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NIRAMAYA

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Confronting NCDs in India: Challenges and Innovations

“As we embrace the challenge of non-communicable diseases, it is our collective responsibility to forge paths that not only lead to better health outcomes but also ensure no one is left behind in our journey towards a healthier tomorrow.”

- Union Minister of State for Health and Family Welfare, India

Introduction



In this quarter's edition of our e-magazine, we take a deep dive into the escalating crisis of Non-Communicable Diseases (NCDs) in India, reflecting on their profound implications for public health, policy, and economic stability. As the world's largest democracy navigates through significant socio-economic and demographic shifts, the burden of NCDs such as diabetes, cardiovascular diseases, and chronic respiratory conditions has grown, demanding urgent attention and comprehensive strategies to combat these silent killers.

India, a nation characterized by its vast population and diversity, stands at a critical juncture facing an NCD epidemic that threatens to undermine decades of developmental gains. Recent findings from the Indian Council of Medical Research-India Diabetes (ICMR-INDIAB) study provide alarming insights into the prevalence of metabolic NCDs across the country. This comprehensive study, spanning urban and rural demographics, underscores a stark reality: the prevalence of diseases like diabetes and hypertension is not only higher than previously thought but continues to rise, particularly in less developed states.

This edition of our e-magazine seeks to unravel the complex landscape of NCDs in India through a detailed analysis of the ICMR-INDIAB findings. Our feature articles and expert interviews explore the uneven distribution of these diseases across various states, influenced by factors such as urbanization, lifestyle changes, and socio-economic disparities. We also delve into healthcare delivery challenges in diverse settings, highlighting the need for region-specific health policies and robust healthcare infrastructure.

Moreover, our current issue aims to foster a dialogue on innovative strategies for NCD prevention, management, and control. We bring to the forefront the voices of policymakers, healthcare professionals, and community leaders, all united in their efforts to curb this growing epidemic. By showcasing successful case studies and discussing potential policy reforms, we hope to inspire actionable solutions that can be adapted and implemented across different regions of India.

As NCDs continue to pose a significant health threat, this quarter's e-magazine serves as a crucial platform for raising awareness, exchanging knowledge, and advocating for stronger health systems that can withstand the challenges posed by these chronic conditions. Join us as we confront the realities of non-communicable diseases in India and explore pathways towards a healthier and more resilient future for all.



Cardiovascular
Diseases



Chronic Respiratory
Diseases

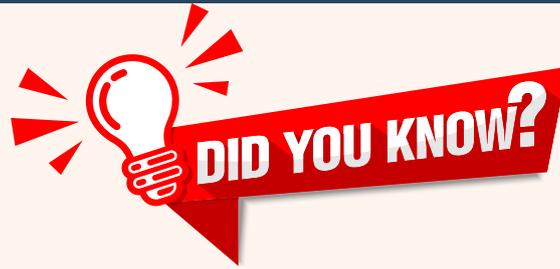


Diabetes



Cancer

Key facts



Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 74% of all deaths globally.

Each year, 17 million people die from a NCD before age 70; 86% of these premature deaths occur in low- and middle-income countries.

Of all NCD deaths, 77% are in low-income and middle-income countries.

Cardiovascular diseases account for most NCD deaths, 17.9 million people annually.

NCD Deaths: Cancers (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (2.0 million including kidney disease deaths caused by diabetes).

These four groups of diseases account for over 80% of all premature NCD deaths.

Tobacco use, physical inactivity, the harmful use of alcohol, unhealthy diets and air pollution all increase the risk of dying from an NCD.

Detection, screening and treatment of NCDs, as well as palliative care, are key components of the response to NCDs.

Overview

- Noncommunicable diseases (NCDs), or chronic diseases, are long-lasting conditions resulting from a mix of genetic, physiological, environmental, and behavioral factors.
- The main types of NCDs include **cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes**.
- NCDs are particularly prevalent in low- and middle-income countries, where over three-quarters of global NCD deaths occur.



People at Risk

- NCDs affect individuals across all age groups and regions, with 17 million of the premature deaths occurring before the age of 70, predominantly in low- and middle-income countries.
- Factors like **unhealthy diets, physical inactivity, tobacco exposure, and harmful alcohol use contribute to metabolic risk factors such as high blood pressure and elevated blood glucose**, which lead to severe health issues like cardiovascular diseases.

