generation of strategic information and utilization of knowledge and resources. Planners, program administrators and implementers must utilize the best scientific knowledge that is generated and made available.

The above scenario indicates that long standing and focused prevention interventions can bring about successful control of HIV epidemic as reflected in declines in high prevalence states. However, the strategies and approaches should be customized to the patterns of vulnerabilities in other states where emerging epidemics are observed. Network dynamics among MSM and IDU in newer pockets needs to be closely studied. Equally important is to understand the transmission dynamics at source states from where migration to high prevalence areas is increasingly being recognized as a driver in spread of HIV. Surveillance data helps the program in identifying these pockets and understanding the patterns of vulnerability, thereby guiding appropriate program response to contain HIV epidemic in the country.

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