NACO
National AIDS Control Organisation

सत्यमेव जयते
Ministry of Health & Family Welfare
Government of India

Technical Report

HIV

Sentinel Surveillance Plus 2023

Central Prison Sites

National AIDS Control Organization
And
All India Institute of Medical Sciences, New Delhi
Ministry of Health & Family Welfare, Government of India

Suggested citation

National AIDS Control Organization. HIV Sentinel Surveillance Plus 2023 Central Prison Sites: Technical Report New Delhi: NACO, Ministry of Health & Family Welfare, Government of India; 2024

For additional information on the HIV Sentinel Surveillance Plus 2023-Central Prison Sites: Technical Report, please contact:

Surveillance & Epidemiology: Strategic Information Division
National AIDS Control Organization (NACO)
Ministry of Health & Family Welfare, Government of India
6th and 9th Floor, Chanderlok Building
36, Janpath, New Delhi-110001

National AIDS Control Organisation
India's response to HIV & Sexually Transmitted Infections
Ministry of Health & Family Welfare, Government of India
www.naco.gov.in

Ministry of Health & Family Welfare
Government of India

Technical Report

HIV Sentinel Surveillance plus 2023

Central Prison Sites

National AIDS Control Organisation and All India Institute of Medical Sciences

Ministry of Health & Family Welfare, Government of India

GoI/NACO/Surveillance & Epidemiology/HIV Sentinel Surveillance Plus 2023:Central Prison Sites/16072024

सत्यमेव जयते

वी. हेकाली झिमोमी, भा.प्र.से.
अपर सचिव एवं महानिदेशक
V. Hekali Zhimomi, IAS
Additional Secretary & Director General

आज़ादी का अमृत महोत्सव

राष्ट्रीय एड्स नियंत्रण संगठन
स्वास्थ्य और परिवार कल्याण मंत्रालय
भारत सरकार
National AIDS Control Organisation
Ministry of Health & Family Welfare
Government of India

Foreword

The intersection of public health and the correctional system presents unique challenges and opportunities, particularly in the context of infectious diseases. Incarcerated individuals often represent a marginalized segment of society, with higher rates of health disparities and limited access to healthcare services. Factors such as limited access to healthcare, higher rates of substance use, and engagement in high-risk behaviours contribute to the elevated risk of HIV transmission among the group.

NACP phase-V aims to attain five goals by 2025-26, including: (i) reducing annual new HIV Infections by 80%, (ii) reducing AIDS-related Mortalities by 80%, (iii) eliminating vertical transmission of HIV and syphilis, (iv) promoting universal access to quality STI/RTI services, and (v) eliminating HIV/ AIDS-related stigma and discrimination. Coverage of all prisons and other closed settings through a comprehensive package of services for HIV, STIs and related co-infections is imperative to achieve these goals. NACO has implemented endeavours like Integrated STI, HIV, TB & Hepatitis campaign for expanding health services for incarcerated populations, focusing on STIs, HIV, TB, and Viral Hepatitis within a specific timeline.

Biennial HIV Sentinel Surveillance (HSS) under NACP is a critical endeavour aimed at shedding light on the prevalence, transmission dynamics, risk behaviours, and service uptake to inform intervention strategies to this vulnerable group. This report provides a thorough analysis of magnitude and directions of the HIV, Syphilis, and related coinfections among inmates from the third round of HSS in the group. The report also examines the behavioural factors that contribute to the HIV transmission risk among the inmates. It also explores the uptake of HIV testing and treatment services.

As we confront the multiple public health challenges of HIV, Syphilis and related co-infections among inmates, this report aims to serve as a vital resource for policymakers, healthcare providers, and correctional administrators. By fostering a deeper understanding of the health issues among prisons and other closed settings, we can work towards a healthier world by promoting evidence-based practices. We are confident that the insights and evidence presented herein will contribute to more effective response and improved health outcomes among the inmates.

(V. Hekali Zhimomi)

6th Floor, Chandralok Building, 36 Janpath, New Delhi-110001 Tel. : 011-23325331 Fax : 011-23351700
E-mail : dgoffice@naco.gov.in

Centre for Community Medicine
All India Institute of Medical Sciences
Ansari Nagar, New Delhi-110029, India

डॉ. संजय कुमार राय
प्रोफेसर
Dr. Sanjay K Rai *Professor* &
Focal Person for HSS NI-AIIMS

Phone- **91-11-2659 4416(O)**
91-11-2659 4231(Res), 91- 9999800806 (M)
drsanjay.aiims@gmail.com
sanjayrai@aiims.edu

Message

Robust surveillance and epidemiology are crucial for responding to public health threats. The HIV Sentinel Surveillance (HSS) in India, the most extensive survey across the globe, monitors the prevalence and trend of HIV at National and State levels, provides latest evidence on the HIV epidemic in States/UTs and provides information for prioritization of programme resources and evaluation of programme impact. Over the past three decades, HSS in India has evolved significantly and in 2019, inmates in central jails were added under HSS network.

The 18th round of the HIV Sentinel Surveillance (HSS) among prison inmates was meticulously implemented at 66 prison sites in 27 States/ Union Territories (UTs) of India. With every round, a continuous attempt is made to enhance the surveillance to generate quality data. This round of HSS among prison inmates represents a significant advancement with the inclusion of TPHA followed by RPR, allowing more accurate estimates of syphilis.

I would like to acknowledge the contribution of the Ministry of Health and Family Welfare (MOHFW), National AIDS Control Organisation (NACO) team, which has been ably led by Dr. Chinmoyee Das and Dr. Pradeep Kumar, and guided by the technical expertise of Dr. D. C. S. Reddy, Late Dr. Arvind Pandey and Dr. Shashi Kant. I would also like to acknowledge the contribution of the National Institute (NI), all the Regional Institutes (RIs), all the State AIDS Control Societies (SACS), the entire field teams and the associated HSS testing laboratories for their support in effectively implementing this round of HSS.

This report offers detailed evidence of the socio demographic and behavioural characteristics related to HIV/ AIDS epidemic, as well as syphilis, which have critical policy implication.

I extend my appreciation to all the stakeholders involved for the successful conduction of this round of HSS and timely publication of this technical report.

[Sanjay K. Rai]

Dr. Chinmoyee Das
Public Health Specialist, Grade-I
Head, Strategic Information
c.das@gov.in

Government of India
Ministry of Health & Family Welfare
National AIDS Control Organisation
6th & 9th Floor, Chandralok Building,
36 Janpath, New Delhi – 110 001
Tel.: 011-43509994

Acknowledgement

The 2023 round of HIV Sentinel Surveillance (HSS) was implemented at 66 prison sites among prison inmates by National AIDS Control Organization (NACO) under the Ministry of Health and Family Welfare, Government of India. NACO extends its gratitude to all stakeholders for their invaluable support and timely efforts in ensuring the successful implementation of this surveillance round.

Leadership to the surveillance and epidemiology under NACP is provided by Ms V. Hekali Zhimomi (Addl. Secretary & DG, NACO, MoHFW, GoI), Dr. Sanjay Mehendale (Former Addl. DG, ICMR and Co-Chair, TRG-S&E) and Shri Nikhil Gajraj (Joint Secretary, NACO, MoHFW, GoI). We place on record our sincere gratitude to the leadership for their continuous advice and support, enabling a continuously evolving system. NACP's Technical Working Group (S&E), under the Chairpersonship of Dr. DCS Reddy (Former HoD, Community Medicine, BHU, UP), and Co-Chairpersonship of Dr. Shobini Rajan (CMO-SAG, NACO) was instrumental in reviewing and recommending the method and findings of the 2023 round. Late Prof. Arvind Pandey (Former Director, ICMR NIMS, New Delhi), Dr. Shashi Kant (Former Head, CCM, AIIMS, New Delhi), and Dr Sanjay Kumar Rai (Focal Person, National Institute for NACO's S&E, AIIMS New Delhi) provided critical inputs and technical guidance in all phases since conceptualization till publication of results and beyond.

Programmatic context for the exercise and valuable insights provided by Dr. Anoop Kumar Puri (DDG, NACO), Dr. Uday Bhanu Das (Sr. CMO-SAG, NACO), Dr. Shobini Rajan (CMO-SAG, NACO), Dr. Bhawani Singh Kushwaha (Deputy Director, NACO), and Dr. Sai Prasad Bhavsar (Deputy Director, NACO) have been critical in completion of the activity. As the role of laboratories evolved significantly since 2021 round; contribution of Dr. Bhawna Rao (DD, NACO) and Dr Shivali Kamal (NACO) in completion of the activity is acknowledged. Dr Pradeep Kumar (NACO) anchored the implementation of the 3rd round of HSS among prison inmates and developed this technical report with support from Dr Subrata Biswas (NACO) and Dr Nidhi Priyam (NACO). Ms Shreena Ramanathan and Mr Lalit KS. Kharyat (Technical Experts) reviewed the data to ensure accuracy.

During the process, HIV Surveillance team at AIIMS, New Delhi (Dr. Sanjay K. Rai, Dr. Shreya Jha, Mr. Nishakar Thakur), ICMR-NITVAR (Dr. Sheela Godbole, Dr. Rashmi Sindhe, Dr. Garima Meena), ICMR-NIE (Dr. A. Elangovan, Dr. Santhakumar Aridoss), ICMR-NIRBI (Dr. Shanta Dutta, Dr. Alok K. Deb, Ms Piyali Ghosh, Mr Pankaj Kumar Khan), PGIMER (Dr. P.V.M. Lakshmi, Dr. Chandrakanta, Dr Shivani), RIMS (Dr. H. Sanayaima Devi, Dr. Tamphasana, Mr Rishikesh), ICMR NIRDHDS (Dr H K Chaturvedi, Dr Vishal Deo, Dr Barnali Deka), AIIMS Bhubaneswar (Dr Arvind Kumar Singh, Dr Subhakanta Sahu, Dr Hrushikesh Das), and AIIMS Jodhpur (Dr Pankaj Bhardwaj, Dr Vibha Joshi) shared field experiences, critically reviewed the documents, tools and technical report towards their finalization, led the regional training and supervision and guided State training. Dr Sandhya Kabra, Dr Partha Rakshit and Dr Hema Gogia (National Programme for Surveillance of Viral Hepatitis, MoHFW, GoI) provided inputs on Hepatitis B and Hepatitis C-related aspects.

The SIMU team at SACS under the leadership of their Project Directors coordinated with all stakeholders ensuring successful and smooth implementation, led the site-level training, arranged required consumables for HSS sites and designated testing laboratories and took leadership for trouble shootings of various operational aspects at the State level. NACO acknowledges the contribution of Project Directors of SACS, Prison authority, State HSS focal persons, Apex laboratory at ICMR NARI, Pune (Dr Ashwini Shete and Ms Varsha Kale), Central Team Members (CTM), State Supervisory Team Members (SST) and all stakeholders in the successful implementation of the 3rd round of HSS Plus among prison inmates.

Last but not the least, the credit for successful implementation goes to our Prison site personnel and designated HSS testing laboratories for timely completion of this activity, while adhering to best possible quality standards. NACO sincerely thanks all the field personnel engaged in this activity for their contribution in implementing the 2023 round of HSS among prison inmates.

(Dr. Chinmoyee Das)

Contents

ABBREVIATIONS

AIDS	Acquired Immuno-Deficiency Syndrome
AIIMS	All India Institute of Medical Sciences
ANC	Antenatal Clinic
ART	Anti-Retroviral Therapy
BMW	Bio-Medical Waste
BP	Bridge Population
CAB	Community Advisory Board
CI	Confidence Interval
COE	Centre of Excellence
DAPCU	District AIDS Prevention and Control Unit
DFTS	Data Form Transportation Sheet
EC	Ethics Committee
EQAS	External Quality Assurance System
FSW	Female Sex Worker
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HRI	High Risk Individuals
HIV	Human Immuno-deficiency Virus
HRG	High Risk Group
HSS	HIV Sentinel Surveillance
H/TG	Hijra/ Transgender people
IBBS	Integrated Biological and Behavioural Surveillance
ICMR	Indian Council of Medical Research
ICMR-NIE	ICMR-National Institute of Epidemiology
ICMR-NIRBI	ICMR-National Institute for Research in Bacterial Infections
ICMR-NIRDHDS	ICMR-National Institute for Research in Digital Health and Data Science
ICMR-NITVAR	ICMR-National Institute of Translational Virology and Research
ICTC	Integrated Counselling and Testing Centre
ICF	Informed Consent Form
IDU	Injecting Drug User
ILC	Inter Laboratory Comparison

LAT	Linked Anonymous Testing
LT	Laboratory Technician
LDT	Long Distance Trucker
M&S	Monitoring and Supervision
MSM	Men Who Have Sex with Men
NACO	National AIDS Control Organization
NACP	National AIDS & STD Control Programme
NI	National Institute
NGO	Non-Governmental Organization
NRL	National Reference Laboratory
N/S	Needle Syringe
NSP	National Strategic Plan
ORW	Outreach Worker
PGIMER	Post Graduate Institute of Medical Education and Research
PIS	Participant Information Sheet
PrEP	Pre-Exposure Prophylaxis
RI	Regional Institute
RIMS	Regional Institute of Medical Sciences
RPR	Rapid Plasma Reagin
SACS	State AIDS Control Society
S &D	Stigma & Discrimination
SIMS	Strategic Information Management System
SMM	Single Male Migrant
SOP	Standard Operating Procedure
SRL	State Reference Laboratory
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
STS	Sample Transportation Sheet
TI	Targeted Intervention
TRG	Technical Resource Group
TWG	Technical Working Group
UNAIDS	Joint United Nations Programme on HIV and AIDS
UT	Union Territory

EXECUTIVE SUMMARY

The HIV surveillance, initiated in 1985, has become a crucial strategic information function, supporting evidence-based decision-making under the National AIDS and STD Control Programme (NACP) of the Government of India. In 2019, inmates at the central jails were included as one of the HIV surveillance population groups under NACP. In 2023, the 18thround of HIV Sentinel Surveillance (HSS) was conducted among prison inmates at 66 prison sites in 27 States/Union Territories (UTs) of India. In comparison, the 17th round of HIV Sentinel Surveillance (HSS) in 2021, was carried out at 53 surveillance sites in 26 States/ UTs. The methodology remained consistent with the previous round, with some enhancements such as the inclusion of treponemal test followed by RPR to get more accurate estimates of syphilis prevalence among prison inmates. The biospecimen collected from eligible and consenting inmates were tested for four biomarkers: HIV, Syphilis, Hepatitis B Virus (HBV), and Hepatitis C Virus (HCV).

Overall, 25,824 bio-behavioural samples were collected, with 38.8% of the respondents being convicted inmates. The demographic profiles of the respondents varied significantly by States/UTs and type of imprisonment. The mean age of the inmates recruited in HSS Plus 2023 was 35.5 years. About one-third of all the recruited inmates reported never being married, while a small proportion (4.5%) were divorced/ separated/ widowed. Most inmates were literate (88% among undertrial and 84.4% among convicted). Additionally, around one-third (32%) had more than ten years of education.

Overall, three-fourths of inmates recruited in HSS Plus 2023 reported having heard of HIV/AIDS, and two-third were aware that HIV can be transmitted through the reuse of needles. These results are broadly similar to those from the previous rounds of surveillance. However, there was a significant improvement in comprehensive and correct knowledge about HIV/AIDS among inmates in comparison with HSS 2019. Less than three-fifths (57.6%) of recruited inmates had ever tested for HIV and a little more than two-fifth (43.2%) were tested in the last 12 months. There was a significant increase in reported HIV testing in the last 12 months (43.2% in 2023 vis-a-vis 27.6% in 2021). Fifty-five percent of HIV-infected inmates reported being aware of their HIV positive status. Among inmates who knew they were HIV positive, 92.5% were on ART. These proportions were similar to those reported in in HSS Plus 2019 and HSS Plus 2021. Overall, 50.9% of all HIV-infected inmates were on ART.

Around 3.9% of the recruited inmates reported that inmates in their prison inject drugs for pleasure. When asked about their own behaviour, a small proportion (5.2%) of total recruited inmates reported ever having injecting drugs for pleasure. Among those, with a history of injecting drugs for pleasure, almost two-thirds (65%) reported using sterile needle/ syringe during their last injecting episode, while one-fourth (26.3%) reported sharing used needles/ syringes. More than four-fifths of the inmates reported ever having had sex with a partner. Overall, around 6.8% of the recruited inmates (7.8% of convicts and 6.1% of undertrial) reported that inmates in their prison engage in sexual acts with other prisoners. Among sexually active inmates, the last reported sexual partner was almost universally a female, including 4.4% who reported paid female partners and 3.5% who reported casual female partners. Reported condom use during last sexual act was 17.1% with a regular female partner, 43.5% with a casual female partner and 62.9% with a paid female partner.

Nationally, the weighted HIV seroprevalence among inmates was 1.99% (95% CI: 1.82-2.16). Higher HIV prevalence was observed among inmates in the younger age groups compared to older age groups (18-24 years: 2.50%, 25-29 years: 2.09%, 30-39 years: 2.04%, 40-49 years: 1.82%, 50 years and above: 1.19%). HIV prevalence was inversely associated with education; the prevalence decreased as education level

increased. Higher HIV prevalence was noted among illiterate inmates and those with education up to 5th standard, while the lowest prevalence was noted among those with post-graduate education (0.88%). The HIV prevalence was at 2.48% among undertrial inmates compared to 1.11% among convicted inmates. The inmates who were currently married had lower HIV prevalence than inmates who were never married (1.59% vs 2.63%). Inmates with a current prison duration of less than three months had a higher prevalence than those imprisoned for three months or more. Additionally, inmates who had been in prison two or more times had higher HIV prevalence.

Highest HIV prevalence was noted in State of Mizoram [21.50% (95% CI: 17.47-25.53)], followed by Punjab [9.25% (95% CI: 7.61-10.89)], Nagaland [6.64% (95% CI: 3.50-9.78)], Tripura [6.00% (95% CI: 3.67-8.33)], Meghalaya [5.50% (95% CI: 3.27-7.73)], Assam [4.17% (95% CI: 3.04-5.30)], Chandigarh [3.25% (95% CI: 1.51-4.99)], Manipur [2.99% (95% CI: 0.00-7.06)], Haryana [2.75% (95% CI: 1.62-3.88)], Telangana [2.75% (95% CI: 1.15-4.35)], Delhi [2.63% (95% CI: 1.52-3.73)], Andhra Pradesh [2.58% (95% CI: 1.69-3.48)], and Uttar Pradesh [2.50% (95% CI: 1.74-3.26)]. The reverse testing algorithm was followed for syphilis testing in this round of HSS. Treponemal assay was performed first for all serum samples. RPR (semiquantitative) was done on samples found positive by TPHA. TPHA-reactive sero-positivity was found 1.58% (95% CI: 1.42-1.75) and sero-prevalence of syphilis (TPHA followed by RPR reactive) was 0.71% (95% CI: 0.60-0.82). In terms of co-infections, the seroprevalence of HIV-Syphilis (TPHA-reactive) among inmates was 0.16% (95% CI: 0.11-0.21), while the sero-prevalence of HIV-HBV was 0.15%. (95% CI: 0.10-0.20). The sero-prevalence of HIV-HCV among inmates was 1.23% (95% CI:1.09-1.38). Among the HIV positive respondents, the sero-positivity for Syphilis (TPHA-reactive) was 7.63% (95% CI: 5.23-10.02). The seroprevalence for HBV and HCV among the HIV positive respondents was 6.99% (95% CI:4.69-9.29) and 58.17% (95% CI:53.72-62.63), respectively.

HSS 2023 among inmates provides weighted prevalence and the inclusion of treponemal test followed by RPR to get more accurate estimates of syphilis prevalence among prison inmates across 66 central prisons located in 27 States/UTs. Starting from the 17th round of HSS, the report also included data on the current seroprevalence levels of HBV and HCV among inmates. While in-depth analysis of this data could offer enhanced insights into the epidemics of HIV, Syphilis, HBV and HCV within correctional facilities, the current report provides critical evidence for collaborative actions aimed at providing holistic and comprehensive care for prevention, identification, and treatment within prison settings, aligning with the objectives outlined in NACP-Phase V.

1. INTRODUCTION

1.1 Background

India's response to the HIV/AIDS pandemic started as early as 1985, marked by the initiation of sero-surveillance, which detected the first case in April 1986. As sero-surveillance expanded, HIV presence was detected in various regions of the country. Given the context, the first phase of the National AIDS and STD Control Programme (NACP) was launched in 1992, to combat the spread of HIV infection and decrease morbidity, mortality, and impact of HIV/AIDS in the country. Since then, the country has completed four phases of effective implementation of the programme. Currently, India is in the midst of the fifth phase of NACP, which spans five years, from 1st April 2021 to 31st March 2026, with a total outlay of Rs. 15471.94 crore. This phase continues the nation's commitment to combating HIV/AIDS, focusing on prevention, treatment, and support measures to address the multifaceted challenges posed by the pandemic.