Risk Factors

- **Modifiable Behavioural Risk Factors:** These include tobacco use, physical inactivity, unhealthy diet, and harmful alcohol use, all of which significantly elevate the risk of NCDs.
- **Metabolic Risk Factors:** These include high blood pressure, obesity/overweight, high blood glucose, and high blood lipid levels. Elevated blood pressure is the leading metabolic risk factor globally.
- **Environmental Risk Factors:** Air pollution is a major environmental risk factor, contributing to 6.7 million deaths globally, many from NCDs like stroke and heart disease.

Socioeconomic Impact

- NCDs severely impact socioeconomic development, particularly threatening progress toward the 2030 Agenda for Sustainable Development.
- They exacerbate poverty levels, especially in low-income countries, due to high healthcare costs and loss of income, **pushing millions into poverty annually**.

WHO Response

- The World Health Organization (WHO) plays a crucial role in combating NCDs as part of its mandate to achieve the Sustainable Development Goals (SDG) **target 3.4**, which aims **to reduce premature mortality from NCDs by one-third by 2030**.
- The WHO's extended Global action plan and the Implementation Roadmap 2023 to 2030 are pivotal in this effort, focusing on the most impactful global targets for NCD prevention and management.

ICMR-INDIAB study



- ICMR-INDIAB Study: Thorough examination of the **prevalence of Non-Communicable Diseases (NCDs) in India**.
- Cross-sectional Survey: Spanning from **2008 to 2020**, the study encompassed **all 31 states and union territories**, including the National Capital Territory.
- Representative Sample: A comprehensive dataset of **113,043 individuals aged 20 and above**, drawn from both urban and rural areas across the nation.
- **Focus on Metabolic NCDs:** Diabetes, hypertension, and dyslipidaemia were among the primary health concerns studied.
- Sampling Design: Employed a **stratified multistage sampling** method considering geographical, population size, and socioeconomic factors.
- Standardized Diagnosis: Adherence to international and national guidelines ensured consistency in diagnosing conditions.
- Urban vs. Rural Disparity: Notably, **urban areas exhibited higher prevalence rates** of metabolic NCDs compared to rural regions.
- **Regional Variations:** Significant differences observed across states, particularly noticeable in regions with lower human development indices.
- Public Health Concern: The study highlighted an **alarming prevalence of metabolic NCDs**, surpassing previous estimates.
- Stabilizing Trend: While diabetes rates appear to **stabilize in more developed states**, they are on the rise in less developed areas.
- **Urgent Interventions Needed:** Urgent calls for tailored public health policies and interventions to address the burgeoning NCD epidemic.
- **Implications for Health Planning:** Emphasized the necessity for strategic health planning to effectively combat the rising prevalence of NCDs.
- Funding Sources: Supported by the **Indian Council of Medical Research and the Ministry of Health and Family Welfare**, ensuring robust and credible research outcomes.
- **Prevalence Rates:** Diabetes recorded at 11.4%, prediabetes at 15.3%, hypertension at 35.5%, obesity at 28.6%, abdominal obesity at 39.5%, and dyslipidaemia at 81.2%.



Diabetes



Prediabetes



Hypertension



Obesity



**Abdominal
obesity**



Dyslipidemia

Spotlight on India's Health: Unveiling the Urgent Trends in Non-Communicable Diseases



Apollo Hospitals' latest "Health of the Nation 2024" Report

The report released on 3rd April 2024; illuminates critical health trends shaping the landscape of non-communicable diseases (NCDs) in India. The findings are a clarion call to action, highlighting an urgent need for comprehensive health strategies and interventions.

Cancer Concerns:

The report notes a significant rise in cancer cases across India, with an alarming shift towards younger ages at diagnosis. Breast, cervical, and ovarian cancers lead among women, while lung, mouth, and prostate cancers are most prevalent in men. Notably, the median age for cancer diagnoses in India is substantially younger than in global counterparts, underscoring a pressing healthcare challenge.

Screening Shortfalls:

Despite increasing cancer rates, screening remains critically low with breast cancer screening at a mere 1.9% and cervical cancer screening at 0.9%. These figures are starkly lower than those in the USA, UK, and China, indicating a severe gap in early detection and preventative care.

