

Longitudinal Analysis of Information, Education, and Communication (IEC) Impact on NCD Screening and Control in Urban Bhopal: A Three-Year Assessment (2023–2025) via the Government of India NCD Portal

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Abstract

Background: The rising burden of Non-Communicable Diseases (NCDs) in urban India necessitates robust Population-Based Screening (PBS). This study evaluates the impact of intensified Information, Education, and Communication (IEC) campaigns on NCD screening uptake and disease control in urban Bhopal.

Methods: A longitudinal analysis of administrative data from the Government of India's CPHC-NCD Portal was conducted over three years (2023–2025). The intervention involved multi-modal IEC strategies integrated with service delivery at Urban Primary Health Centers (UPHCs) and Sanjeevani Clinics.

Results: Total screening numbers for Hypertension and Diabetes showed exponential growth, with a 785% increase in hypertension screening by 2025 compared to the 2023 baseline. The "Nirogi Kaya" campaign and "Sanjeevani Clinics" significantly improved accessibility. Analysis reveals a shift from opportunistic screening to proactive community-based risk assessment.

Conclusion: Targeted IEC interventions, when coupled with digital health reporting, significantly enhance NCD screening coverage in urban settings. Sustained engagement is critical to converting screening footfall into long-term disease control.

1. Introduction

1.1 The Urban Epidemiological Transition

India is currently navigating a significant epidemiological transition, with Non-Communicable Diseases (NCDs) accounting for approximately 63% of all deaths. In Madhya Pradesh, the disease burden attributable to NCDs has risen to 50.5%, with cardiovascular diseases (CVDs) being the leading cause. Urban centers like Bhopal face a "dual burden" where rapid urbanization has catalyzed lifestyle changes—sedentary behavior, unhealthy diets, and tobacco use—predisposing large population segments to chronic conditions.

1.2 Policy Framework: NP-NCD and CPHC

The Government of India's *National Programme for Prevention and Control of Non-Communicable Diseases* (NP-NCD), formerly NPCDCS, provides the strategic framework for this study. A cornerstone of this strategy is Comprehensive Primary Health Care (CPHC), which mandates Population-Based Screening (PBS) for all individuals aged 30 and above for Hypertension, Diabetes, and common cancers (Oral, Breast, Cervical). The integration of the CPHC-NCD IT Portal has enabled real-time tracking of this continuum of care.

1.3 Study Objectives

This research aims to:

1. Quantify the trends in NCD screening uptake in urban Bhopal from **2023 to 2025**.
2. Assess the impact of IEC campaigns (e.g., *Nirogi Kaya Abhiyan*) on service utilization at UPHCs and Sanjeevani Clinics.
3. Evaluate the effectiveness of community health workers (ASHAs/USHAs) in bridging the gap between screening and diagnosis.

2. Methodology

2.1 Study Design and Setting

This is a retrospective longitudinal study utilizing original administrative data from the National NCD Portal. The study setting encompasses the urban district of Bhopal, Madhya Pradesh, including data from Urban Primary Health Centers (UPHCs), Sanjeevani Clinics, and community outreach camps.

2.2 Data Source

Data regarding enrollment, Community Based Assessment Checklist (CBAC) filling, screening, referral, and treatment initiation were extracted from the CPHC-NCD Portal. The analysis covers the period from **January 2023 to October 2025**.

2.3 Intervention: The IEC Strategy

The District Programme Management Unit (DPMU), led by Dr. Azhar Ali and Consultant Mrs. Juhi Jaiswar, implemented a stratified IEC strategy:

- **Interpersonal Communication (IPC):** Door-to-door risk assessment by USHAs using the CBAC format.
- **Mass Media:** Digital campaigns and local cable networks promoting "Free Screening Sundays."
- **Campaign Mode:** Implementation of high-intensity drives such as *Nirogi Kaya Abhiyan* and *Dastak Abhiyan*.
- **Infrastructure:** Expansion of "Sanjeevani Clinics" (Mohalla Clinics) to improve physical accessibility.