The HIV sero-surveillance, launched in 1985, gradually evolved into HIV Sentinel Surveillance (HSS) under NACP. HSS was first launched in 1994 and then formalized into the annual surveillance system in 1998. Over time, this system gradually evolved into one of the largest and most comprehensive HIV surveillance systems providing evidence on the level and trends of HIV, syphilis and related behaviours informing the national programme for suitable actions. The specific objectives of the HSS are mentioned below:

1. To provide the latest status of the level and trend of the HIV epidemic among the surveillance population,
2. To provide evidence on the geographical spread of the HIV infection and to identify emerging pockets,
3. To provide information for prioritization of Programme resources and evaluation of Programme impact, and
4. To contribute to the estimation and projection of the HIV epidemic at the national, state and district level

Table 1.1: State/UT wise prison sites for HSS Plus 2023 among inmates

State/UT	No. of Prison Sites
Andhra Pradesh	3
Assam	3
Bihar	3
Chandigarh	1
Chhattisgarh	4
Delhi	2
Gujarat	4
Haryana	2
Himachal Pradesh	1
Jharkhand	2
Karnataka	4
Kerala	2
Madhya Pradesh	3
Maharashtra	4
Manipur	1
Meghalaya	1
Mizoram	1
Nagaland	1
Odisha	2
Punjab	3
Rajasthan	4
Tamil Nadu	4
Telangana	1
Tripura	1
Uttar Pradesh	4
Uttarakhand	2
West Bengal	3
India	66

The methodology for the 18th round of HSS among inmates remained same as that in earlier rounds with few enhancements: inclusion of treponemal test followed by RPR to get more accurate estimates of syphilis prevalence among inmates.

This report presents the findings from the HSS Plus 2023 round among inmates at central prison sites. The current round was implemented across 66 central prisons located in 27 States/Union Territories (UTs) of India (Table 1.1). However, Sites Dimapur in Nagaland and Imphal in Manipur could not achieve minimum sample size becoming invalid sites. These findings are expected to provide critical inputs to the NACP and its collaborators in planning, implementing, and evaluating national responses among prison inmates in future. The methodological overview of the HSS Plus 2023 among prisoners has been provided in Chapter 2, while the main findings by the state are presented in Chapter 3 of the report. Chapter 4 discusses the key findings of the report in the context of the NACP.

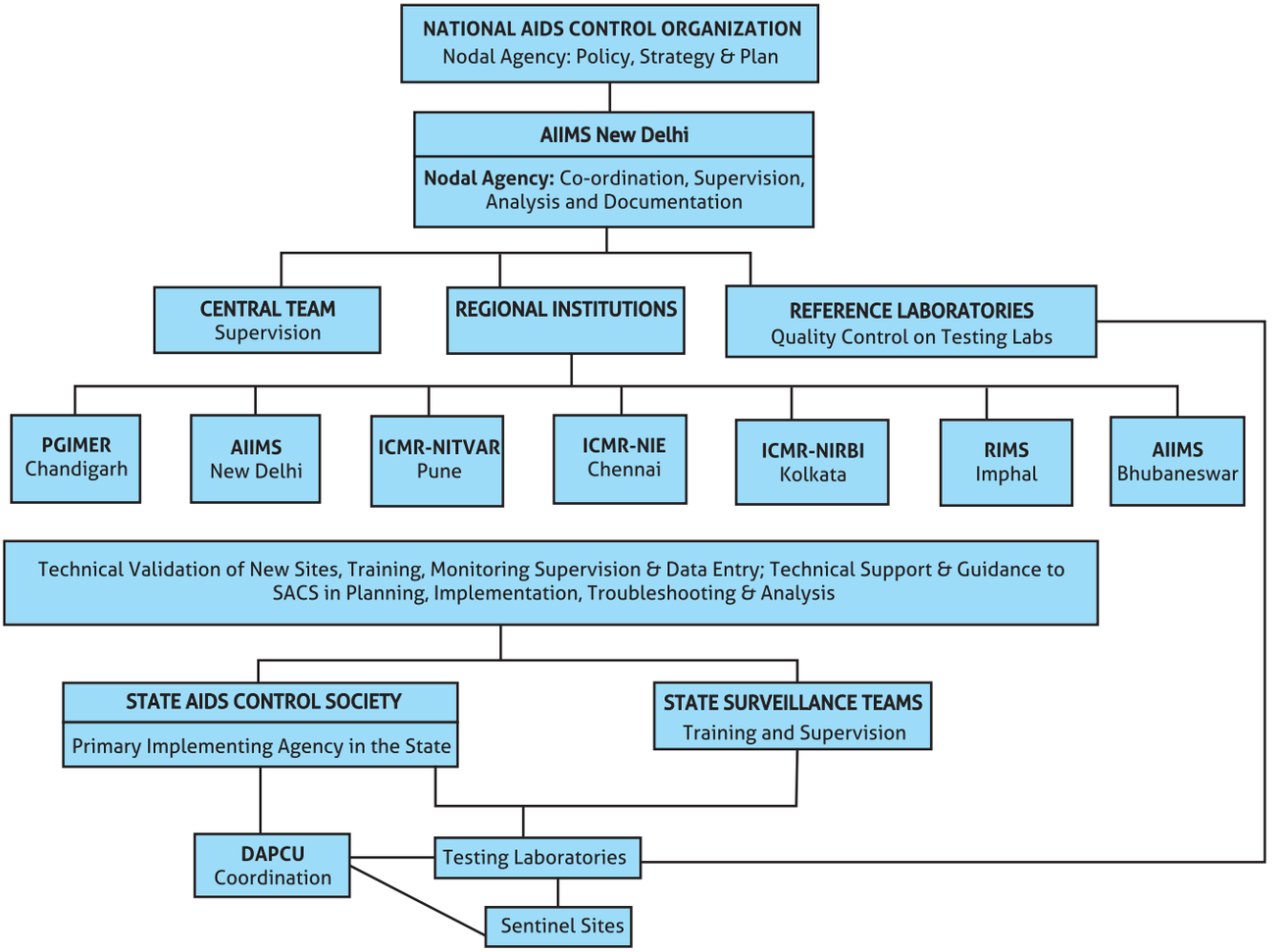
1.2 Implementation Structure

HIV Surveillance and Epidemiology (S&E) under the NACP is designed, implemented, and monitored through strong institutional arrangements at the national, regional, state, and district levels (Figure 1.1). The Surveillance and Epidemiology division, part of the Strategic Information Management unit at NACO, serves as the central body for overseeing HIV surveillance under NACP. NACO's Technical Resource Group (TRG) and Technical Working Group (TWG), which consist of independent and institutional experts from various disciplines, provide guidance and direction for S&E efforts within the NACP.

Seven government public health institutes including AIIMS-New Delhi, ICMR-NITVAR-Pune, ICMR-NIE-Chennai, ICMR-NIRBI-Kolkata, PGIMER-Chandigarh, RIMS-Imphal, and AIIMS-Bhubaneswar, lead the technical support for implementation through training and supportive supervision. These institutes ensure high quality of implementation by providing reference materials such as operational manuals, wall charts and data collection tools. Additionally, they support the analysis and dissemination of HIV burden estimations reports as one of the outcomes under each cycle of HSS.

State AIDS Control Societies (SACS) in each State/UTs is the primary agency responsible for the implementation of HIV Surveillance activities. Under the leadership of SACS, District AIDS Prevention and Control Units (DAPCUs) oversee the implementation of HSS activities at the district level. Laboratory support for Surveillance is provided by a network of testing and reference laboratories. The reference laboratories provide external quality assurance by repeat testing of all positive blood specimens and 5% of the negative specimens collected during surveillance for a given biomarker.

Figure 1.1: Implementation Structure of HIV Surveillance under NACP



2. METHODOLOGY

The methodology for the third round of HSS among prisoners remained consistent with that of previous rounds, aligning with the methodology used during HSS Plus 2019 and 2021, with a few enhancements. Notably, there was an inclusion of a treponemal test followed by RPR to get more accurate estimates of syphilis prevalence among inmates.

2.1 Eligibility criteria

Inclusion criteria	• Male convicted/undertrial inmates aged 18 years or above
Exclusion criteria	• Already approached and administered informed consent once in the current round of surveillance

2.2 Sample size and sampling duration

At each prison site, a sample of 400 was targeted to be achieved within a three-month surveillance period[1]. Central jails were selected as the site for HSS Plus as they were expected to have enough inmates to achieve 400 samples. Moreover, the central jails were expected to have an operational healthcare structure to facilitate the establishment of a sustainable biennial surveillance system.

For each HSS Plus site, the recommended maximum sampling duration was three months. If a site achieved its allotted target sample size within a period of less than three months, collection of samples was stopped at that site. However, the data collection period was extended on a case-to-case basis at some sites, after reviewing the reasons for delays and the feasibility of achieving the desired sample size in a reasonable extension period.

2.3 Sampling methodology

A simple Random sampling method was adopted for HSS Plus 2023 among prisoners, similar to the previous rounds. As part of the process, the surveillance sites shared a master list of male inmates (convicts/ undertrial prisoners). This list contained only (i) the inmate's unique prisoner ID number, (ii) inmate type (convicts/ undertrial) and (iii) the age of each inmate. The regional institutes for surveillance randomly selected 400 inmates from the master list to be approached for participation in HSS Plus. The selected inmates were approached, assessed for eligibility and if eligible were administered informed consent. All sampled and eligible inmates who provided their consent for participation were recruited in HSS Plus. A copy of the informed consent form is available in Annexure 1.

At HSS Plus sites where the total number of inmates was 500 or less, the 'Take All' approach was followed.

[1]National AIDS Control Organisation and National Institute for HIV Surveillance, All India Institute of Medical Sciences, New Delhi (2023). HIV Sentinel Surveillance Plus 2023: Operational Manual for Central Prison sites

2.4 Questionnaire

A brief bilingual data form with 40 questions under six sections was used for the collection of information (Annexure 2). Individual data forms were used by facility staff responsible for implementing the HSS Plus to collect the data through one-to-one interviews in a confidential setting. The data form was unlinked and anonymous as it did not have any personal identifiers and had only a surveillance sample ID.

The first section had six questions about basic socio-demographic features (age, current marital status, education) and imprisonment characteristics (inmate type, duration of current imprisonment and previous history of imprisonment).

The second section had seven questions about HIV/AIDS knowledge related to transmission, prevention, and misconceptions.

The third section had four questions about HIV testing history, the result of the last test for those who reported prior HIV testing history and anti-retroviral therapy (ART) uptake for those who reported to be HIV positive.

Section four had five questions about the injecting drug behaviour; as this is illegal, respondents were first asked about the prevalence of this behaviour within their setting. This was done to understand how common this behaviour might be. Subsequently, recruited inmates were asked about their injecting drug behaviours to measure the prevalence of behaviour and related practices among the inmates.

Section five had five questions about sexual behaviours and condom use practices. Like the injecting practices, respondents were first asked about the sexual behaviours of the inmates in general, followed by their own sexual behaviours and condom use practices.

The sixth section had 13 questions on viral hepatitis. This included questions on Hepatitis in general, followed by questions on Hepatitis B and Hepatitis C.

2.5 Blood specimen collection methods and testing approach

From the sampled, eligible, and consenting inmates, serum blood specimens were collected. Two aliquots were prepared from the blood specimen collected: One for the Integrated Counselling and Testing Centre (ICTC) under the routine HIV Counselling and Testing Services (HCTS) of the programme and the second for HSS Plus.

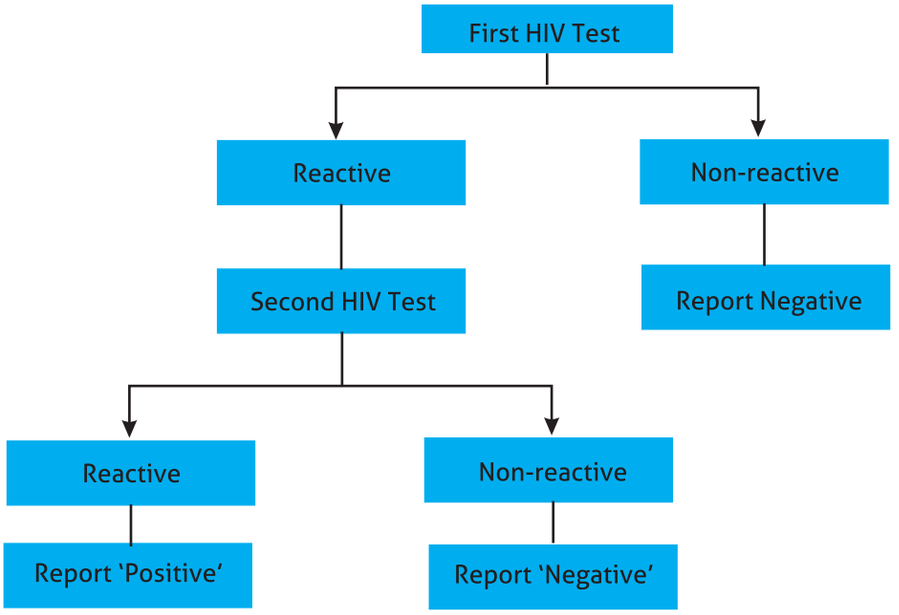
The aliquot for the ICTC was labelled with name, age, ICTC sample number, date of collection etc. as per the routine practices. It didn't have the surveillance sample ID. The aliquot was tested at linked ICTC for HIV/ Syphilis; the test report was shared with the inmate, and he was linked with treatment services if the result was positive.

The HSS Plus aliquot was labelled only with the sentinel site code, sample number and date of collection (unlinked anonymous) and transported to the State Reference Laboratory (SRL). The bio-specimen collected during HSS Plus among prison inmates was tested for four diseases: HIV, Syphilis, HBV, and HCV. The testing was done at SRLs established under NACP across the country. In exceptional scenarios, depending upon the local need, non-SRL laboratories were used in HSS Plus 2023.

For HIV, a two-test strategy for HIV was adopted, as in the earlier rounds (Figure 2.1). The first test is of high sensitivity and the second one is of high specificity and confirmatory in nature. The second test was

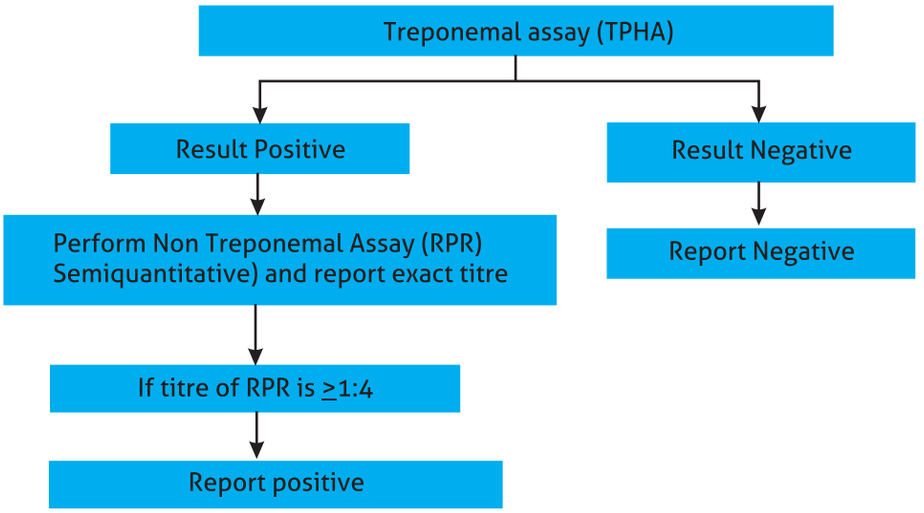
done only if the first test was found to be reactive. A sample was declared as positive only when both the test results were reactive.

Figure 2.1: Testing protocol for HIV among prison inmates, Prison HSS Plus 2023



The reverse testing algorithm was followed for Syphilis testing. TPHA test was done on all the serum samples. RPR (semiquantitative) was performed on samples found positive by TPHA. The exact titre of the RPR test was reported.

Figure 2.2.Testing protocol for Syphilis among prison inmates, Prison HSS Plus 2023



For Hepatitis B, one test strategy was followed. Serum samples were tested for Hepatitis B surface antigen (HBsAg) using rapid test kits. If the test result was reactive, the sample was reported as HBV positive. For HCV also, one test strategy was followed. The samples were tested for anti-hepatitis C virus (HCV) antibodies using rapid test kits. If the test result was reactive, the sample was reported as HCV-positive.

2.6 Inter-laboratory comparison (ILC)

ILC is a key component of the quality assurance mechanism under HSS Plus. Under ILC, all positive specimens for any of the biomarkers (HIV, HBV, HCV, and Syphilis) and 5% of negative specimens are transported to a mapped reference laboratory. At the reference laboratory, all positive specimens are tested for the biomarkers for which it has been reported as positive. The negative samples (not reported as positive for any of the four biomarkers) are tested for all four biomarkers following the same testing protocols.

Table 2.1. presents the results of ILC among prison inmates for four biomarkers in HSS Plus 2023. For Syphilis (TPHA followed by RPR), among the total positive samples which were subjected to ILC by reference laboratory, 91.75% of the test had concordant results.

There was one testing laboratory in Karnataka which had a significant proportion of discordant results for samples which were positive for syphilis. For a given biomarker, if the discordant results were more than 10% for a given testing laboratory in ILC, the test results for all the sites associated with that laboratory were considered invalid for the biomarker concerned.

Table 2.1 ILC results among prison inmates, Prison HSS Plus 2023

Biomarkers	Positive Samples		Negative Samples	
	Subjected to ILC (Number)	Concordant Results (Percentage)	Subjected to ILC (Number)	Concordant Results (Percentage)
HIV	570	98.95%	1,276	100.00%
Syphilis	206	91.75%	1,093	98.81%
HBV	411	98.54%	1,262	99.45%
HCV	1,290	98.76%	1,279	99.77%

2.7 Ethical considerations

Under the HSS Plus 2023 among prisoners, written Informed consent was obtained from sampled and eligible inmates who were willing to participate in HSS. A Participant Information Sheet (PIS), provided in local language, outlined the objectives of the sentinel surveillance, expectation from the respondent; process for return of blood sample results, confidentiality measures and voluntary nature of participation. As part of the process, respondents were shown all the consumables/ items used for blood sample collection and were assured that confidentiality would be strictly maintained as no individual's name would be linked to the HSS Plus specimen or data form. No pressure of any form was put on the eligible inmate, and he was given free choice to agree or refuse to participate in surveillance.

If the eligible inmate was literate, PIS and the Informed Consent Form (ICF) were given to him to read through them. If the eligible inmate was illiterate, PIS and ICF were read out to him in the presence of a literate witness.

A respondent was asked if he had any questions/ doubts or required clarifications. Any queries were addressed immediately and adequately. After addressing all the concerns, if the respondent chose not to participate in the surveillance, the reason for refusal was recorded.

HSS Plus data form of the consented inmate was handled with utmost confidentiality. Neither filled nor blank data forms were managed by anyone outside the surveillance team. The HSS Plus data form was digitalized at RIs using the Integrated and Enhanced Surveillance & Epidemiology (IESE) web portal under NACP and it was completely unlinked anonymous.

2.8 Data Management, Weighting and Analysis

Data collection for HSS Plus 2023 was conducted using paper-based tools. Data recording was done by counsellor, with all data forms checked for completeness and accuracy daily by the site in-charge before signing them. These forms were also checked by the field supervisors during their field monitoring and supportive visits. The data forms were periodically transported to regional institutes where they were first checked for completeness and accuracy, then entered into the HSS module of the IESE web portal.

Laboratory results were shared separately by laboratories with RIs in a standard format and periodically entered into the IESE web portal. The portal linked the laboratory results with the data forms using the unique sample IDs assigned.

Each data form underwent double data entry by two data entry operators in IESE web portal. An in-built tool in the portal compared the two entries and, any discrepancies identified were corrected by consulting the original paper tool. After resolving discrepancies, the database was 'frozen' and a cleaned master file was created. For the analysis, only valid records (those meeting age eligibility criteria and having HIV test results), were considered. The data was then analyzed using Statistical Package for Social Sciences (SPSS).

The weighting protocol addressed the differential probabilities of respondent selection and was used to present biological prevalence in the report, as the HSS sites were not selected using PPS. Information required for calculating weights was collected through the HSS register during field work, where the number of potential respondents and the number interviewed, were recorded. Selection probability of individual respondents at each HSS site was used to calculate site level weights. The weights were normalized to ensure that the total observations were equal to the sample size. The standardized weight was calculated taking into account the total sample size, using the general standardized weight calculation method.