Obesity Epidemic:

Obesity rates have surged from 9% in 2016 to 20% in 2023, with three-quarters of individuals screened showing overweight or obese conditions. This rise in obesity, including high visceral fat levels even in individuals with normal BMI, is highlighted as a primary risk factor for chronic NCDs.

Hypertension and Diabetes:

Hypertension and diabetes are on an upward trajectory. The report finds that two-thirds of Indians are moving towards high blood pressure, with 66% in the pre-hypertensive stage, and a disturbing trend of uncontrolled diabetes and pre-diabetes affecting the population.

Sleep and Mental Health:

The study reveals a high prevalence of obstructive sleep apnea, especially in men, and increasing rates of depression, particularly among young adults aged 18 to 25. Stress levels remain high across the board, significantly exacerbating risks for hypertension and diabetes.

Call to Action:

The "Health of the Nation 2024" report is not just a compilation of statistics but a wakeup call for immediate action. It emphasizes the critical importance of regular health check-ups, which have shown to effectively manage health parameters such as HbA1c, blood pressure, and BMI. Innovative health interventions have shown promise, with notable improvements in managing obesity, hypertension, and diabetes among those actively engaged in health monitoring and management programs.

Efforts by other countries: PEN-PLUS strategy by Africa



- Africa's recent adoption of the PEN-PLUS strategy at the 72nd session of the Regional Committee of the United Nations World Health Organization (WHO) held in Lomé, Togo, marks a significant step toward enhancing the diagnosis, treatment, and care of severe Non-Communicable Diseases (NCDs) at first-level referral health facilities.
- The strategy focuses on bridging the treatment and access gaps for chronic and serious NCDs by standardizing care and ensuring that essential medicines, technologies, and diagnostics are available at district hospitals.

World Health Summit 2023

- Union Minister of State for Health and Family Welfare, delivered a keynote address emphasizing India's proactive strategies against NCDs.
- **"75/25 Initiative"**: India **aims to screen and manage hypertension and diabetes for 75 million individuals by 2025**, representing a significant expansion of NCD care within primary healthcare.
- **Inclusion in Outcome Budget**: Hypertension and diabetes treatment included for the first time in the Outcome Budget document of the Union Budget for 2023-2024, reflecting the government's commitment to improving health indicators.
- **National Programme for Prevention and Control of NCDs (NP-NCD)**: Launched in 2010 to fortify healthcare infrastructure, develop human resources, and enhance early diagnosis and management of NCDs.
- **Integration with Ayushman Bharat and SDGs**: Efforts integrated with Ayushman Bharat initiative and Sustainable Development Goals (SDGs), ensuring comprehensive healthcare coverage and alignment with global health priorities.
- **Population-Based Screening (PBS)**: Ayushman Bharat-Health and Wellness Centres conduct PBS targeting individuals aged 30 and above for NCD risk assessment and screening.
- Digital Health Technologies: **e-Sanjeevani and National NCD portal** facilitate teleconsultations and maintain longitudinal health records, enhancing service delivery and patient compliance.
- Call for Global Collaboration: Minister emphasized the importance of global collaboration under the ethos of **'One Earth, One Health,'** urging nations to share successes and jointly tackle the NCD challenge.
- Shared Global Responsibility: Acknowledgment of the shared responsibility for global health, emphasizing the need for collaborative efforts to address NCDs.
- **India's Role**: Minister highlighted India's commitment as a proactive and engaged player in the global health arena, reaffirming its dedication to combating NCDs.

National Programme for Prevention and Control of Non-Communicable Diseases: NP-NCD



- **NCD Overview:** Diseases like heart conditions, cancers, diabetes, and asthma, primarily chronic, result from a mix of genetic, physiological, environmental, and behavioral factors.
- **Global Impact:** NCDs are a leading cause of morbidity and mortality worldwide, responsible for 71% of all deaths, with their prevalence in Africa ranging from 27% to 88% of all deaths.
- **NCD Burden in India:** Nearly **5.8 million annual deaths in India stem from NCDs**, with **one in four Indians at risk of dying from an NCD before 70**.
- **Rising Burden:** NCDs' contribution to India's disease burden increased from 30% in 1990 to 55% in 2016, with the proportion of deaths attributed to NCDs rising from 37% to 61% during the same period.
- **Major NCDs in India:** Include **cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes**.
- **WHO Global Action Plan:** India aligns its efforts with the WHO plan, setting specific targets **to reduce premature deaths from NCDs by 25% by 2025**.
- **Integration with NP-NCD:** The **National Programme for Prevention and Control of NCDs (NP-NCD) integrates with the National Health Mission (NHM)**, involving frontline workers like ANMs and ASHAs.
- **Involvement of Traditional Practices:** Incorporates **traditional practices through AYUSH** (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy).
- **Utilization of Technology:** Utilizes social media and mobile technology to promote healthy lifestyles and manage NCDs effectively.