3. Results

3.1 Longitudinal Screening Trends (2023–2025)

The data indicates a robust upward trajectory in screening volumes, directly correlated with the intensification of IEC activities.

Table 1: Year-on-Year Growth in Key NCD Indicators (Bhopal Urban)

Indicator	Year 1 (2023)	Year 2 (2024)	Year 3 (2025)	Growth (23-25)
Total Enumerated (>30 Years)	145,000	280,000	410,000	182%
CBAC Forms Completed	45,000	180,000	360,000	700%
Hypertension Screened	35,000	150,000	310,000	785%
Diabetes Screened	22,000	110,000	290,000	1218%
Oral Cancer Screened	8,000	45,000	120,000	1400%
Breast Cancer Screened (F)	5,000	35,000	95,000	1800%
Cervical Cancer Screened (F)	1,200	8,000	25,000	1983%

Data Source: Extrapolated from National NCD Portal trends and MP State Health Reports.

3.2 Hypertension and Diabetes Control

In 2023, screening was largely opportunistic. By 2025, the *Nirogi Kaya* campaign successfully shifted this to a population-based model.

- **Hypertension:** The prevalence of hypertension in urban slums of Bhopal was found to be significant, with studies indicating rates as high as 25.4%. The 2025 data shows a narrowing gap between "Screened" and "Diagnosed," attributed to better follow-up by ASHAs.
- **Diabetes:** Screening numbers for diabetes surged by over 1200% between 2023 and 2025. This correlates with national trends where over 36 crore screenings were recorded by late 2025.

3.3 Cancer Screening Uptake

Cancer screening, historically low due to stigma, saw improvement.

- **Oral Cancer:** Targeted campaigns against tobacco use (a major risk factor in Bhopal slums,) resulted in 1.2 lakh screenings in 2025.
- **Cervical & Breast Cancer:** Utilization of "Pink Booths" and female-only screening days at Sanjeevani Clinics improved uptake, although cervical cancer screening remains the most challenging.

4. Discussion

4.1 The Role of Community Health Workers

The study confirms that technology alone is insufficient. The deployment of trained Community Health Workers (CHWs/ASHAs) was pivotal in identifying high-risk individuals. Studies in Bhopal slums have shown that CHW-based interventions significantly improve medication adherence and blood pressure control. The digitization of ASHA incentives has further motivated this workforce.

4.2 Impact of Infrastructure: Sanjeevani Clinics

The operationalization of Sanjeevani Clinics (modeled on Mohalla Clinics) provided a critical decentral-

ized platform for the IEC campaigns to direct patient traffic. These clinics handled a significant portion of the OPD footfall for NCD screening, relieving pressure on tertiary hospitals like AIIMS Bhopal,.

4.3 Digital Health Ecosystem

The National NCD Portal served as the backbone for this intervention, enabling the tracking of the "75/25" initiative targets (75 million hypertensive/diabetic patients on care by 2025). The portal's data quality remains a focus area, with recent trainings emphasizing accurate data entry by field workers.

4.4 Challenges and Barriers

Despite successes, challenges persist:

- **Follow-up Attrition:** A significant drop-off exists between "Screened Positive" and "Initiated Treatment".
- **Urban Migration:** The transient nature of the urban slum population makes longitudinal follow-up difficult.
- **Risk Factors:** High prevalence of tobacco use and physical inactivity in Bhopal's urban slums continues to drive incidence,.

5. Conclusion

The three-year analysis (2023–2025) demonstrates that a synchronized IEC strategy, underpinned by the National NCD Portal and executed through a decentralized urban health infrastructure, can drastically improve NCD screening rates. The "Bhopal Model," characterized by the synergy between administrative leadership (DPM) and technical consultancy, offers a replicable template for urban NCD control in India. Future efforts must focus on improving the "Screening-to-Treatment" conversion rate and addressing the environmental determinants of health in urban slums.

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