Based on the design, weights for State and national analysis were calculated and applied as required. The analysis of HSS data was conducted using SPSS. Weighted prevalence was presented for biological indicators at both state and national levels. The sample size (N) provided in all the tables of this report are unweighted counts at the state and national level. Behavioural indicators are unweighted, whereas the proportions/ estimates of biological indicators provided in all tables are weighted. State estimates have been weighted using state level weights and national estimates have been weighted using national level weights.

3. FINDINGS

This section presents key findings from the 2023 round of sentinel surveillance among the inmates in central jails. Initially, the respondents' background characteristics are presented including imprisonment characteristics, age, current marital status, and education status. Following this, the report covers HIV/AIDS related knowledge, HIV/AIDS related service uptake, injecting drug use practices, sexual behaviour and condom use practices. Finally, the prevalence/sero-positivity of HIV and syphilis is presented nationally and by State/UTs among inmates in central prisons to provide the big picture perspective.

3.1 Response Rate

Table 3.1 shows the State/UT wise response rates for the 2023 round of HSS Plus at central prison sites. The final sample size of 25,824 was achieved with a response rate of 97.9 percent. The response rate was more than 90% in every State/UT except for Tripura. In Manipur and Nagaland, the number of inmates was low at the central prisons during the surveillance period. Therefore, a take all approach to sampling was adopted in both the states.

Table 3.1. Response Rate by State/UT wise, Central Prison sites: HSS Plus 2023

State/UT	Final sample achieved size	Response Rate (%)
Andhra Pradesh	1200	99.6
Assam	1200	99.3
Bihar	1200	100.0
Chandigarh	400	100.0
Chhattisgarh	1591	95.9
Delhi	800	99.3
Gujarat	1599	91.4
Haryana	800	97.6
Himachal Pradesh	400	98.3
Jharkhand	792	100.0
Karnataka	1552	100.0
Kerala	800	100.0
Madhya Pradesh	1200	99.8
Maharashtra	1600	98.8
Manipur*	67	-
Meghalaya	400	91.9
Mizoram	400	92.7
Nagaland*	241	-
Odisha	800	97.4
Punjab	1200	99.7
Rajasthan	1582	97.4
Tamil Nadu	1600	100.0
Telangana	400	97.5
Tripura	400	83.7
Uttar Pradesh	1600	98.8
Uttarakhand	800	100.0
West Bengal	1200	99.4
India	**25824**	97.9

**In Manipur and Nagaland, less than 75% of the target sample size was achieved. Finding of the results in Manipur and Nagaland among inmates shall be interpreted with caution.*

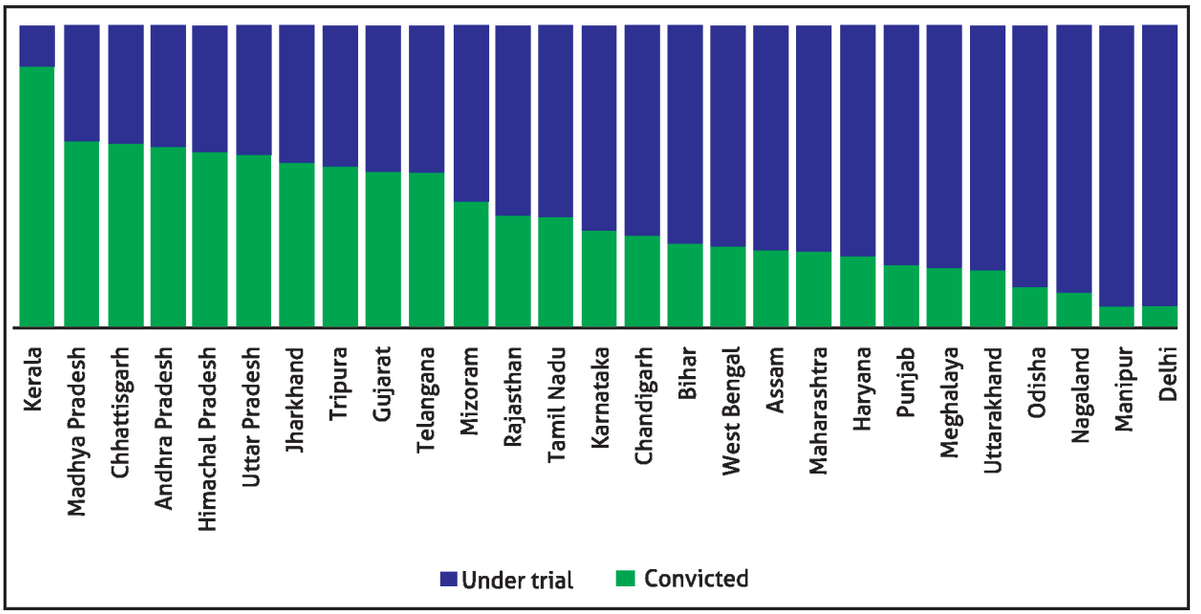
3.2 Respondent's Profile

The percentage distribution of the undertrial inmates vis-à-vis convicted in the HSS Plus 2023 sample was 61.2% and 38.8%, respectively (Figure 3.1). The distribution is almost similar to the HSS Plus 2021, which had 59.1% and 40.1% convicted inmates. More than 60% of the respondents were convicted inmates In Kerala (86.7%), Madhya Pradesh (61.7%), and Chhattisgarh (60.8%). In Delhi, 96.7% of the recruited inmates were undertrial, followed by 95.5% in Manipur, 88.8% in Nagaland, 87.2% in Odisha, 81.4% in Uttarakhand and 80.5% in Meghalaya (Table 3.2).

Around three-fifths of inmates (61.2%) recruited in HSS Plus 2023 had been in prison for one year or more. There were a significantly high proportion of the sampled inmates who reported

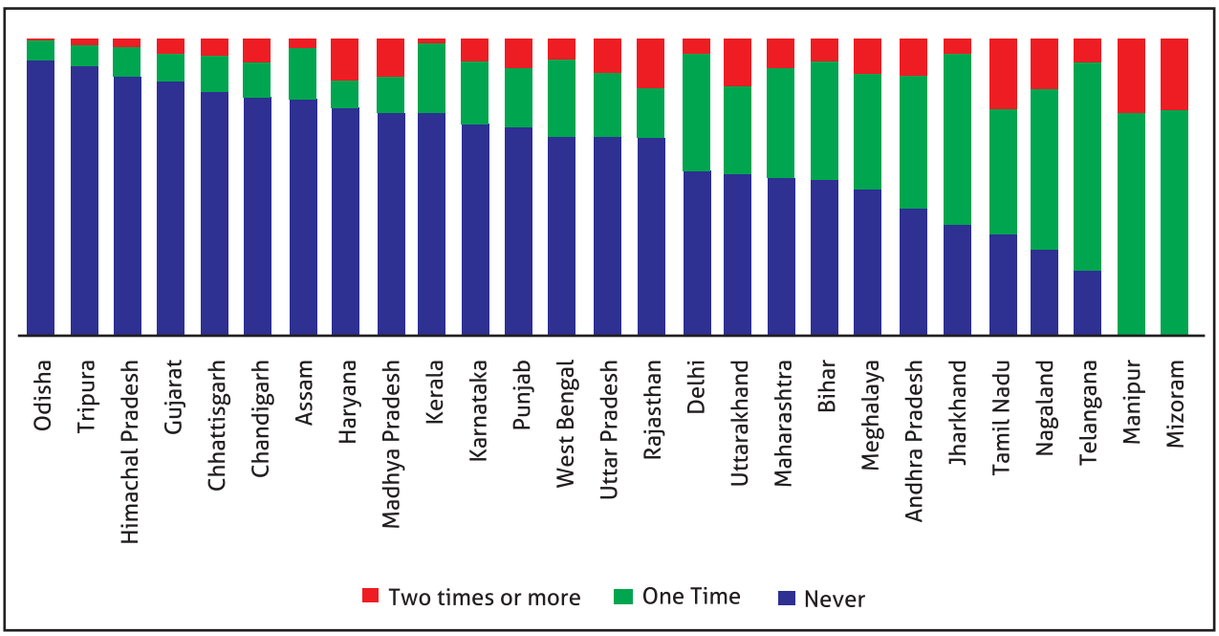
being in prison for more than one year in Himachal Pradesh (83%), Kerala (80.3%), and West Bengal (75.9%). On the other hand, almost three-fifth (59.6%) of the inmates in Nagaland had been in prison for less than three months, followed by 28.9% in Tripura and 24.6% in Manipur.

Figure 3.1: Percentage distribution of convicted and undertrial inmates by States/UTs, Prison HSS Plus 2023



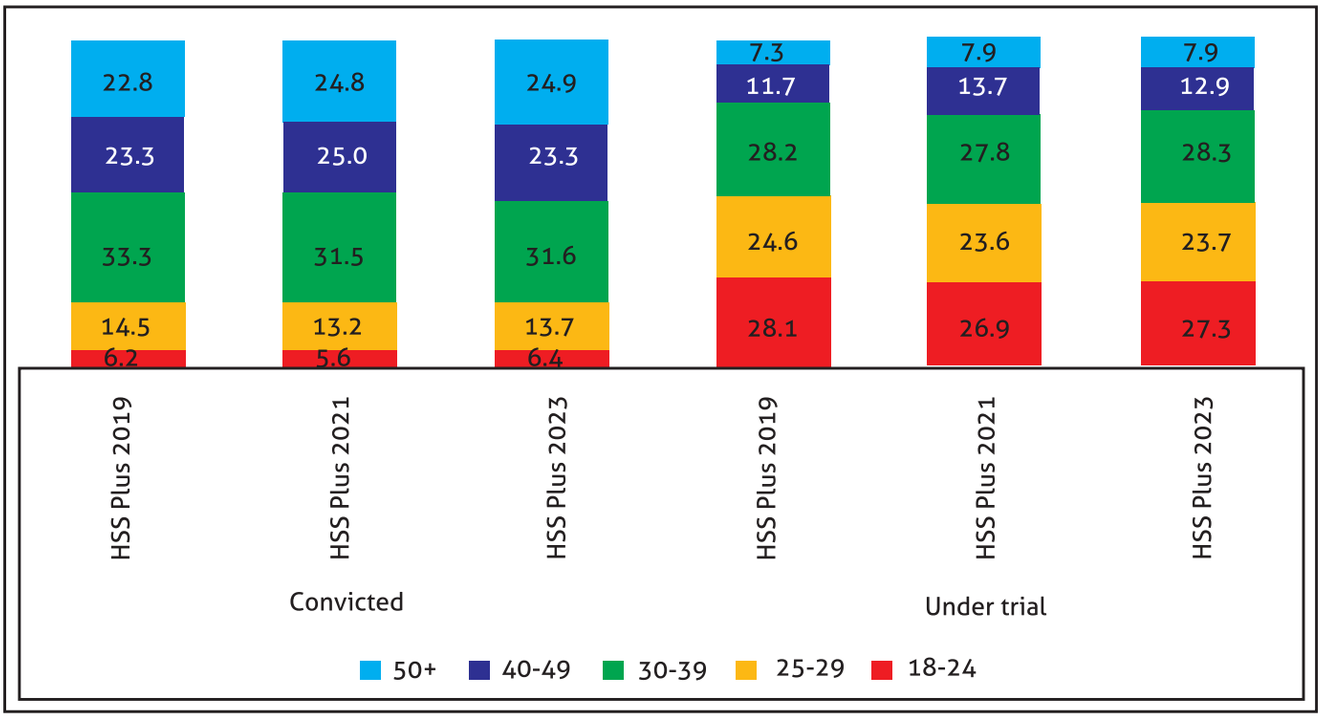
Among the recruited inmates, almost two-third (64%) reported that the current imprisonment was their first experience. Almost every recruited inmate in Manipur reported having a previous history of the imprisonment (Figure 3.2). On the contrary, more than four-fifths of the recruited inmates reported being in prison for the first time from Odisha and Tripura (91.3%), followed by Himachal Pradesh (87.9%), Gujarat (86.6%), Chhattisgarh (81.9%), Chandigarh (80.3%), and Assam (79.6%).

Figure 3.2: Percentage distribution of previous history of imprisonment of recruited inmates by by States/UTs, Prison HSS Plus 2023



The mean age of the convicted inmates was 41.1 years, whereas that of the undertrial inmates was 32 years. Overall, the mean age of the inmates recruited in HSS Plus 2023 was 35.5 years. The age distribution pattern is broadly similar to the pattern seen in previous round (Figure 3.3). Recruited inmates in Kerala were oldest with a mean age of 45.4 years, followed by those in Uttar Pradesh (mean age 39.5 years). Chandigarh had the youngest inmates among central prison HSS Plus sites, with mean age of 31.6 years. State/UT-wise, respondents' profile, is presented in Tables 3.3.

Figure 3.3: Distribution (in %) of convicted and undertrial inmates by age group, Prison HSS Plus 2019, 2021, and 2023



A similar distribution pattern of marital status among convicted as well as undertrial inmates was observed among HSS Plus 2019, 2021 and 2023 (Figure 3.4). Almost one-third of all the recruited inmates reported being never married, while a small proportion (4.5%) were divorced/ separated/ widowers. In Chandigarh, more than half (50.5%) were never married, while 45-50% of respondents reported being never married in Delhi Haryana, Maharashtra, Nagaland, Odisha, and Punjab. In Telangana, West Bengal, Jharkhand and Bihar, more than 70% of respondents reported being currently married. In Mizoram, more than one-third (36.5%) of inmates reported being divorced/ separated/ widowers. In Meghalaya, 29.3% and in Tripura, 10.3% of inmates were divorced/ separated/ widowers at the time of their interview.

Most inmates (88% among undertrial and 84.4% among convicted) were literate, with around one-fifth (23.6% among undertrial and 19% among convicted) having more than ten years of education (Figure 3.5). Almost one third of the inmates in Meghalaya (31.5%) were illiterate, followed by 26.4% in Uttar Pradesh, 23.5% in Assam, 21.1% in West Bengal, and 20.6% in Andhra Pradesh. In Orissa, Kerala, Delhi, and Manipur, only 0-5% of the inmates were illiterate (Table 3.3).

Figure 3.4: Distribution (in %) of convicted and undertrial inmates by current marital status, Prison HSS Plus 2019, 2021, and 2023

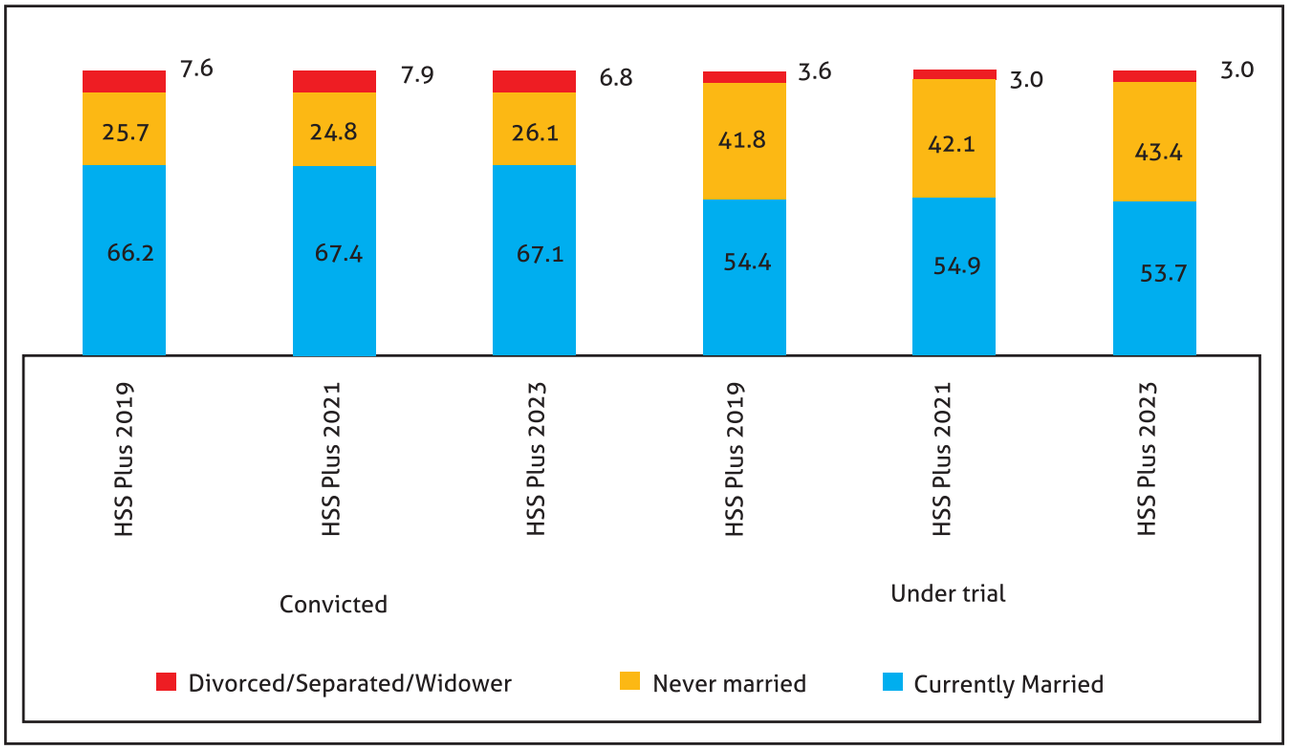


Figure 3.5: Distribution (in %) of convicted and undertrial inmates by education status, Prison HSS Plus 2019, 2021, and 2023

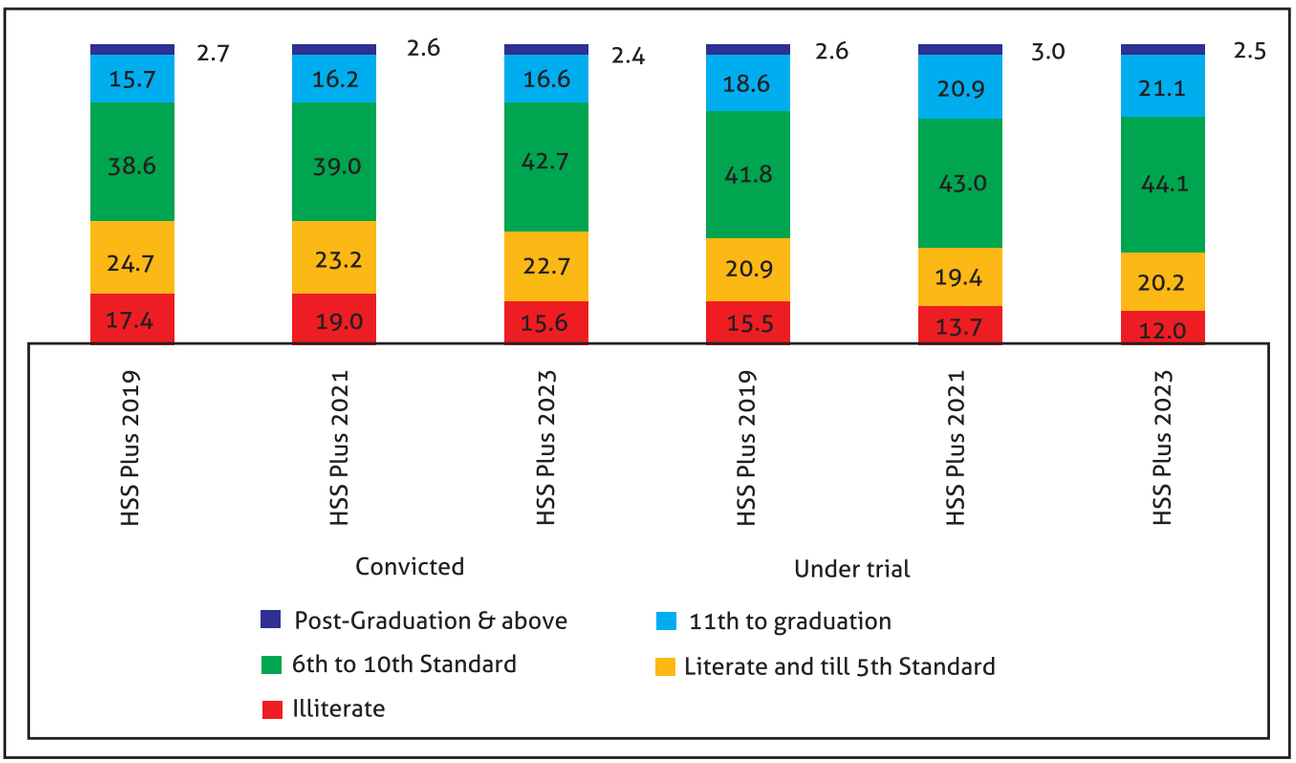


Table 3.2 Imprisonment characteristics of inmates by State and UT, Prison HSS Plus 2023

State/UT	Inmate Type (%)			Duration of current imprisonment (%)			Previous history of imprisonment (%)		
	N	Undertrial	Convict	<3 Months	3 Months to 1 Year	1 Year or more	Never	One time	Two times or more
Andhra Pradesh	1200	40.0	60.0	13.8	25.1	61.1	43.3	44.5	12.2
Assam	1200	74.8	25.2	19.3	34.3	46.4	79.6	17.8	2.6
Bihar	1200	73.0	27.0	19.0	41.8	39.3	52.4	40.3	7.3
Chandigarh	400	70.1	29.9	4.5	46.4	49.1	80.3	12.2	7.6
Chhattisgarh	1591	39.2	60.8	7.2	19.1	73.8	81.9	13.2	4.9
Delhi	800	96.7	3.3	5.4	28.3	66.2	55.5	39.8	4.6
Gujarat	1599	48.4	51.6	7.7	22.5	69.8	86.6	9.1	4.3
Haryana	800	77.0	23.0	9.9	35.9	54.2	76.8	9.5	13.7
Himachal Pradesh	400	42.0	58.0	3.0	14.0	83.0	87.9	9.8	2.3
Jharkhand	792	45.4	54.6	7.9	21.7	70.4	37.5	58.0	4.6
Karnataka	1552	68.3	31.7	11.3	28.3	60.3	71.4	21.6	7.0
Kerala	800	13.3	86.7	3.1	16.6	80.3	74.7	24.4	0.9
Madhya Pradesh	1200	38.3	61.7	7.7	19.5	72.8	75.2	12.8	12.1
Maharashtra	1600	75.4	24.6	6.4	25.9	67.6	53.3	37.6	9.1
Manipur*	67	95.5	4.5	24.6	44.6	30.8	0.0	75.0	25.0
Meghalaya	400	80.5	19.5	6.8	38.3	55.0	49.5	39.8	10.8
Mizoram	400	58.5	41.5	8.5	50.4	41.1	0.0	76.1	23.9
Nagaland*	241	88.8	11.3	59.6	20.4	20.0	29.2	53.8	17.1
Odisha	800	87.2	12.8	10.6	53.1	36.4	92.8	6.7	0.5
Punjab	1200	79.7	20.3	5.4	28.9	65.7	70.2	20.1	9.6
Rajasthan	1582	63.6	36.4	4.3	32.3	63.4	66.6	17.0	16.4
Tamil Nadu	1600	63.9	36.1	17.1	38.0	44.9	34.6	41.5	23.9
Telangana	400	48.6	51.4	11.0	18.8	70.3	22.5	70.0	7.5
Tripura	400	46.8	53.2	28.9	14.6	56.5	91.3	7.0	1.8
Uttar Pradesh	1600	43.0	57.0	2.6	32.6	64.8	67.3	21.5	11.2
Uttarakhand	800	81.4	18.6	10.0	32.1	57.8	54.7	29.3	16.0
West Bengal	1200	73.4	26.6	7.4	16.8	75.9	67.4	26.4	6.2
India	25824	61.2	38.8	9.9	28.9	61.2	64.0	26.6	9.4

**In Manipur and Nagaland, less than 75% of the target sample size was achieved. Finding of the results in Manipur and Nagaland among inmates shall be interpreted with caution.*

Table 3.3: Background characteristics of inmates by State and UT, Prison HSS Plus 2023

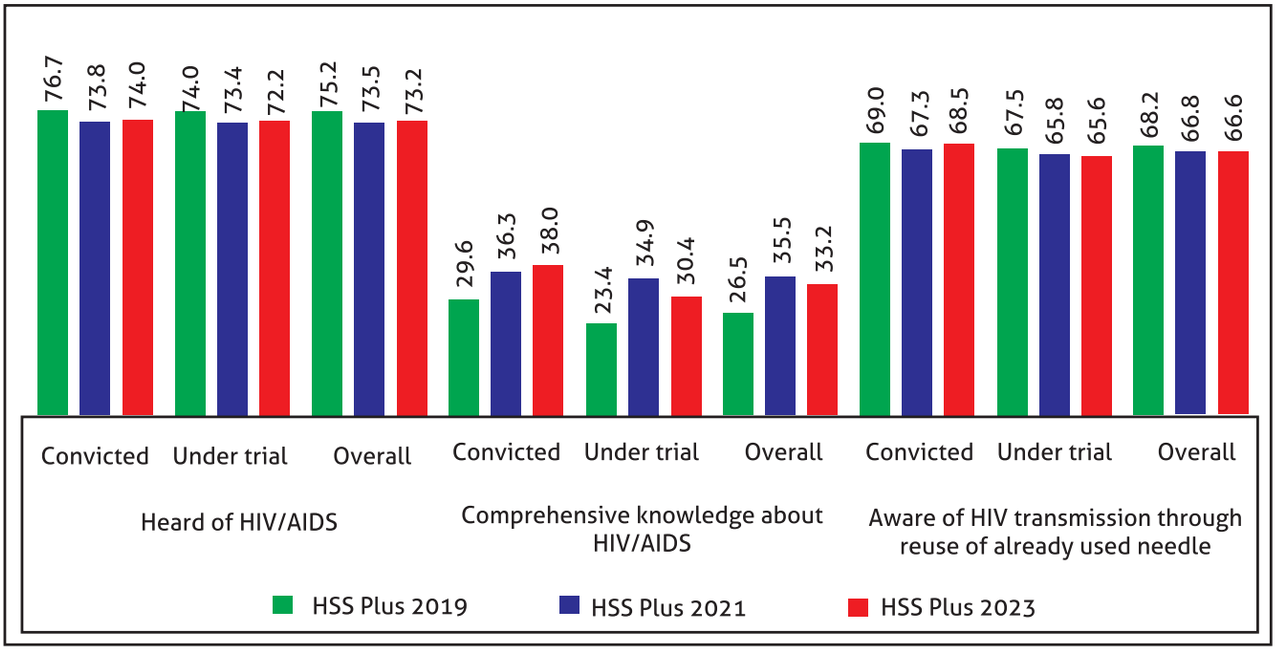
State/UT	N	Mean age (In completed years)	Marital status (%)			Education Status (%)				
			Currently Married	Never married	Divorced/ Separated/ Widower	Illiterate	Literate and till 5th Standard	6th to 10th Standard	11th to graduation	Post-Graduation & above
Andhra Pradesh	1200	37.7	66.5	27.4	5.2	20.6	22.1	34.8	19.1	3.3
Assam	1200	34.1	65.3	33.3	1.2	23.5	23.3	43.1	8.6	1.3
Bihar	1200	35.4	71.3	24.5	3.2	12.9	24.5	45.2	16.3	1.1
Chandigarh	400	31.6	48.5	50.5	0.8	16.0	9.3	44.5	26.8	3.3
Chhattisgarh	1591	36.0	58.8	35.5	5.7	14.3	25.8	40.7	14.7	3.9
Delhi	800	32.0	54.3	45.3	0.3	4.1	45.3	26.4	22.0	2.0
Gujarat	1599	35.7	54.3	39.5	6.0	12.6	15.9	46.7	20.5	4.3
Haryana	800	32.0	47.6	49.9	2.3	8.8	19.1	40.6	30.9	0.6
Himachal Pradesh	400	38.9	60.3	33.5	6.3	11.3	21.8	47.5	17.3	1.8
Jharkhand	792	36.6	72.5	25.6	0.6	8.3	21.5	42.6	25.9	1.1
Karnataka	1552	33.8	54.8	44.3	0.6	12.8	17.7	46.5	20.0	2.4
Kerala	800	45.4	64.3	28.1	7.4	2.1	18.9	61.5	13.3	4.3
Madhya Pradesh	1200	36.3	53.3	38.3	8.2	9.5	30.4	41.5	15.6	3.0
Maharashtra	1600	33.9	51.6	45.7	2.4	11.3	17.7	46.1	20.1	4.8
Manipur*	67	33.8	62.7	34.3	3.0	4.5	34.3	41.8	19.4	0.0
Meghalaya	400	34.7	43.8	26.8	29.3	31.5	30.0	29.0	8.5	1.0
Mizoram	400	37.3	41.8	21.8	36.5	6.8	16.5	55.5	20.3	1.0
Nagaland*	241	32.0	52.3	45.2	2.5	11.6	19.1	49.0	19.9	0.4
Odisha	800	32.8	50.6	48.8	0.5	0.6	17.4	59.3	21.3	0.5
Punjab	1200	33.3	49.0	49.0	1.9	5.9	17.5	47.5	27.6	0.9
Rajasthan	1582	33.1	58.1	36.4	5.3	18.5	19.6	37.9	19.5	4.0
Tamil Nadu	1600	36.4	65.9	32.3	1.4	5.7	14.3	54.3	23.7	1.9
Telangana	400	35.5	73.0	26.8	0.0	16.0	20.3	40.8	22.3	0.8
Tripura	400	37.8	61.0	28.5	10.3	9.0	31.8	42.3	14.8	2.3
Uttar Pradesh	1600	39.5	59.3	35.2	5.6	26.4	18.4	33.3	19.6	2.3
Uttarakhand	800	33.9	54.5	43.5	1.3	18.1	15.8	40.5	20.9	3.5
West Bengal	1200	37.3	72.8	22.4	3.9	21.1	22.8	41.1	12.4	0.8
India	**25824**	**35.5**	**58.7**	**36.5**	**4.5**	13.4	21.0	43.5	19.2	2.5

**In Manipur and Nagaland, less than 75% of the target sample size was achieved. Finding of the results in Manipur and Nagaland among inmates shall be interpreted with caution.*

3.3 HIV/AIDS related knowledge

Overall, three-fourths (73.2%) of inmates recruited in HSS Plus 2023 reported having heard of HIV/AIDS, while two-third (66.6%) of inmates were aware of HIV transmission through reuse of already used needles. Additionally, one-third (33.2%) of prison inmates reported having comprehensive knowledge about HIV/AIDS among inmates, which is broadly similar to the results from the previous round of surveillance. Among respondents, 55.8% identified having only one un-infected sexual partner and 63.3% identified consistent condom use as methods of of HIV prevention. Misconception about HIV transmission through mosquito-bite through sharing a meal with HIV infected person was reported by 9.7% and 9% of the inmates respectively. Almost around half of the inmates (50.9%) reported that a healthy-looking person may have HIV/AIDS. Overall, only around one third (33.2%) had comprehensive and correct knowledge about HIV/AIDS[1]. The pattern of HIV/AIDS awareness, transmission risk through used needle and comprehensive knowledge was almost similar among convicts and under trials (Figure 3.6). State/UT-wise status of inmates knowledge about HIV/AIDS is presented in Table 3.4.

Figure 3.6: Knowledge about HIV/AIDS among inmates, Prison HSS Plus 2019, 2021, and 2023



A significant number of inmates from Telangana (99.3%), Odisha (99.1%), Kerala (98.5%), Manipur (98.5%), Andhra Pradesh (96.5%), Tamil Nadu (95.4%), and Himachal Pradesh (91.3%) reported having heard about HIV/AIDS; whereas only half of the inmates from Punjab, Chandigarh, and Delhi (42.4 - 52.9%) were aware about HIV/AIDS.

[1]Comprehensive correct HIV/AIDS knowledge (CCAK) is defined as ability to correctly knowing the two major ways of preventing the sexual transmission of HIV (i.e., consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chances of getting HIV/AIDS), rejecting two most common misconceptions about HIV transmission and knowing that a healthy-looking person can have HIV/AIDS.

Table 3.4 HIV/AIDS related knowledge by State and UT, Prison HSS Plus 2023

State/UT	N	Awareness about HIV prevention (%)			Had Misconception about HIV transmission (%)				
		Heard of HIV/AIDS	Having one uninfected partner	Consistent use of condom during sex act	Mosquito bite	Sharing meal with HIV infected person	Aware that healthy looking person may have HIV (%)	HIV can be transmitted through reuse of already used needle	Comprehensive knowledge about HIV (%)
Andhra Pradesh	1200	96.5	95.9	95.1	1.0	0.6	70.3	89.0	68.8
Assam	1200	74.0	66.4	61.2	6.3	4.3	36.2	62.4	33.2
Bihar	1200	63.5	57.9	58.1	3.5	8.7	58.5	62.7	44.8
Chandigarh	400	51.5	43.5	46.3	4.3	3.8	36.0	49.3	27.0
Chhattisgarh	1591	60.0	55.2	56.8	12.8	11.3	51.8	57.0	31.0
Delhi	800	52.9	39.0	29.8	0.9	0.6	29.9	44.4	18.0
Gujarat	1599	85.6	79.7	80.5	4.9	5.7	73.3	81.7	59.9
Haryana	800	67.0	49.6	52.0	20.6	19.3	33.0	61.8	6.6
Himachal Pradesh	400	91.3	83.3	86.5	29.3	14.3	63.5	87.3	33.5
Jharkhand	792	55.6	45.1	41.3	3.0	4.2	35.2	41.7	19.6
Karnataka	1552	65.5	61.3	59.5	8.6	8.8	45.7	61.7	35.8
Kerala	800	98.5	73.4	79.4	8.4	9.5	78.0	79.0	50.5
Madhya Pradesh	1200	65.3	58.9	60.0	10.4	5.6	54.2	61.7	38.5
Maharashtra	1600	66.0	35.1	62.8	13.1	7.4	43.4	63.8	12.1
Manipur*	67	98.5	65.7	74.6	3.0	1.5	3.0	62.7	3.0
Meghalaya	400	76.8	68.3	66.0	10.8	5.3	49.0	62.5	30.3
Mizoram	400	88.8	3.5	87.3	0.8	0.3	87.5	87.8	3.0
Nagaland*	241	85.1	80.1	81.3	9.1	2.9	79.3	79.7	61.0
Odisha	800	99.1	47.0	54.4	18.5	33.1	60.3	91.5	21.0
Punjab	1200	42.4	35.5	38.8	2.4	2.9	23.9	40.0	19.0
Rajasthan	1582	62.1	57.8	58.9	7.8	3.5	57.5	60.6	46.1
Tamil Nadu	1600	95.4	48.3	80.2	8.5	9.3	50.5	89.8	30.1
Telangana	400	99.3	16.3	93.3	4.5	29.5	28.3	98.8	9.3
Tripura	400	72.3	13.8	29.5	23.3	9.0	33.3	71.5	1.8
Uttar Pradesh	1600	77.1	66.0	67.8	8.5	6.8	51.6	70.6	39.6
Uttarakhand	800	71.9	68.3	62.6	8.1	6.1	54.5	60.1	49.1
West Bengal	1200	76.4	42.5	60.7	33.8	32.4	47.1	51.5	16.7
India	25824	73.2	55.8	63.3	9.7	9.0	50.9	66.6	33.2

**In Manipur and Nagaland, less than 75% of the target sample size was achieved. Finding of the results in Manipur and Nagaland among inmates shall be interpreted with caution.*

Comprehensive knowledge about HIV was found significantly higher among the prison inmates from Andhra Pradesh (68.8%), Gujarat (59.9%), and Nagaland (61%) whereas, very low levels were observed in Manipur (3%), Tripura (1.8%), Mizoram (3%), Haryana (6.6%), and Telangana (9.3%). In Punjab, only 40% of inmates reported to be aware of transmission risk through used needles while in Jharkhand (41.7%) and Delhi (44.4%), around two-fifth were aware of same. Majority of the inmates from Telangana (98.8%), Odisha (91.5%), Tamil Nadu (89.8%), Andhra Pradesh (89%), and Mizoram (87.8%) were aware about this risk.

3.4 HIV/AIDS related services uptake

This section describes State/UT-wise information on HIV/AIDS related services uptake, focussing on history of HIV testing among all recruited inmates and status of anti-retroviral therapy (ART) among HIV positive inmates (Table 3.5).

Overall, less than three-fifths (57.6%) of recruited inmates had ever tested for HIV, with little more than two-fifths (43.2%) reporting testing in the last 12 months. There was a significant increase in reported HIV testing in last 12 months (43.2% in 2023 vis-a-vis 27.6% in 2021). In Andhra Pradesh, 79.2% and in Tamil Nadu 78.4% of inmates reported being tested for HIV in last 12 months preceding the survey. In Manipur (74.6%) and Kerala (73.8%), a significant proportion of respondents reported having been tested as well .

Table 3.5: HIV testing history among inmates by States/UTs, Prison HSS Plus 2023

State/UT	N	Ever Tested for HIV (%)	Tested for HIV in last 12 months (%)
Andhra Pradesh	1200	90.4	79.2
Assam	1200	35.2	20.3
Bihar	1200	60.4	39.1
Chandigarh	400	33.0	11.0
Chhattisgarh	1591	37.1	25.5
Delhi	800	40.8	14.3
Gujarat	1599	67.7	50.1
Haryana	800	48.0	29.9
Himachal Pradesh	400	70.3	48.0
Jharkhand	792	38.0	13.5
Karnataka	1552	40.4	27.6
Kerala	800	97.6	73.8
Madhya Pradesh	1200	64.4	60.8
Maharashtra	1600	49.4	33.3
Manipur*	67	76.1	74.6
Meghalaya	400	48.3	46.3
Mizoram	400	82.8	37.5

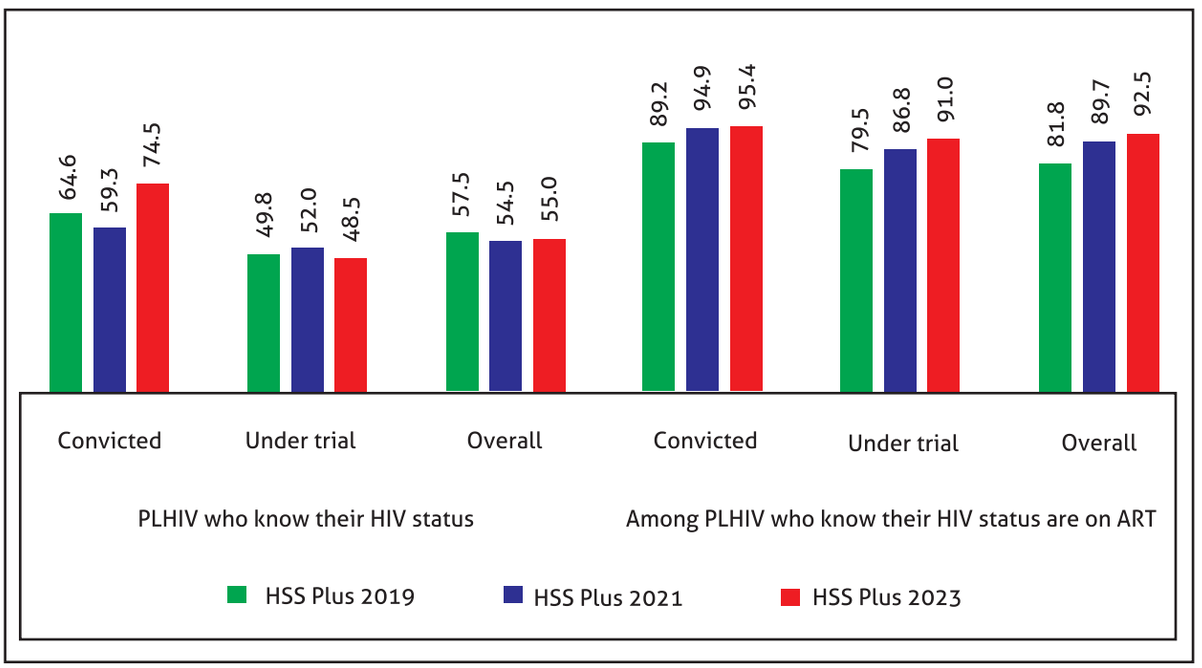
Nagaland*	241	45.6	34.4
Odisha	800	64.9	53.5
Punjab	1200	34.4	24.1
Rajasthan	1582	51.5	34.5
Tamil Nadu	1600	91.1	78.4
Telangana	400	97.8	58.3
Tripura	400	56.5	53.8
Uttar Pradesh	1600	73.6	68.5
Uttarakhand	800	18.0	16.8
West Bengal	1200	61.7	54.1
India	**25824**	**57.6**	**43.2**

**In Manipur and Nagaland, less than 75% of the target sample size was achieved. Finding of the results in Manipur and Nagaland among inmates shall be interpreted with caution.*

Overall, there were 582 inmates who were reactive for HIV in HSS Plus 2023. Out of these, 55% reported being aware of their HIV positive status. Among inmates who reported being aware of their HIV positive status, 92.5% were on ART. Almost similar proportions was reported in both the indicators from HSS Plus 2019 and HSS Plus 2021 (Figure 3.7). Overall, 50.9% of total HIV infected inmates were on ART.

Out of total 9,920 sampled inmates who reported being convicted at the time of interview, 1.46% were HIV positive and 74.5% of them were aware of their HIV positive status. Around 95.4% of the HIV infected convicted inmates, who knew their HIV positive status, reported being on ART. Around 71% of total HIV infected convicted inmates were on ART.

Figure 3.7: HIV/AIDS-related service uptake among inmates, Prison HSS Plus 2019, 2021, and 2023



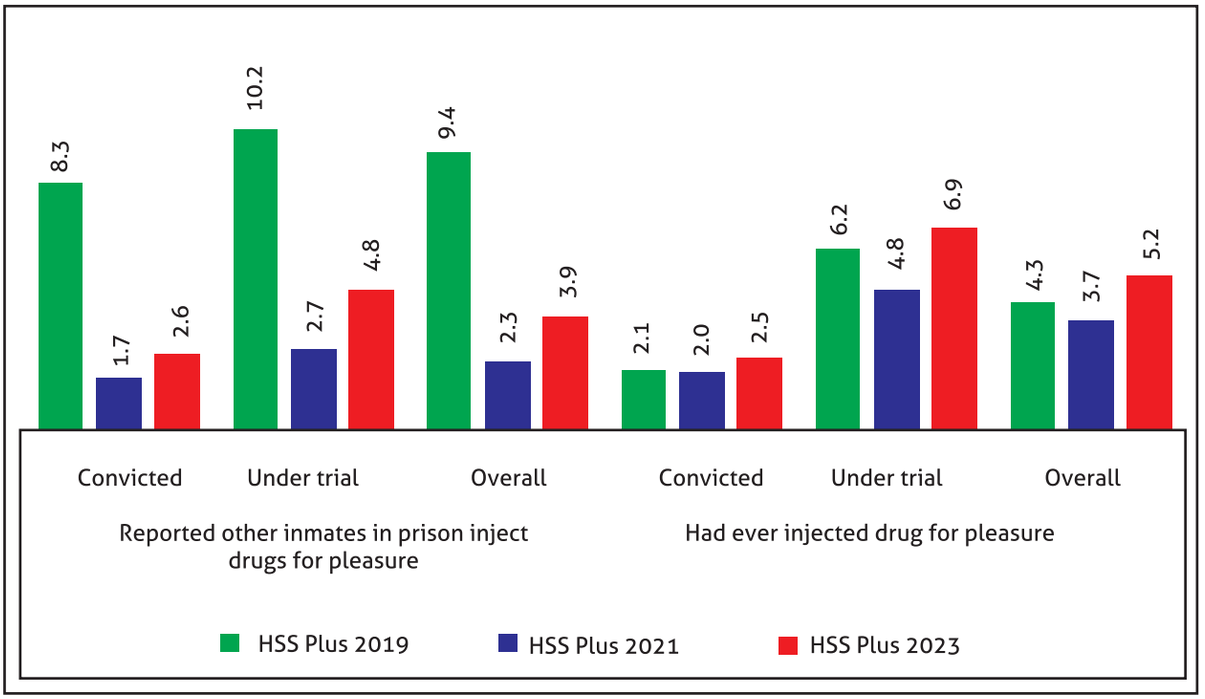
In comparison, out of the 15,628 sampled inmates who were undertrial, 2.78% of them were HIV positive, and almost half (48.5%) of the HIV infected undertrial inmates were aware of their HIV positive status. Around 89.7% of the HIV infected undertrial inmates, who knew their HIV positive status, reported being on ART. Less than half (44.1%) of total HIV infected undertrial inmates were on ART.

3.5 Injecting Drug Use Practices

HSS Plus 2023 among inmates at central jails enquired about the injecting drug use practices. As the injecting drug behaviour is illicit, respondents were first asked about prevalence of this behaviour in general in their setting; this was done to understand how common the behaviour might be. Subsequently, recruited inmates were asked about their injecting drug use behaviours to measure the prevalence of the same along with its related practices among the inmates. State/UT-wise findings on injecting drug use practices are presented in Table 3.6.

Overall, around 3.9% of recruited inmates (2.6% of convicts and 4.8% of undertrial) reported that inmates in their prison inject drugs for pleasure (Figure 3.8). The data showed significantly lower prevalence than the report on HSS Plus 2019, however, higher than the report in HSS Plus 2021. In Punjab, almost one of two respondents (45.7%) reported that inmates in their prison were injecting drugs for pleasure, with around 21.5% prison inmates in Meghalaya also reporting the same.

Figure 3.8: Knowledge about Injecting drug use behaviour in prison in general and their own injecting drug experiences among inmates, Prison HSS Plus 2019, 2021 and 2023



When asked about their own behaviour of injecting drugs for pleasure, a small proportion (5.2%) of total recruited inmates (2.5% of convicts and 6.9% of under trials) reported having had a lifetime experience of injecting any drug for pleasure. In Mizoram, 29.8% of respondents reported doing so followed by 18.3% in Punjab, 16.4% in Manipur and 16.2% in Nagaland.

Almost two-third (65.0%) of the inmates with history of injecting drug for pleasures reported using a sterile needle/syringe during their last injecting episode (66.8% among convicts and 64.8% among undertrials) while 26.3% of them reported sharing a used needle/ syringe (23.1% among convicts and 27.0% among undertrials) (Figure 3.9). There was significantly higher proportion of inmates reported using sterile needle-syringe and lower proportion of inmates sharing needle-syringe in their last episode of injecting compared to the report during HSS Plus 2019. Among inmates who had a lifetime experience of injecting any drug for pleasure in Delhi, only 20.2% of them reported using of sterile needle-syringe and in Manipur, Tripura and Kerala, about two-fifth of the prison inmates had shared in their last episode (Table 3.6).

Almost two thirds (61.2%) of the recruited inmates were in prison for one year or more. Among them, around 3.6% reported to have had a lifetime experience of injecting drug for pleasure. However, about 16.8% of those with lifetime experience reported last injecting episode within one year of preceding the survey. Almost half (46.8%) of them reported use of sterile needle/ syringe during their last injecting episode while 14.9% reported sharing of used needle/syringe in their last episode.

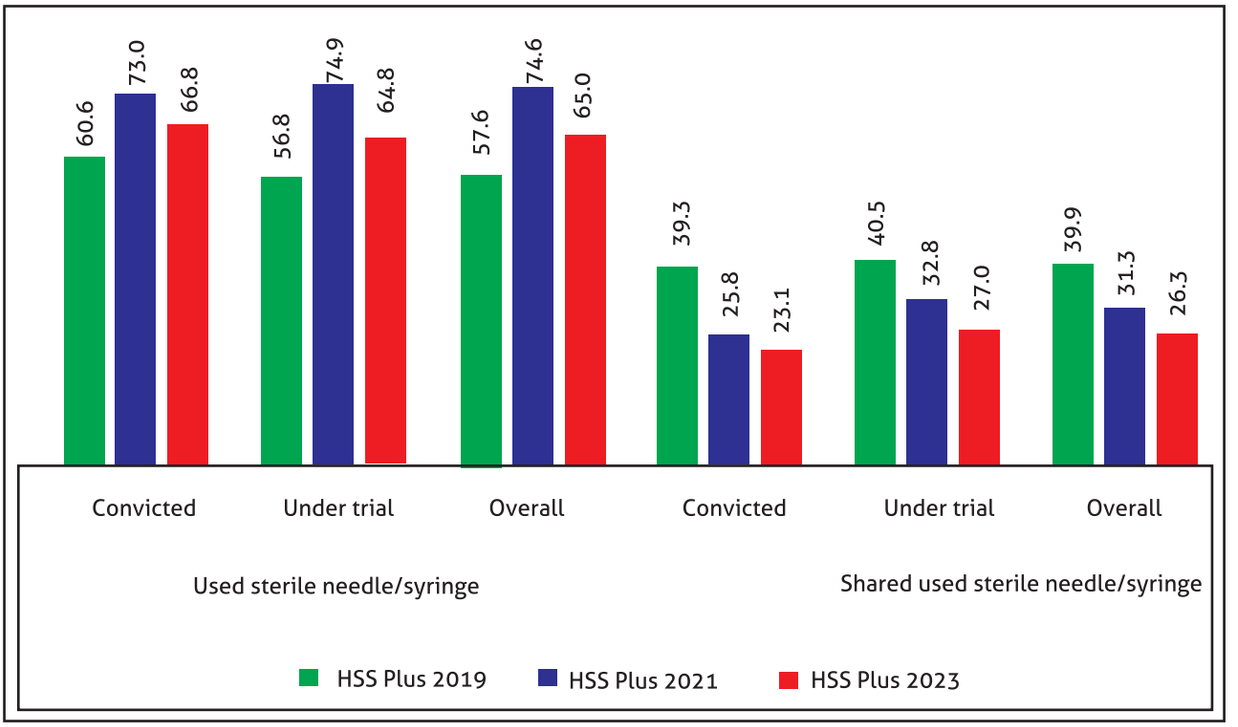
Table 3.6 Injecting drug use practices among inmates by State and UT, Prison HSS Plus 2023

State/UT	N	When injected last time (%) *#@							
		Inmates in prison inject drug for pleasure (%)	Ever injected drug for pleasure (%)	Less Than a month ago	Between 1 month to less than 3 months ago	Between 3 months to less than 12 months ago	More than a year ago	Use of sterile N/S when injected last (%)*#	Sharing of N/S when Injected last (%)*#
Andhra Pradesh	1200	0.1	4.1	2.0	6.1	40.8	51.0	71.4	34.7
Assam	1200	4.7	11.0	0.0	6.1	47.0	44.7	47.7	28.8
Bihar	1200	0.1	1.3	0.0	18.8	18.8	50.0	68.8	18.8
Chandigarh	400	0.0	14.5	1.7	5.2	37.9	55.2	89.7	39.7
Chhattisgarh	1591	0.5	1.4	4.3	21.7	13.0	60.9	82.6	8.7
Delhi	800	1.5	13.6	0.0	13.8	51.4	32.1	20.2	11.0
Gujarat	1599	3.3	1.2	0.0	21.1	15.8	63.2	94.7	5.3
Haryana	800	1.4	5.5	2.3	15.9	38.6	40.9	77.3	22.7
Himachal Pradesh	400	0.0	3.8	20.0	6.7	20.0	53.3	73.3	20.0
Jharkhand	792	2.4	0.8	0.0	0.0	16.7	66.7	33.3	16.7
Karnataka	1552	0.8	1.6	0.0	4.0	28.0	68.0	64.0	36.0
Kerala	800	1.8	3.6	0.0	0.0	3.4	96.6	82.8	41.4
Madhya Pradesh	1200	0.6	1.9	0.0	8.7	21.7	56.5	78.3	26.1
Maharashtra	1600	0.6	1.0	0.0	6.3	18.8	68.8	87.5	12.5
Manipur	67	16.4	16.4	0.0	0.0	27.3	72.7	81.8	45.5
Meghalaya	400	21.5	13.5	0.0	16.7	44.4	37.0	66.7	33.3
Mizoram	400	0.5	29.8	8.4	17.6	49.6	23.5	69.7	25.2

Nagaland	241	12.9	16.2	17.9	7.7	28.2	46.2	64.1	38.5
Odisha	800	0.0	0.0	-	-	-	-	-	-
Punjab	1200	45.7	18.3	0.9	4.1	30.0	65.0	59.5	30.9
Rajasthan	1582	0.8	3.1	4.1	10.2	34.7	36.7	67.3	8.2
Tamil Nadu	1600	2.6	8.9	0.0	2.8	35.9	54.2	86.6	25.4
Telangana	400	0.0	0.8	0.0	0.0	0.0	100.0	66.7	33.3
Tripura	400	0.3	8.5	8.8	17.6	55.9	17.6	88.2	41.2
Uttar Pradesh	1600	0.7	2.3	0.0	2.7	29.7	67.6	43.2	37.8
Uttarakhand	800	0.6	0.0	-	-	-	-	-	-
West Bengal	1200	5.2	5.3	12.5	7.8	23.4	54.7	65.6	10.9
India	25824	3.9	5.2	2.9	8.7	36.1	49.8	65.0	26.3

**Among those who reported having a history of injecting drug for pleasure; # Except for Assam, Chandigarh, Delhi, Meghalaya, Mizoram, Punjab, Tamil Nadu, and West Bengal, less than 50 sampled inmates reported to inject drug for pleasure in all other States/UT. In these States/UT, finding on injecting drug practices among inmates shall be interpreted with caution, @ responses may not add up to 100% due to missing values.*

Figure 3.9: Injecting practices among convicted and undertrial inmates, Prison HSS Plus 2019, 2021, and 2023



3.6 Sexual behaviour and condom use practices

HSS Plus 2023 among inmates at central jails enquired about the sexual behaviour and condom use practices. Respondents were first asked about sexual behaviour of inmates in general followed by their own sexual behaviour and condom use. State/UT-wise findings on sexual behaviour and condom use practices are presented in Table 3.7.

Overall, around 6.8% of the recruited inmates (7.8% of convicts and 6.1% of undertrials) reported that sexual activity occurs among inmates in their prison (Figure 3.10). In West Bengal, 31.2% of inmates reported such practice whereas 20.9% and 18.4% respondents reported doing so in Tamil Nadu and Jharkhand, respectively.

When recruited respondents were asked if they are sexually active, about four-fifth (84.7% of convicts and 76.7% of undertrials) of the inmates reported to be sexually active. More than 90% of respondents from Telangana, Mizoram, Delhi, Chhattisgarh, Himachal Pradesh, and Maharashtra reported being sexually active, whereas only about two-fifths of inmates from Jharkhand (39.5%) reported the same.

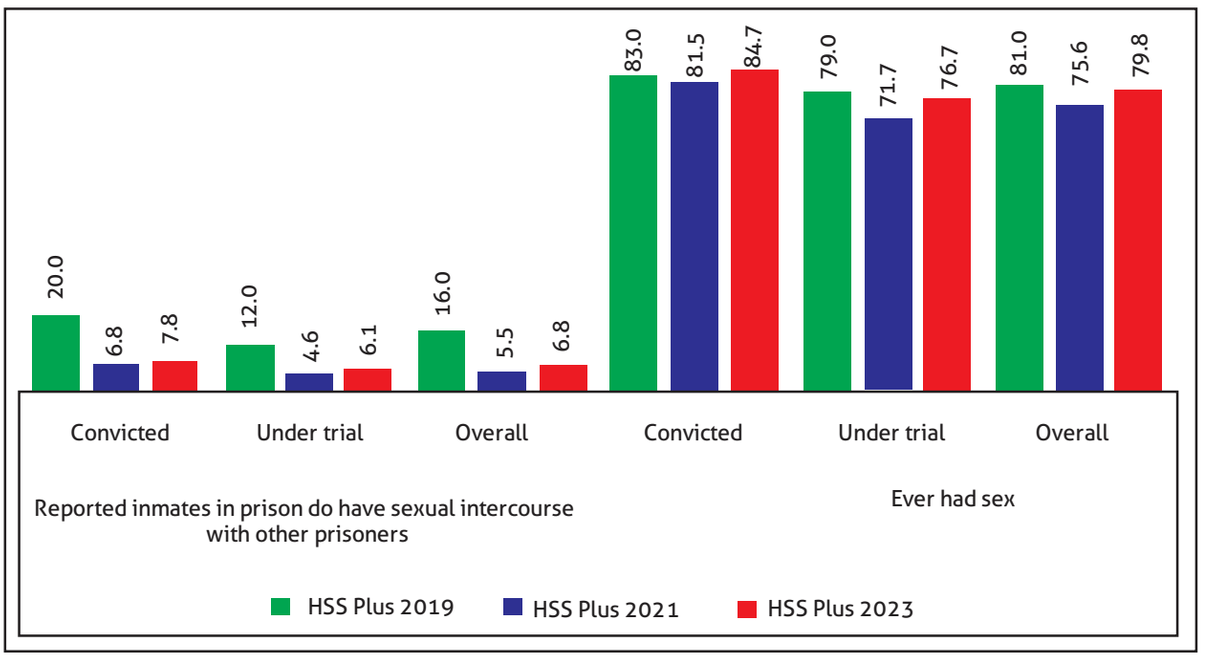
Table 3.7 Sexual behaviour among inmates by State and UT, Prison HSS Plus 2023

State/UT	N	Time of last sex act (%)*#						Last Sexual Partner (%)*#				
		Inmates have sex with other inmates in the prison	Have ever had sex	Less than a month ago	Between 1 month to less than 3 months ago	Between 3 months to less than 12 months ago	More than a year ago	Regu-lar Female Partner	Paid Female Partner	Non-paid non-regular female partner	Male Partner	Hijra/ Trans gender partner
Andhra Pradesh	1200	6.5	83.0	0.9	5.6	15.7	76.8	80.6	10.8	6.3	0.0	1.3
Assam	1200	0.4	71.9	0.9	8.7	25.1	64.9	90.5	2.0	5.2	0.0	0.1
Bihar	1200	0.8	80.4	1.9	9.9	36.7	51.7	99.0	1.2	0.0	0.0	0.0
Chandigarh	400	0.0	63.0	0.4	8.3	32.9	57.1	94.8	3.6	0.0	0.0	0.0
Chhattisgarh	1591	7.5	92.7	1.2	4.9	16.0	74.2	90.4	2.0	5.2	0.1	0.0
Delhi	800	1.4	94.0	0.5	7.6	35.2	55.7	81.3	13.6	4.0	0.1	0.0
Gujarat	1599	4.8	81.7	2.2	8.0	25.8	63.7	89.1	10.4	0.2	0.0	0.0
Haryana	800	2.3	69.6	1.6	5.0	25.9	65.2	90.5	4.8	1.4	0.4	0.0
Himachal Pradesh	400	2.0	91.3	3.3	4.1	22.2	70.7	79.5	5.2	14.5	0.3	0.0
Jharkhand	792	18.4	39.5	0.0	1.0	16.9	82.7	91.1	2.2	6.4	0.0	0.0
Karnataka	1552	6.4	72.9	0.4	3.0	18.1	78.1	88.8	5.8	4.2	0.1	0.1
Kerala	800	5.4	77.3	0.2	1.8	18.9	79.1	92.6	3.2	4.0	0.2	0.0
Madhya Pradesh	1200	6.7	88.8	2.2	6.9	21.2	69.4	96.4	2.2	1.3	0.0	0.1
Maharashtra	1600	7.3	91.1	0.9	6.4	18.8	73.9	85.9	7.1	4.3	0.1	0.1
Manipur	67	1.5	58.2	7.7	20.5	33.3	38.5	97.4	2.6	0.0	0.0	0.0
Meghalaya	400	6.5	89.3	0.3	5.6	32.8	60.2	93.6	2.5	2.8	0.0	0.0
Mizoram	400	0.3	95.5	0.5	4.7	45.3	49.5	95.3	0.3	4.5	0.0	0.0
Nagaland	241	5.4	85.1	20.5	22.4	26.3	32.2	101.0	0.0	0.0	0.5	0.0
Odisha	800	0.0	58.1	0.0	3.2	46.0	49.5	97.8	0.0	0.9	0.0	0.0
Punjab	1200	1.6	61.4	0.7	1.8	24.3	73.4	88.7	5.7	4.6	0.0	0.1

Rajasthan	1582	3.5	89.1	0.4	1.9	23.8	73.4	92.4	3.0	3.9	0.0	0.0
Tamil Nadu	1600	20.9	86.3	1.7	9.8	35.0	52.8	82.5	5.1	9.9	0.0	0.1
Telangana	400	2.8	99.5	0.0	2.8	16.1	81.2	98.5	1.3	0.3	0.0	0.0
Tripura	400	0.3	78.5	2.9	14.3	16.2	66.6	100.0	0.0	0.0	0.0	0.0
Uttar Pradesh	1600	6.2	77.1	0.1	1.1	14.4	83.6	95.1	2.1	0.3	0.2	0.1
Uttarakhand	800	0.0	62.4	0.6	2.4	31.3	62.1	94.8	0.6	0.2	0.0	0.0
West Bengal	1200	31.2	89.5	3.7	4.0	12.6	79.6	91.8	3.6	1.9	2.6	0.0
India	**25824**	**6.8**	**79.8**	**1.4**	**5.6**	**23.8**	**68.6**	**90.5**	**4.4**	**3.5**	**0.2**	**0.1**

**Among inmates who reported ever having had sex, # Total may not add upto 100% due to missing values*

Figure 3.10: Knowledge about sexual activities in prison in general and their own sexual experiences among inmates, Prison HSS Plus 2019, 2021, and 2023



Among the sexually active inmates, the last partner with whom the recruited inmates reported having sex was almost universally reported as a female partner (including 4.4% paid female partner and 3.5% casual female partner) nationally. In Delhi, Andhra Pradesh, Gujarat, and Maharashtra, 7-14% of the respondents reported their last sexual intercourse with a paid female partner. In Himachal Pradesh, Tamil Nadu, and Andhra Pradesh, 5-14% of recruited inmates reported their last sexual partner being a casual female partner.

Reported condom use during the last sexual act with a regular female partner was 17.1%. (Table 3.8). It was 43.5% with a casual female partner and 62.9% with a paid female partner. Only a very negligible proportion (0.2%) of inmates reported their last sexual act with a male partner.

A significant proportion of inmates in Delhi (13.6%) reported having their last sexual act with a paid female partner. Among them only 5.9% reported to use condom in this act. Similarly, 14.5% of the inmates in Himachal Pradesh reported having sex act with a casual partner, among them only 34% reported using condom.

Table 3.8 Condom use practices with last female partners among inmates who reported ever having sex, Prison HSS Plus 2023

State/UT	Partner type (%)			Condom use (%) during last sex act with the partner		
	Had Regular female partner	Had Paid female partner	Had Casual female partner	Condom use in last sex act with regular partner	Condom use in last sex act with paid partner	Condom use in last sex act with Casual partner
Andhra Pradesh	80.6	10.8	6.3	5.0	90.7	70.5
Assam	90.5	2.0	5.2	5.5	17.6	53.3
Bihar	99.0	1.2	0.0	12.4	45.5	-
Chandigarh	94.8	3.6	0.0	18.8	77.8	-
Chhattisgarh	90.4	2.0	5.2	15.0	48.3	23.4
Delhi	81.3	13.6	4.0	28.6	5.9	10.0
Gujarat	89.1	10.4	0.2	19.0	91.9	66.7
Haryana	90.5	4.8	1.4	18.7	59.3	75.0
Himachal Pradesh	79.5	5.2	14.5	23.2	63.2	34.0
Jharkhand	91.1	2.2	6.4	14.7	28.6	40.0
Karnataka	88.8	5.8	4.2	10.1	69.7	12.8
Kerala	92.6	3.2	4.0	16.7	35.0	28.0
Madhya Pradesh	96.4	2.2	1.3	21.2	65.2	35.7
Maharashtra	85.9	7.1	4.3	39.4	88.1	91.9
Manipur	97.4	2.6	0.0	24.3	100.0	-
Meghalaya	93.6	2.5	2.8	8.4	33.3	40.0
Mizoram	95.3	0.3	4.5	3.3	-	29.4
Nagaland	101.0	0.0	0.0	27.5	-	-
Odisha	97.8	0.0	0.9	28.6	-	33.3
Punjab	88.7	5.7	4.6	13.5	35.7	17.6
Rajasthan	92.4	3.0	3.9	17.6	59.5	34.5
Tamil Nadu	82.5	5.1	9.9	13.5	58.0	58.2
Telangana	98.5	1.3	0.3	4.3	-	-
Tripura	100.0	0.0	0.0	5.4	-	-
Uttar Pradesh	95.1	2.1	0.3	23.0	76.9	-
Uttarakhand	94.8	0.6	0.2	36.4	66.7	-
West Bengal	91.8	3.6	1.9	5.6	44.7	22.2
India	**90.5**	**4.4**	**3.5**	**17.1**	**62.9**	**43.5**

3.7 Levels of HIV and Syphilis

Nationally, the weighted HIV prevalence was 1.99% (95% CI: 1.82-2.16) among the inmates. Reverse testing algorithm was followed for syphilis testing in this round of HSS. Treponemal assay was performed first for all serum samples. RPR (semiquantitative) was done on samples found positive by TPHA. TPHA-reactive sero-positivity was found to be 1.58% (95% CI: 1.42-1.75) and sero-prevalence of syphilis (TPHA followed by RPR reactive) was 0.71% (95% CI: 0.60-0.82). Table 3.9 and Figure 3.11 & 3.12 depict the sero-prevalence of HIV and sero-positivity for Syphilis among the inmates at national level.

In terms of co-morbidities/co-infections, the prevalence of HIV-Syphilis (TPHA-reactive) among inmates was 0.16% (95% CI: 0.11-0.21) while the sero-prevalence of HIV-HBV was 0.15%. (95% CI: 0.10-0.20). The sero-prevalence of HIV-HCV among inmates was 1.23% (95% CI:1.09-1.38). Among the HIV positive respondents, the sero-positivity for Syphilis (TPHA-reactive) was 7.63% (95% CI: 5.23-10.02). The sero-prevalence for HBV and HCV among the HIV positive respondents was 6.99% (95% CI:4.69-9.29) and 58.17% (95% CI:53.72-62.63), respectively.

Highest HIV prevalence was noted in State of Mizoram [21.50% (95% CI: 17.47-25.53)], followed by Punjab [9.25% (95% CI: 7.61-10.89)], Nagaland [6.64% (95% CI: 3.50-9.78)], Tripura [6.00% (95% CI: 3.67-8.33)], Meghalaya [5.50% (95% CI: 3.27-7.73)], Assam [4.17% (95% CI: 3.04-5.30)], Chandigarh [3.25% (95% CI: 1.51-4.99)], Manipur [2.99% (95% CI: 0.00-7.06)], Haryana [2.75% (95% CI: 1.62-3.88)], Telangana [2.75% (95% CI: 1.15-4.35)], Delhi [2.63% (95% CI: 1.52-3.73)], Andhra Pradesh [2.58% (95% CI: 1.69-3.48)], and Uttar Pradesh [2.50% (95% CI: 1.74-3.26)] (Table 3.9).

Syphilis (TPHA-reactive followed by RPR-reactive) sero-prevalence was highest in Uttarakhand [5.88% (95%CI: 4.25-7.50)] followed by Meghalaya [4.50%, (2.47-6.53)], Madhya Pradesh [1.58%, (0.88-2.29)], Manipur [1.49%, (0.00-4.40)], Mizoram [1.25%, (0.16-2.34)], Maharashtra [1.01%, (0.52-1.50)] and Telangana [1.00%, (0.02-1.98)] (Table 3.9).

Figure 3.11: State/UT-wise weighted sero-prevalence (%) of HIV among inmates, Prison HSS Plus 2023

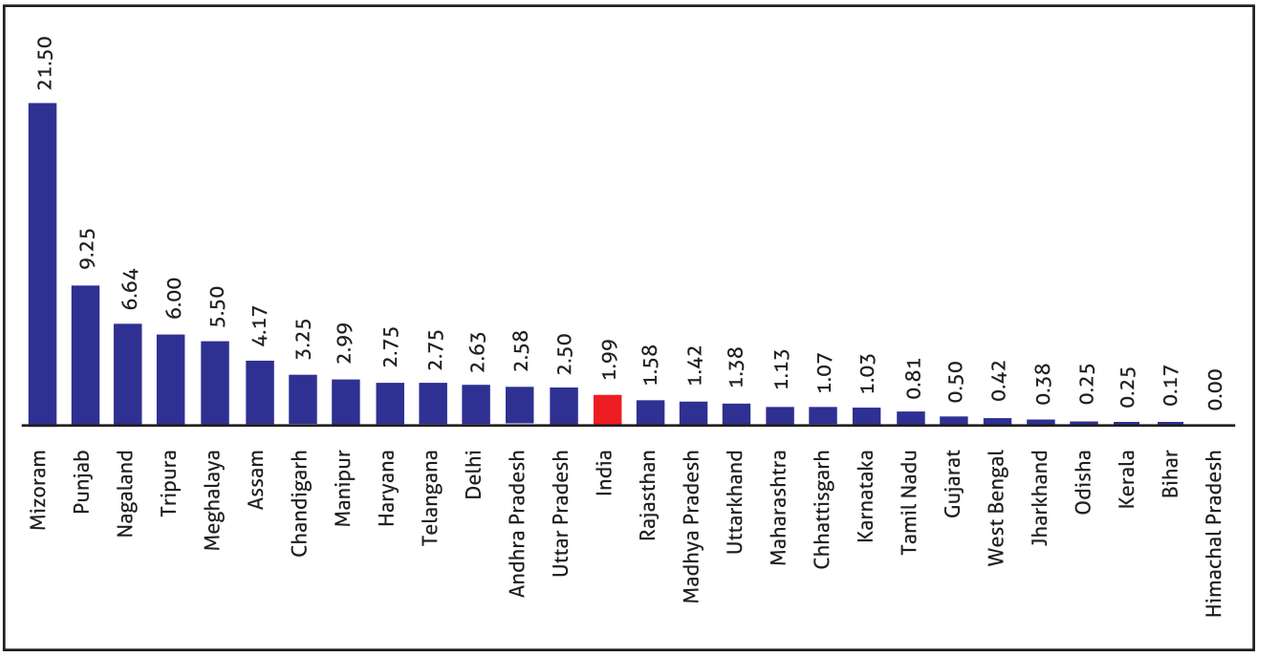


Figure 3.12: State/UT-wise weighted Syphilis (TPHA-reactive followed by RPR-reactive) sero-prevalence among inmates, Prison HSS Plus 2023

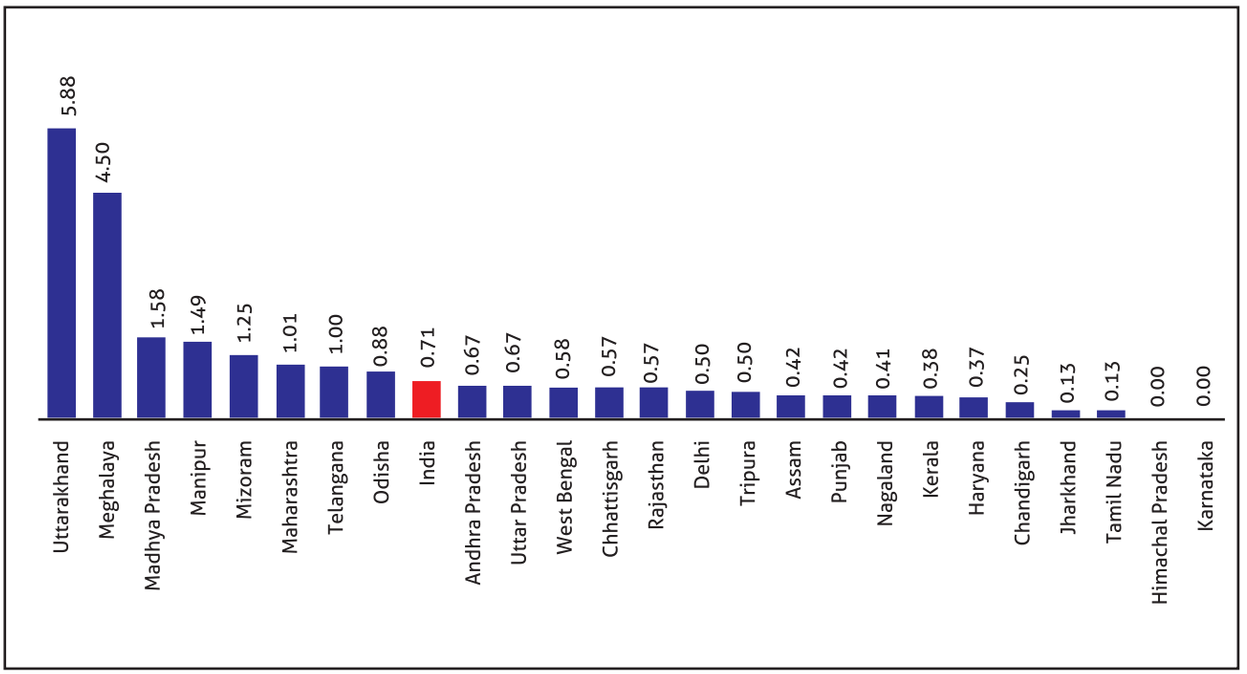


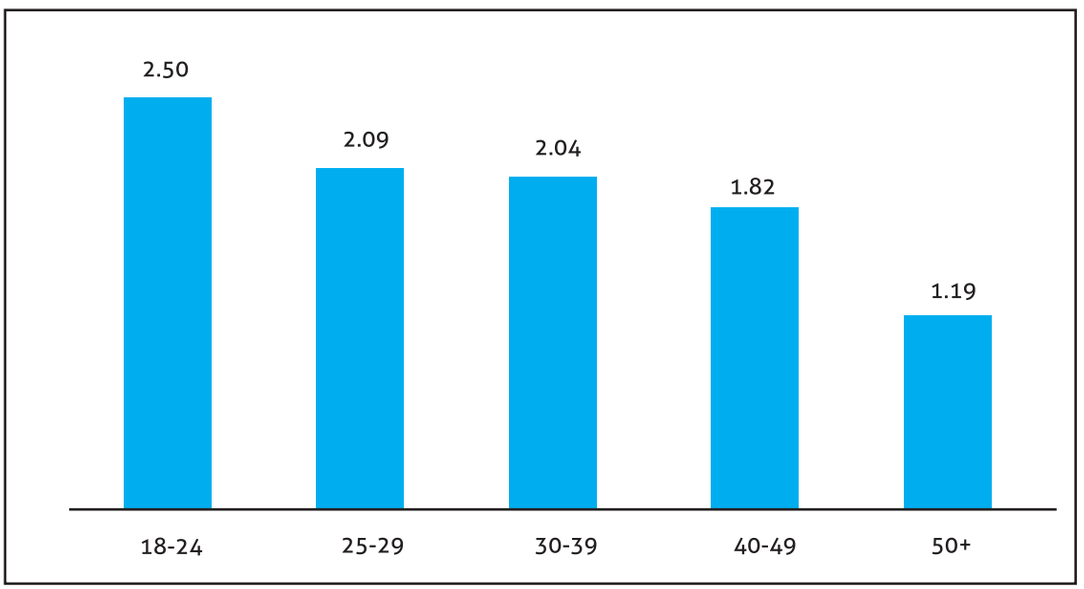
Table 3.9: State/UT-wise weighted sero-prevalence (%)/sero-positivity (%) of HIV, and Syphilis among inmates, Prison HSS Plus 2023

State/UT	HIV		Syphilis	
	N	Sero-prevalence	N	Sero-prevalence
Andhra Pradesh	1200	2.58 (1.69-3.48)	1200	0.67 (0.21-1.13)
Assam	1200	4.17 (3.04-5.30)	1200	0.42 (0.05-0.78)
Bihar**	1200	0.17 (0.00-0.40)	-	-
Chandigarh	400	3.25 (1.51-4.99)	400	0.25 (0.00-0.74)
Chhattisgarh	1591	1.07 (0.56-1.57)	1591	0.57 (0.20-0.93)
Delhi	800	2.63 (1.52-3.73)	800	0.50 (0.01-0.99)
Gujarat	1599	0.50 (0.15-0.85)	-	-
Haryana	800	2.75 (1.62-3.88)	800	0.37 (0.00-0.80)
Himachal Pradesh	400	0.00 (0.00-0.00)	400	0.00 (0.00-0.00)
Jharkhand	792	0.38 (0.00-0.81)	792	0.13 (0.00-0.37)
Karnataka	1552	1.03 (0.53-1.53)	1200*	0.00 (0.00-0.00)

Kerala	800	0.25 (0.00-0.60)	800	0.38 (0.00-0.80)
Madhya Pradesh	1200	1.42 (0.75-2.09)	1200	1.58 (0.88-2.29)
Maharashtra	1600	1.13 (0.61-1.64)	1584	1.01 (0.52-1.50)
Manipur	67	2.99 (0.00-7.06)	67	1.49 (0.00-4.40)
Meghalaya	400	5.50 (3.27-7.73)	400	4.50 (2.47-6.53)
Mizoram	400	21.50 (17.47-25.53)	400	1.25 (0.16-2.34)
Nagaland	241	6.64 (3.50-9.78)	241	0.41 (0.00-1.23)
Odisha	800	0.25 (0.00-0.60)	800	0.88 (0.23-1.52)
Punjab	1200	9.25 (7.61-10.89)	1200	0.42 (0.05-0.78)
Rajasthan	1582	1.58 (0.97-2.19)	1582	0.57 (0.20-0.94)
Tamil Nadu	1600	0.81 (0.37-1.25)	1600	0.13 (0.00-0.30)
Telangana	400	2.75 (1.15-4.35)	400	1.00 (0.02-1.98)
Tripura	400	6.00 (3.67-8.33)	400	0.50 (0.00-1.19)
Uttar Pradesh	1600	2.50 (1.74-3.26)	1200#	0.67 (0.21-1.13)
Uttarakhand	800	1.38 (0.57-2.18)	800	5.88 (4.25-7.50)
West Bengal	1200	0.42 (0.05-0.78)	1200	0.58 (0.15-1.01)
India	25824	1.99 (1.82-2.16)	22257	0.71 (0.60-0.82)

**One testing laboratory in Karnataka which had discordant results for syphilis (more than 10%), test results for all the sites associated with those laboratories were considered as invalid. **As different testing algorithm was used in Bihar, Syphilis testing result was not considered.*

Figure 3.13: HIV prevalence by age group among inmates, Prison HSS Plus 2023



3.8 HIV Prevalence by respondent's characteristics

Table 3.10 presents the HIV prevalence by inmate's characteristics at national level in HSS Plus 2023. Higher HIV prevalence was observed among inmates in the younger age group in comparison with older age group (18-24 years: 2.50%, 25-29 years: 2.09%, 30-39 years: 2.04%, 40-49 years: 1.82%, 50 years and above: 1.19%) (Figure 3.13). HIV prevalence was inversely associated with education; the prevalence decreased as education level increased. Higher HIV prevalence was noted among illiterate and those among who had education upto 5th standard while lowest prevalence was noted among those with post-graduate education (0.88%) (Figure 3.14). HIV prevalence was at 2.48% among undertrial inmates in comparison to 1.11% among those who were convicted (Figure 3.15). Inmates who were currently married had lower HIV prevalence than inmates who were never married (1.59% vs 2.63) (Figure 3.16). Inmates whose current imprisonment duration was less than three months had higher prevalence than those whose current imprisonment status were three months or above (Figure 3.17). Inmates who had been in prison in two times or more had higher HIV prevalence (4.30%) (Figure 3.18).

Figure 3.14: HIV prevalence by education of inamtes, Prison HSS Plus 2023

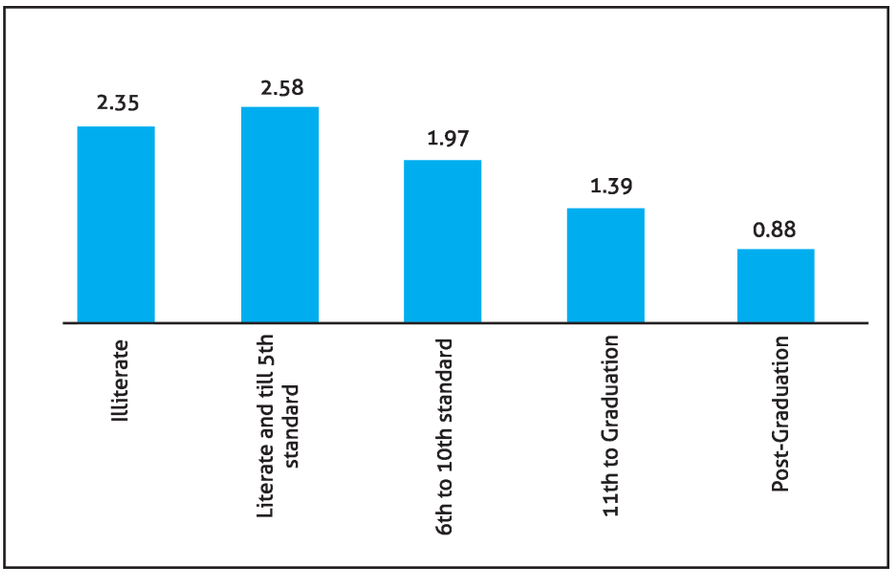


Figure 3.15: HIV prevalence by current prisoner status of inmates, Prison HSS Plus 2023

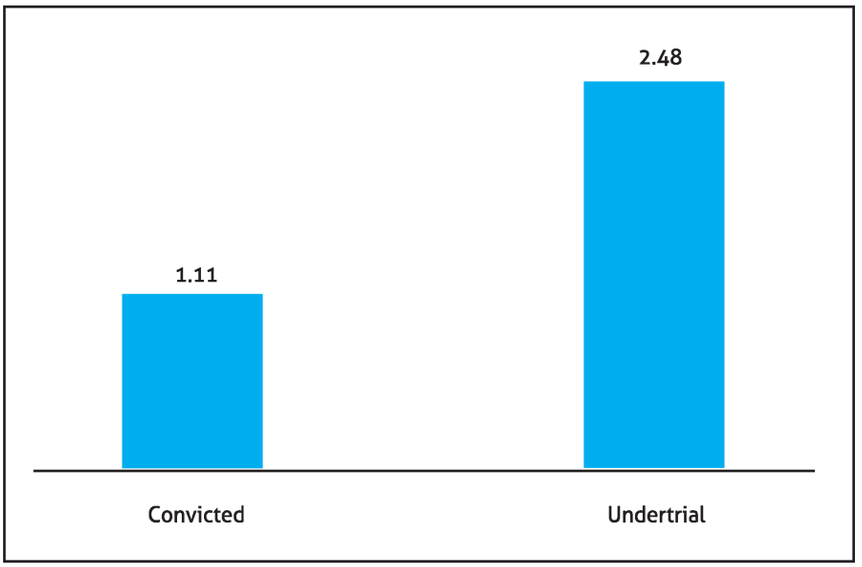


Figure 3.16: HIV prevalence by marital status of inmates, Prison HSS Plus 2023

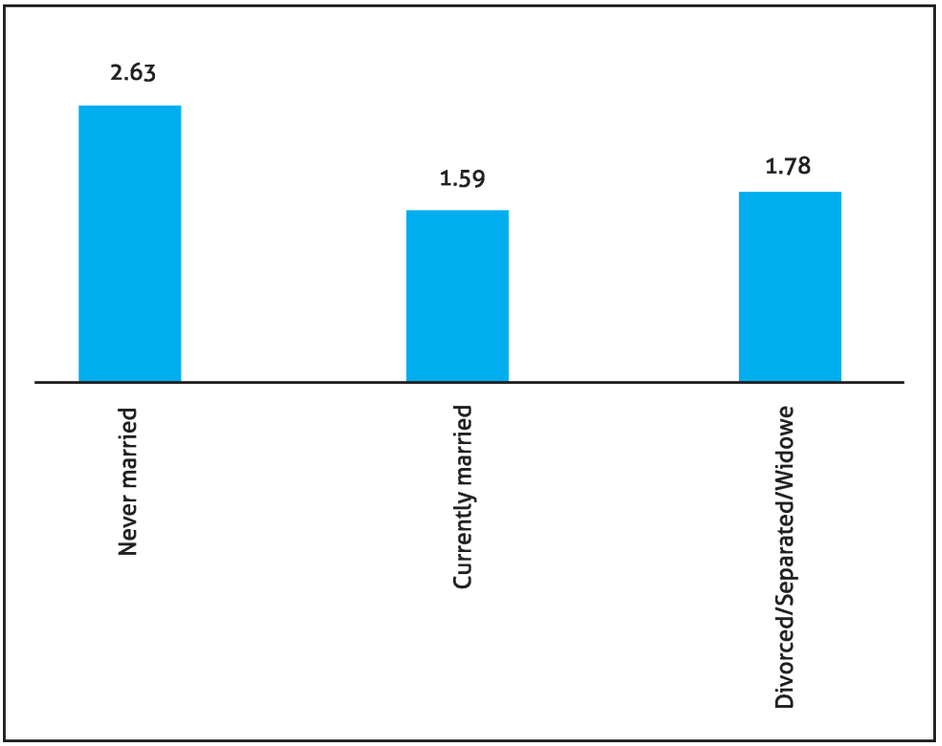


Figure 3.17: HIV prevalence by duration of current imprisonment of inmates, Prison HSS Plus 2023

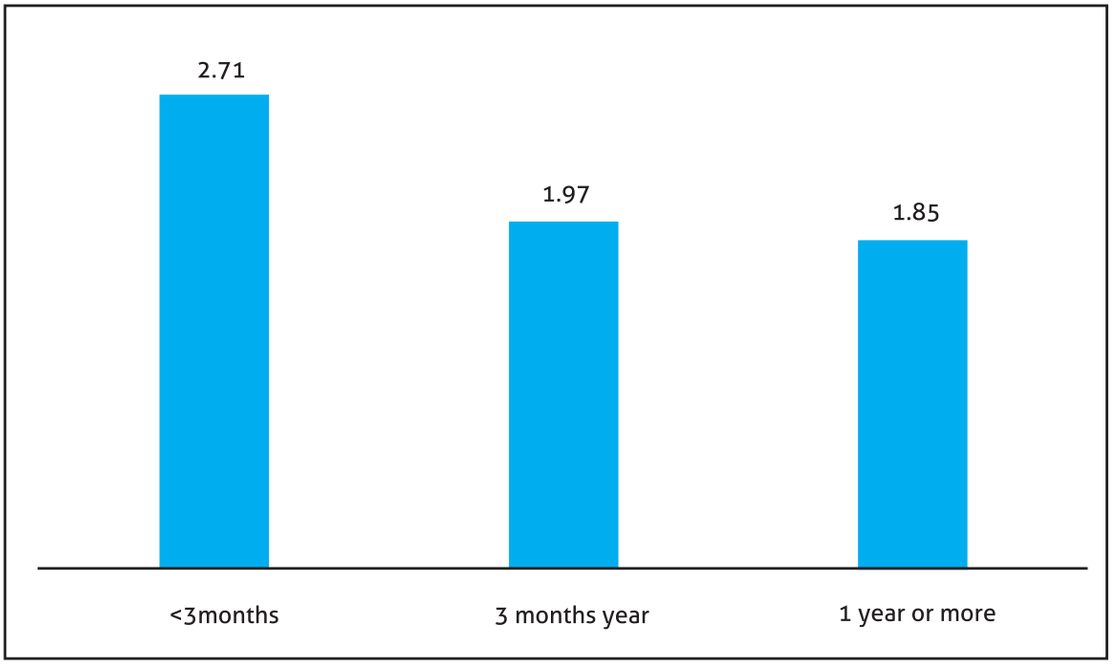


Figure 3.18: HIV prevalence by previous history of imprisonment of inmates, Prison HSS Plus 2023

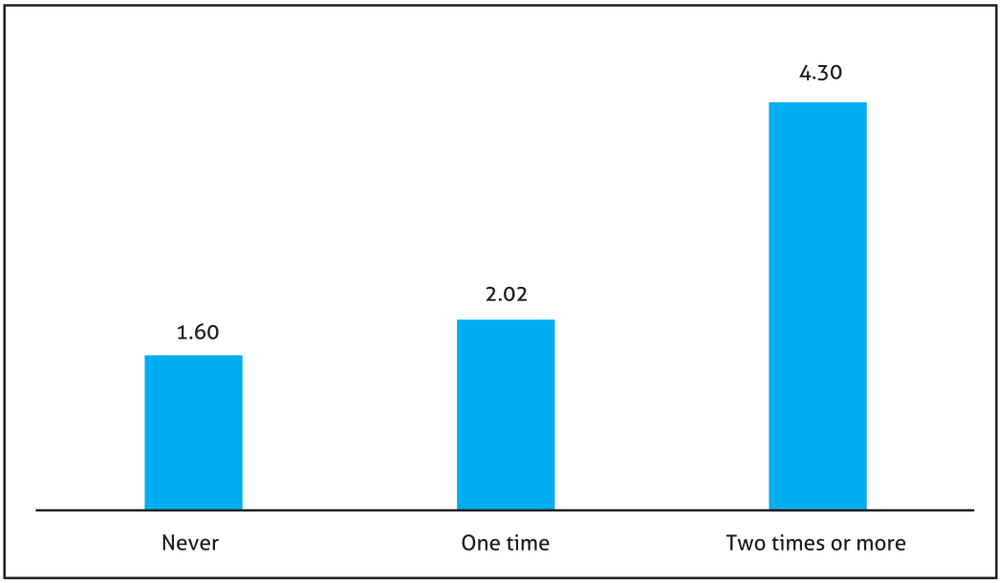


Table 3.10: HIV prevalence by background characteristics of inmates, Prison HSS Plus 2023

Background characteristics	Disaggregation	Distribution		HIV
		Frequency*	Percent	Prevalence
Age	18-24	4950	19.2	2.50
	25-29	5118	19.8	2.09
	30-39	7637	29.6	2.04
	40-49	4374	16.9	1.82
	50+	3745	14.5	1.19
Current prisoner Status	Convicted	9920	38.8	1.11
	Undertrial	15628	61.2	2.48
Education	Illiterate	3467	13.4	2.35
	Literate and till 5th standard	5431	21.0	2.58
	6th to 10th standard	11240	43.5	1.97
	11th to Graduation	4959	19.2	1.39
	Post-Graduation	635	2.5	0.88
Current marital status	Never married	9419	36.5	2.63
	Currently married	15168	58.7	1.59
	Divorced/Separated/Widower	1150	4.5	1.78
Duration of current imprisonment	<3 months	2534	9.9	2.71
	3 months-1 year	7396	28.9	1.97
	1 year or more	15671	61.2	1.85
Previous history of imprisonment	Never	16392	64.0	1.60
	One time	6822	26.6	2.02
	Two times or more	2394	9.4	4.30

**Total may not add up to 25,824 because of missing/not applicable response*

4. DISCUSSION

The HSS Plus among inmates at the central prisons under the National AIDS and STD Control Programme (NACP) in India stands out as one of the few large-scale systematic HIV/AIDS related bio-behavioural surveillance systems globally. According to the latest figures from National Crime Records Bureau on prison statistics-2022, there were 5.73 lakh (0.57 million) prisoners by the end of year 2022, with around 18.04 lakh (1.80 million) admitted to various prisons of the country during the same year. The findings from the HSS Plus 2023 hold immense significance in augmenting evidence-driven national AIDS response, aiming to reach to more than 18 lakh inmates.

In this third round of HSS Plus 2023, implemented across 66 selected central prisons in 27 States/UTs of India, the methodology remained consistent with previous rounds with few enhancements. Notably, the inclusion of treponemal test followed by RPR aimed to obtain more accurate estimates of syphilis prevalence among prison inmates. The weighted prevalence of HIV infection among prisoners was observed to be about 1.99% in 2021. This is almost nine times higher than that in the general population and comparable to HIV prevalence observed among female sex workers in India. However, although prevalence is much higher, the knowledge about HIV/AIDS is much below the desired levels. Only one-third inmates had comprehensive correct knowledge of HIV/AIDS. In Punjab, awareness of HIV transmission through the reuse of previously used needles was reported by only two-fifths of respondents.

The findings show sub-optimal coverage of HIV testing in a population where HIV prevalence is much higher than the general population. Only two-fifth prison inmates reported to have tested for HIV in last 12 months. As a result of sub-optimal testing coverage, one out of two HIV positive inmates were on ART. This is a critical gap and a priority area of future interventions, as the national programme aims to achieve target of 95-95-95 by 2025.

Moreover, the findings establish over-representation of injecting drug users in Indian prisons compared to the general population. In Mizoram, almost three of every 10 and in Punjab, two of ten inmates reported ever injecting drug for pleasure. Around 75% of IDU inmates reported use of sterile N/S for their last injecting episode in comparison to 85% by IDU in general (National Integrated Biological Behavioural Surveillance Survey, India, 2015). Clearly, the inmates with IDU history are less likely to follow safe injecting drug practices.

The findings also indicate presence of sexual activities in prison with seven of every 100 inmates reporting the same. Also, the clients of sex workers are represented in central prisons in a significant proportion with only three-fifth reporting use of condoms during their last sexual act with paid partners.

Highest HIV prevalence was noted in state of Mizoram (21.50%), followed by Punjab (9.25%), Nagaland (6.64%), Tripura (6.00%), Meghalaya (5.50%), Assam (4.17%), Chandigarh (3.25%), Manipur (2.99%), Haryana (2.75%), Telangana (2.75%), Delhi (2.63%), Andhra Pradesh (2.58%), and Uttar Pradesh (2.50%). HSS Plus 2023 documented significant high prevalence of HIV-Hepatits C co-infections in general. At the same time, prevalence of syphilis, and Hepatitis C infections among HIV infected inmates was significantly higher. This HSS Plus 2023 corroborates the need for regular screening for HBV and HCV infection among HIV infected patients as a part of the client centric services under NACP.

Overall, the HSS Plus 2023 report provides critical data on the level of HIV, syphilis, Hepatitis B and Hepatitis C among central prison inmates, reaffirming the over representation of individuals at high risk of HIV infection within Indian prisons. As majority of the inmates eventually return to their communities, the comprehensive package of services, across prevention-detection-treatment continuum in prisons and other closed settings, under the NACP is crucial as country moves towards achieving 'End of AIDS' as a public health threat by 2030. While further in-depth analysis of data will enhance the insights into the epidemic of HIV, Syphilis and related co-morbidities, the current report provides critical evidence for shared actions providing holistic and comprehensive care as reflected under NACP-Phase V.

Annexure-1

Participant Information Sheet and Informed Consent Form for Eligible Inmates Aged 18 Years or above

Participant Information Sheet

Warm Greetings! I am a Nurse/Counsellor from _____ HIV Counselling and Testing Service (HCTS) facility. We are part of National AIDS Control Program.

Background: I am having this interaction with you as we are having this survey on behalf of Government of India. We have a document which we will provide to you and through this document, we would like to provide information about the HIV Sentinel Surveillance conducted by Govt. of India. This form explains the purpose and details of this survey and your role and participation in the same. Please read the following information carefully. If you prefer, we can read it out for you so that you may understand all about this survey before you decide to participate. After you have understood this information, we will request you to provide consent and participate in the survey. If you have any questions/ queries, you can ask us before giving the consent.

Purpose: Government of India conducts surveys to collect the information on various health conditions; HIV Sentinel Surveillance (HSS) is one of them. HSS is being conducted by National AIDS Control Organization (NACO), Ministry of Health and Family Welfare, Govt. of India, the nodal national agency for control of HIV in India. In this HIV Sentinel Surveillance, we are collecting information on HIV, Syphilis, Hepatitis B and Hepatitis C to understand how many people are having these diseases among prison Inmates. This surveillance will be conducted every two years over a period of three months across selected Central Prison sites in India. 400 Prison inmates are being included in the survey from each Central Prison sites and you are chosen as one among them.

Procedure: If you agree to participate in this survey, we will first ask you some questions on background characteristics, HIV related testing and treatment services uptake and viral hepatitis. This may take around 10-15 minutes. After you answer the questions, we will collect 5 ml (one teaspoon) of blood through your vein. This will take about 1-2 minutes and will be done by our trained lab technician. Our lab technicians will use disposable, clean and completely safe equipment for the collection of samples. Data and sample collection procedure will be carried out maintaining all COVID appropriate safety protocol as per respective State guidelines.

We request you to respond to the questions truthfully, to the best of your knowledge. There is no right or wrong answer to any of the questions. Your participation in this surveillance survey is entirely voluntary. If you wish not to take part, you can freely do so, we respect your rights. You do not have to answer a question that you do not wish to and also may refuse to provide blood sample. Your answers will be collected on a paper based study tool. Your name and address will not be taken in this interview and your data will only be identified by a sample number.

Your blood sample will be tested for HIV, Syphilis, Hepatitis B and Hepatitis C. The blood samples collected will be sent to a HSS testing laboratory in the country where test will be conducted. Test result will take

around 1-2 months. If your sample is reactive to any of the given tests, we will reach out to you in very confidential manner for the further testing and treatment services using the records available with the HCTS. In order to ensure your immediate medical care, we will provide you the Integrated Counseling and Testing Centre (ICTC) services as per the National HIV Counseling and testing services (HCTS) guidelines and Hepatitis B and Hepatitis C services through the program for Hepatitis control and prevention.

Possible Risk and Discomforts: We do not anticipate any harm to you by your participation in the survey. Your participation is completely voluntary and data collection and storage is completely confidential. Our trained lab technician will collect your blood sample by using a safe and sterile needle in a clean and private environment. Yet, you may feel some discomfort during the process. If you feel any discomfort, please let us know immediately. We may wait or stop the procedure if you wish.

Possible Benefits: This survey is not intended for any individual benefit to the participant. However, the results of this surveillance will help Government of India to improve and augment appropriate services all across India for HIV, Syphilis and Hepatitis B and Hepatitis C disease for Prison Inmates. It will be beneficial to the communities who are at risk of getting infected with HIV in your community and region and in India as a whole.

Confidentiality: Please note that all the bio-behavioural data collected under this surveillance will be kept completely confidential. The surveillance staffs are trained to maintain confidentiality of data and conversations with you will not be disclosed. The collected data will be entered in a password protected data base. The information collected and the data base will not be shared with the outside the surveillance survey team at national, regional and state and site level. Your name will only be recorded on consent form but not on the data form or on specimen. The anonymized and combined data will be analysed and dissemination in the form of publication.

Participant's rights and freedom to withdraw: Your participation in this surveillance is entirely voluntary. It is your choice whether to participate or not. If you wish not to take part, you can freely do so, we respect your rights. You may choose not to answer any of the questions and also may refuse to provide samples. Additionally, you may also stop participating in the survey at any time you choose. Your refusal will not affect your routine care.

Compensation for participation:

We will be offering you required services for HIV, STI and Hepatitis infections at this clinic. There is no other compensation for participation in this surveillance.

Compensation for injury:

Though we don't anticipate such risk to you due to your participation, we have taken adequate care to ensure that you don't face any trouble. In case you face any trouble due to your participation, you are requested to immediately report the same as per the details given below and adequate and appropriate care will be given to you.

Possible future use of biological material and data:

If you agree we may preserve the samples and use it in future for public health activities for the benefit of the community only as per approval of NACO, Govt. of India. We will not allow any commercial use of your samples.

Contact Details: If you ever have any question about this survey, or if you face any trouble due to your participation in Central Prison HSS Plus surveillance -, you are requested to immediately contact Dr. Pradeep Kumar, National Consultant (Surveillance and Epidemiology), Strategic Information, National AIDS Control Organization, New Delhi at Tel. – 011- 43509906 or <Name and contact number of PI and PC>or you may contact 24X7 toll-free helpline number 1097. For queries related to the rights as a study participant, please write to: <Chairperson, Name and contact details of ethics committee>

Do you have any Questions?

If you are willing to participate in this survey, we request you to sign / provide your thumb impression with date in the informed consent form below :

Informed Consent Form for Participants Aged 18 Years or Above

I have read the foregoing information, or it has been explained to me in the language I understand. I have had the opportunity to ask questions and all my questions have been answered satisfactorily. I have fully understood all the information, benefits and risks associated with participation in this survey. I understand that I can withdraw my participation anytime, for any reason. I have understood my role in this survey including the method of data collection and willingly agree to participate and respond to the questions asked. I also know that the information collected from me will be kept anonymous and confidential. I am willing to participate in this survey and give my blood sample for HIV, Syphilis, Hepatitis B and Hepatitis C. I know that the data/sample collected under this survey will be used by the National AIDS Control Programme to improve the HIV services with full confidentiality. I agree that the HSS staff may reach out to me for follow up (counselling and treatment services) if my sample is reactive for any of the tests.

Kindly put (✓) in the relevant option for consenting:

I consent for the survey team to interview	Yes	No
I consent for providing the blood samples and testing it for HIV/Syphilis/ Hepatitis B/ Hepatitis C	Yes	No
I consent for being contacted for follow up medical services if my samples are reactive for any of the test	Yes	No
I consent for publication and dissemination of anonymized and combined data	Yes	No
I permit to store the left-over (if any) samples for future testing and public health activities	Yes	No

Date	Name of the participant	Signature/thumb impression of the participant

Date	Name of the Witness	Signature of the Witness

[Signature of the witness is required if the respondent is illiterate. Witness should be literate and not related to the research team].

Date	Name of the Nurse/Counsellor	Signature of the Nurse/Counsellor

Annexure-2

List of designated ILC testing laboratories

	Designated ILC Testing Lab	State/UT
1.	All India Institute of Medical Sciences (AIIMS), New Delhi	Chandigarh Himachal Pradesh Punjab
2.	National Institute of Immunohaematology (NIIH), Mumbai	DNH & DD Madhya Pradesh Maharashtra (Mumbai)
3.	National Institute of Communicable Diseases (NICD), New Delhi	Delhi Haryana J&K and Ladakh Rajasthan
4.	National Institute of Biologicals (NIB), Noida	Uttar Pradesh Uttarkhand
5.	National Institute of Translational Virology and AIDS Research (NITVAR), Pune	Goa Gujarat Maharashtra
6.	National Institute of Mental Health and Neuro-Sciences (NIMHANS), Bangalore, Karnataka	Karnataka
7.	School of Tropical Medicine (STM), Kolkata, West Bengal	Bihar Chhattisgarh Sikkim West Bengal
8.	Institute of Preventive Medicine (IPM), Hyderabad, Andhra Pradesh	Andhra Pradesh Telangana
9.	National Institute for Research in Bacterial Infections (NIRBI), Kolkata, West Bengal	A&N Islands Assam Jharkhand Meghalaya Mizoram Odisha

10.	Regional Institute of Medical Sciences (RIMS), Imphal, Manipur	Arunachal Pradesh Assam Manipur Tripura
11.	Christian Medical College (CMC), Vellore, Tamil Nadu	Kerala
12.	Tamil Nadu Dr. MGR Medical University (TNMGR), Chennai, Tamil Nadu Tamil Nadu	Puducherry
13.	Madras Medical College (MMC), Chennai, Tamil Nadu	Tamil Nadu

Annexure-3

HSS PLUS 2023: DATA FORM FOR PRISON SITES

[Please fill the site details in the box below/ Paste the sticker with site details/Stamp the site details in the empty box]

State: _____ District: _____ Site/Sub-site Name: _____ _____ (Site Code) (SSN) (Sample No) (Date DD/MM/YY) ☐☐☐☐☐☐☐☐ ☐ ☐☐☐ ☐☐☐☐☐☐	

Kindly put (✓) in the relevant option for consenting :

I consent for the survey team to interview	Yes	No
I consent for providing the blood samples and testing it for HIV/Syphilis/ Hepatitis B/ Hepatitis C	Yes	No
I consent for being contacted for follow up medical services if my samples are reactive for any of the test	Yes	No
I consent for publication and dissemination of anonymized and combined data	Yes	No
I permit to store the left-over (if any) samples for future testing and public health activities	Yes	No

Section 1: Background Characteristic

Statement : Thank you very much for agreeing to participate in this surveillance. As I mentioned, this survey is completely anonymous, confidential and will help the government of India to design and enhance HIV/AIDS services in prison and other correctional institutions. So, we will now start the interview.

1. How old are you? (Age in completed years) ☐☐

2. What is your current marital status?
   1. Never Married
   2. Currently Married
   3. Divorced / Separated / Widower

3. What is the highest grade/class you have completed?
   1. Illiterate
   2. Literate and till 5th Standard
   3. 6th to 10th Standard
   4. 11th to graduation
   5. Post-Graduation & above

4. What is your current prisoner status?
   1. Convicted
   2. Under trial

5. Since how long you are in this prison?
   1. Less than one month **2.** One month to less than three months
   3. Three months to less than 12 months **4.** One year to less than three years
   5. Three years or more

6. How many times you had been in prison before the present imprisonment?
   1. Never **2.** One Time
   3. Two times or more

Section 2 : HIV/AIDS related knowledge

Statement : As we mentioned before, the focus of the current survey is to augment the healthcare services among the prison population further. So, now I would like to ask you some questions about awareness about the health programme for which this survey is being done.

7. Have you heard of HIV or AIDS?
   1. Yes **2.** No

Note : If the response for question no 7 is "No" (i.e. code '2'), then skip the rest of section 2 and whole of section 3 and go to the section 4 please.

8. Is it possible to reduce the risk of HIV infection by having sexual relations with just one uninfected faithful sexual partner?
   1. Yes **2.** No **99.** Don't know

9. Is it possible to reduce the risk of HIV infection by using a condom every time one has sex?
   1. Yes **2.** No **99.** Don't know

10. Can a person get HIV from mosquito bites?
    1. Yes **2.** No **99.** Don't know

11. Is it possible to become HIV infected by sharing a meal with a person infected with HIV?
    1. Yes **2.** No **99.** Don't know

12. Is it possible for a healthy-looking person to have HIV/AIDS?
    1. Yes **2.** No **99.** Don't know

13. Can a person get HIV by using an injection needle that was already used by someone else?
    1. Yes **2.** No **99.** Don't know

Section 3 : HIV/AIDS related services uptake

Note : Section 3 is applicable only for the respondents who are aware of HIV/AIDS, i.e. who responded "Yes" for question no 7. If the response for question no 7 is "No" (i.e. code '2'), then skip this section and go to the section 4 please.

Statement : As we told, the focus of the current survey is to augment the healthcare services among the prison population further. So, as you are aware of HIV/AIDS disease, now I will like to ask you some questions about the uptake of the HIV/AIDS-related services for which this survey is being done.

14. Have you ever been tested for HIV before?
1. Yes **2.** No **99.** Don't know / No Response

Note : If the response for question no 14 is "No" (i.e., code '2') or Don't know / No Response (i.e. code '99'), then skip the rest of section 3 and go to the section 4 please

15. Have you been tested for HIV in last 12 months?
1. Yes **2.** No **99.** Don't know / No Response

16. What was the result of your last HIV test?
1. Positive **2.** Negative **3.** Did not collect the test result
99. Don't know / No Response

Note : If the response for question no. 16 is "Positive" (i.e. code '1'), then ask the question '17'. Otherwise, skip the question '17' and go to the section 4 please.

17. You mentioned that your last test result was HIV positive. Are you currently taking antiretroviral medications/HIV tablets?
1. Yes **2.** No **99.** Don't know / No Response

Section 4 : Injecting Drug Use Practices

Statement : Now, I would like to ask some questions related to injecting drug use. I will like to reassure you that the sentinel survey is fully anonymous and confidential. An honest response to these questions will be of extreme help to the national health programme. Please feel free to stop me and ask your doubts at any time if you desire so.

18. In your opinion, do inmates in this prison inject drugs for pleasure?
1. Yes **2.** No **99.** Don't know / No Response

19. Have you ever injected yourself with any drug for pleasure in your lifetime?
1. Yes **2.** No

Note : If the response for question no 19 is "Yes" (i.e. code '1'), then ask the question 20, 21 and 22. If the response for question '19' is "No" (i.e. code '2'), then skip the rest of section 4 and go to the section 5.

20. When was the last time you injected yourself with any drug for pleasure?
1. Less than a month **2.** One month to less than three months
3. Three months to less than 12 months **4.** One year or more

21. When you injected last for pleasure, did you use a sterile needle / syringe for injecting yourself?
1. Yes **2.** No **99.** Don't remember

22. When you injected last, did you share needle/syringe already used by you with a fellow injecting drug user?
1. Yes **2.** No **99.** Don't remember

Section 5: Sexual Behaviour and Condom Use Practices

Statement : Thank you very much for all the support provided till now. In this section, we would like to ask you some questions regarding sexual behaviour. I understand how personal those questions are, but at the same time, I would like you to note once again that confidentiality is fully maintained in this survey. The same questions are being asked to all the participants.

23. In your opinion, do inmates in this prison have sexual intercourse with other prisoners?
    1. Yes **2.** No **99.** Don't know / No Response

24. Have you ever had sexual intercourse in your lifetime?
    1. Yes **2.** No

Note : If the response for question no 24 is "Yes" (i.e. code '1'), then ask the question 25, 26 and 27. If the response for question no 24 is "No" (i.e. code '2'), then skip the rest of section 5 and go to the section 6.

25. When was the last time that you had sexual intercourse?
    1. Less than a month
    2. One month to less than three months
    3. Three months to less than 12 months
    4. One year or more

26. During your last sexual intercourse, did you use condoms?
    1. Yes **2.** No **99.** Don't remember

27. With whom you had your last sexual intercourse?
    1. Regular female partner (spouse/lover/girlfriend/Live-in partner)
    2. Commercial female partner
    3. Non-commercial non-regular female partner (casual partner)
    4. Male partner
    5. Hijra /Transgender partner

Section 6 : Viral Hepatitis

Statement : Hepatitis and HIV co-infection has emerged as a critical challenge for HIV infected people. Many people living with HIV receiving antiretroviral therapy are also suffering from liver disease resulting from untreated viral hepatitis. Knowing about hepatitis will help national programme to understand the severity of hepatitis disease and plan the resources accordingly. And hence, we will like to ask you certain questions about hepatitis. I would like you to note once again that confidentiality is fully maintained in this surveillance survey, and the same questions are being asked to all the participants.

Hepatitis in General

28. Have you ever had jaundice in the past one year?
    1. Yes **2.** No

29. Have you heard of hepatitis?
1. Yes **2.** No

Note : If respondent has reported "Yes" in question number '29', then ask the questions '30-40' as per instructions provided. If answer to above question '29' is "No", please skip question numbers '30' to '40'. Thank the inmate and end the interview.

30. Are you aware of testing being offered for hepatitis in the government facilities?
1. Yes **2.** No

31. Are you aware of treatment being offered for hepatitis in the government facilities?
1. Yes **2.** No

Hepatitis B

Statement: Thank you very much for your response. It was very useful to understand your awareness about hepatitis. Now I will ask some questions pertaining to Hepatitis B. Will request for your kind patience and response to these questions

32. Have you ever received the Hepatitis B vaccine?
1. Yes **2.** No **99.** Don't know / No response

33. Have you ever been tested for Hepatitis B?
1. Yes **2.** No **99.** Don't know / No response

Note: If the inmate has reported "Yes" in question number '33', then ask the questions '34-36' as per instructions provided. If the answer to above question '33' is "No", or "Don't know/No Response", please skip question numbers '34' to '36' and go to the question number '37'.

34. You mentioned that you have been tested for Hepatitis B. When was the last time you were tested for Hepatitis B?
1. Less than or equal to 12 months ago
2. More than 12 months and less than three years ago
3. Three years or more ago

35. What was the result of your last Hepatitis B test?
1. Positive **2.** Negative
3. Did not collect the test result **99.** No Response

Note: If the inmate has reported option 1, i.e. "Positive" in question number '35', then ask question '36' to the inmate. If the response is anything else, please skip question number '36' and go to question number '37'.

36. You mentioned that your last test result was positive for Hepatitis B. Did you take any medicine to treat your Hepatitis B infection?
1. Yes **2.** No **99.** Don't know / No response

Hepatitis C

Statement: Thank you very much for all your support so far. Now we have reached to the last segment of this interview where I will ask some questions pertaining to Hepatitis C. I would like you to state once again that confidentiality is fully maintained in this surveillance survey, and the same questions are being asked to all the participants of this group.

37. Have you ever been tested for Hepatitis C?

1. Yes **2.** No **99.** Don't know / No response

Note: If the inmate has reported option 1 "Yes" in question number '37', then ask questions '38' to '40' as per instructions provided. If the answer to above question '37' is option 2 "No", or option 99 "Don't know/No response" please skip questions '38' to '40'. Thank the inmate and end the interview.

38. You mentioned that you have been tested for Hepatitis C. When was the last time you were tested for Hepatitis C?

1. Less than or equal to 12 months ago

2. More than 12 months and less than three years ago

3. Three years or more ago

39. What was the result of your last Hepatitis C test?

1. Positive

2. Negative

3. Did not collect the test result

99. No Response

Note: If the inmate has reported option 1 "Positive" in question number '39', then ask question '40' to the inmate. If the response is anything else, please skip question number '40'. Thank the inmate and end the interview.

40. You mentioned that your last test result was positive for Hepatitis C. Did you take any medicine to treat your Hepatitis C infection?

1. Yes **2.** No **99.** Don't know / No response

CONFIDENTIAL : ONLY FOR THE USE OF HSS SITE PERSONNEL

Note : Note: Thank the inmate for his support and cooperation and reassure him about the anonymity and confidentiality of answers. Take him to the lab technician for blood specimen collection. Ensure that the sample number on data form and blood specimen vial is same.

Signature:	Signature :
Name:	Name:
(Person who filled the form)	(Sentinel Site in-charge)

Annexure-4

LIST OF CONTRIBUTORS ENGAGED IN HSS 2023 IMPLEMENTATION

National AIDS Control Organization

Dr. Chinmoyee Das, Head-Strategic Information
Dr. Pradeep Kumar, National Consultant
Dr. Arvind Kumar, Consultant
Dr. Subrata Biswas, Consultant
Dr. Nidhi Priyam, Associate Consultant

REGIONAL INSTITUTES

AIIMS, New Delhi

Dr. Sanjay K Rai (Focal Person)
Dr. Shreya Jha (Consultant Cum Project Coordinator)
Mr. Nishakar Thakur (RO)
Dr. Lukram Slim (RO)
Dr. Devarshi Bhoi (RO)
Dr. Mukesh Savaria (Jr. Consultant)

ICMR-NITVAR, Pune

Dr. Sheela V. Godbole (Focal Person)
Dr. Rashmi Sindhe (Co-Focal Person)
Dr. Garima Meena (Project Coordinator)
Dr. Somya Mullapudi (Sr. Consultant)
Dr. Aditi Kulkarni (Jr. Epidemiologist)
Dr.Prachi Phadke (RO)
Mr.Kedar Padhye (RO)

ICMR-NIE, Chennai

Dr. A Elangovan (Focal Person)
Dr. Santhakumar Aridoss (Project Coordinator)
Mr. Ravi (Principal TO)
Dr. Manikandan (RO)
Dr. Malathi Mathiyazhakan (RO)
Dr. Padma Priya (RO)

ICMR-NIRBI, Kolkata

Dr. Shanta Dutta (Focal Person)
Ms. Piyali Ghosh (RO)
Dr. Debdutta Agasty (RO)
Dr. Mihir Bhatta (RO)
Mr. Pankaj Kumar Khan (Data Manager)

PGIMER, Chandigarh

Dr. PVM Lakshmi (Focal Person)
Dr. Chandrakanta Chauhan (Project Coordinator)
Dr. Kshitij Choudhary (Consultant Epid)
Dr. Sadrach Railton (Jr. Consultant, Epid)
Dr. Shivani Aloona (RO)
Dr. Herratdeep Singh Gill (RO)
Dr. Rahuldeep Singh (RO)
Ms. Pratishta Sharma (Data Manager)

RIMS, Imphal

Prof. H Sanayaima Devi (Focal Person)
Prof. Vijya E (Co-Focal Person)
Dr. T Tamphasana (Project Coordinator)
Dr. T Priyobala Devi (Sr. Epidemiologist)
Roshnibala Yurembam (RO)
Jayashree Laipubam (RO)
Rishikesh Maisnam (RO)

AIIMS, Bhubaneswar

Dr. Arvind Kumar Singh (Focal Person)
Dr. Subhakanta Sahu (Project Coordinator)
Mr. Hrushikesh Das (Epidemiologist)
Dr. Mili R Sahay (Jr. Epidemiologist)
Dr. J A Pritam (RO)
Dr. Shivangi Das (RO)
Kalolini D Samant (RO)
Sneha Pattanayak (Data Manager)

AIIMS, Jodhpur

Dr. Pankaj Bhardwaj (Focal Person)
Dr. Akhil Dhanesh Goel (Co-Focal Person)
Dr. Vibha Joshi (Consultant Epidemiology)
Dr. Abhishek Lohra (Jr. Consultant, Epid)
Dr Neha Mantri (RO)
Prasannajeet Bal (RO)
Shahzaad Hussain (RO)

NIRDHDS, New Delhi	VMMC & SJH, New Delhi
Dr. H K Chaturvedi (Focal Person) Dr. Vishal Deo (Co-Focal Person) Dr. Barnali Deka (Project Coordinator)	Dr. Sumathi Muralidhar (Focal Person) Dr. Anupam Anveshi (Project Coordinator)

State AIDS Control Societies

1. Mr. T Shankar Rao, HSS Focal Person, Andaman & Nicobar SACS
2. Mr. S. Senthil Nathan, Andaman & Nicobar SACS
3. Dr. Y Kameswara Prasad, Joint Director - BSD, Andhra Pradesh SACS
4. Mr. Sukumar A, M&E Consultant, Andhra Pradesh SACS
5. Koj Tara, DD (SI) & Focal Person HSS, Arunachal Pradesh SACS
6. Ranjanjyoti Deka, AD (SI) & State Focal Person HSS, Assam SACS
7. Dr. Rajesh Kumar Sinha, Nodal Officer Surveillance, Bihar SACS
8. Ms. Poonam Bakshi, Focal Person HSS, Chandigarh SACS
9. Mr. Sandeep Mittal, Deputy Director (TI), Chandigarh SACS
10. Mr. Manjeet Singh Gulia, AD (LS), Chandigarh SACS
11. Md. Hasim Khan, DD (SI), Focal Person HSS, Chhattisgarh SACS
12. Mr. Kshitiz Diwan, AD (SI), Chhattisgarh SACS
13. Dr. J.K. Mishra, JD (TI), Delhi SACS
14. Mr. Sabyasachi Chakraborty, Delhi SACS
15. Dr. Manoj Kumar Singh, APD,DD & DNH SACS
16. Mr. Sunil Bais, M&E Officer, DD&DNH SACS
17. Dr. Anu Amin, I/C JD-BSD, Gujarat SACS
18. Mr. Praveen Gupta, DD (SI), Gujarat SACS
19. Mr. Janak Agaja, I/C MEO, Gujarat SACS
20. Mrs. Heena Modi,DD AMC ACS, Gujarat SACS
21. Shri Sandesh Krishnanath Bhagat, CLS Goa SACS
22. Ms. Sulaksha Galyekar, Assistant Director (SI) Goa SACS
23. Ms. Kavita Pannu, SA (SI), Haryana SACS

24. Dr. Lalit Thakur, SPO, Himachal Pradesh SACS
25. Mr. Vinay Kumar, AD (SI), Himachal Pradesh SACS
26. Mr. Nissar Ahmad Dar, DD- TI, J&K SACS
27. Mr. Imran Ahmad Rather, AD (SI), J&K SACS
28. Dr. Sami Akhter Shams, AD (SI), Nodal HSS, Jharkhand SACS
29. Dr. Sanjay B. Patil, DD -SI, Karnataka SACS
30. Ms. Ragi Ravi, Assistant Director (SI), Kerala SACS
31. Dr. Sunil Bhamare, APD, Maharashtra SACS
32. Dr. Pramod Deoraj, DD-M&E, Maharashtra SACS
33. Kiran Yewale, Consultant M&E, Maharashtra SACS
34. Dr. H Diamond Sharma, HSS Focal Person, Manipur SACS
35. Abhiram Mongjam, JD(TI), Manipur SACS
36. Ms. Paonam Tilotama Devi, AD(M&E), Manipur SACS
37. Ms. Safeeda Grace Warjri, DD (SI)/ HSS Focal Person, Meghalaya SACS
38. Mr. Wilson Dohling, DD (TI), Meghalaya SACS
39. Dr. Richard CLR Hluna, JD (CST) / S&E, Mizoram SACS
40. J. Vanlalhruaia, DD (SI), Mizoram SACS
41. Dr. VijayKumar Karanjkar, APD (I/C) Mumbai SACS
42. Vyankatesh D. Bachate Assistant Director-ICTC,Mumbai SACS
43. Dr. Smita Chougule, DD (TI), Mumbai SACS
44. Mr. Anil Shinde, AD (SI), Mumbai SACS
45. Dr. T.D. Bhokaria Dy. Director, Madhya Pradesh SACS
46. Mr. Pankaj Pagey, Administrative Assistant, Madhya Pradesh SACS
47. Mrs. Savita Thakur, Joint Director (TI), Madhya Pradesh SACS
48. Koshlender Singh Rathore State Program Manager-Prison Intervention Madhya Pradesh SACS
49. Medovilhou Kire, DD SI, Nagaland SACS
50. Mr. Prabodh Kumar Siya, Assistant Director (SI), Odisha SACS
51. T.Balamurugan, DD SI, Puducherry SACS

52. Dr. Bobby Gulati, APD, Punjab SACS
53. Dr. Amrinderpaul Singh, DD SI, Punjab SACS
54. Mr. Sunil Kumar Joint Director (TI), Rajasthan SACS
55. Prakash Narwani, Assistant Director (SI), Rajasthan SACS
56. Mr. Satveer Lamba, Assistant Director (BSD),Rajasthan SACS
57. Passang Tamang, DD (M&E / BSD), Sikkim SACS
58. Gyan Tamang, AD SI, Sikkim SACS
60. Dr. Janakiram Marimuthu, DD (TI/M&E/Nodal officer DISHA), Tamil Nadu SACS
61. T Durga Srinivas, AD SI, Telangana SACS
62. Srabani Datta, Deputy Director (SI), Tripura SACS
63. Sunil Kumar Misra, Deputy Director (SI), Uttar Pradesh SACS
64. Gagandeep Luthra, AD SI, Uttarakhand SACS
65. Dr. Rahul Biswas, DD-CST, West Bengal SACS
66 Mr. Saibal Maity,AD-PPTCT & In-charge AD-SI, West Bengal SACS

NOTES

NOTES

सत्यमेव जयते
Ministry of Health & Family Welfare
Government of India

National AIDS Control Organisation
India's response to HIV & Sexually Transmitted Infections
Ministry of Health & Family Welfare, Government of India
www.naco.gov.in

शरीरमाद्यं खलु धर्मसाधनम्

icmr NIRDHDS
icmr NIRBI
icmr NITVAR
icmr NIE