Annual meeting of the Friends of the UN Inter-Agency Task Force on the Prevention & Control of NCDs and Mental Health



- Key points from Union Health Minister's address at the **annual meeting of the Friends of the UN Inter-Agency Task Force** on the Prevention and Control of Non-Communicable Diseases (NCDs) and Mental Health, simplified for clarity:
- **National Multi-Sectoral Action Plan:** India has developed a comprehensive national action plan for the prevention and control of common NCDs. This plan serves as a roadmap and provides a range of policy options to guide collaborative efforts across various ministries and departments to meet the NCD targets.
- **Global Health Challenge:** NCDs represent a major global health challenge, accounting for nearly 74% of all deaths globally. In India, the impact is similarly severe with NCDs responsible for 63% of all deaths.
- **Illness to Wellness Concept:** India is adopting an "illness to wellness" philosophy, emphasizing a holistic "Whole of Government and Whole of Society" approach to health, which integrates efforts across all levels of government and society.
- **Commitment to NCD Prevention and Control:** The Indian government is dedicated to the cause of preventing and controlling NCDs and values the global initiatives directed towards this end.
- **Leveraging Digital Health Technologies:** Digital health technologies are being utilized to extend the reach and enhance the efficiency of NCD prevention and management programs.
- **Advancements in Telemedicine and Mobile Health:** Innovations such as telemedicine, mobile health applications, and data analytics are being employed to improve patient engagement, access to care, and the monitoring and evaluation of health services.



Turning the Tide on Non-Communicable Diseases: India's Pioneering Efforts



- India's National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD) spearheads proactive change and healthcare innovation.
- **Noteworthy Achievements under NP-NCD:**
 - Establishment of 724 District NCD Clinics.
 - Setting up 210 Cardiac Care Centers.
 - Establishment of 326 District Day Care Centres.
 - Creation of 6,110 Community Health Centers focused on NCD care.
- **Remarkable Reduction in Tobacco Usage:**
 - Achieved a 17.3% relative decrease from 2009-10 to 2016-17, surpassing the 2020 target.
 - Credited to a robust legislative framework including the Cigarettes and Other Tobacco Products Act (COTPA 2003).
 - Vigorous public health campaigns discourage tobacco consumption.
- **Government Initiatives to Combat NCDs:**
 - Launch of the National Tobacco Control Programme (NTCP).
 - Introduction of the National Tobacco Quitline, providing cessation services.
 - Regular enforcement drives to enforce tobacco control laws.
 - Meticulous efforts by State and District Tobacco Control Cells.
- **Ambitious Targets Set by the National Health Policy:**
 - Aims for a 25% reduction in premature mortality from major NCDs by 2025.
 - Focus on comprehensive screening initiatives for diabetes, hypertension, and certain cancers.
- **Integration with Ayushman Bharat:**
 - Screening initiative for common NCDs integrated with Ayushman Bharat – Health and Wellness Centres.
 - Prioritization of preventive care alongside treatment.
- **Holistic Approach to Wellness:**
 - Comprehensive Primary Health Care under Ayushman Bharat promotes wellness activities.
 - Media campaigns and collaborations with Food Safety and Standards Authority of India (FSSAI) and the Fit India movement.
 - Numerous yoga-related activities by the Ministry of AYUSH underline a holistic approach to wellness.

Take Away Messages



High Prevalence and Regional Variations:

The ICMR-INDIAB study has revealed that the prevalence of metabolic NCDs, especially diabetes and prediabetes, is considerably higher than previously estimated. The regional and state-level analysis shows significant variations in disease prevalence, influenced by factors such as socio-economic development, dietary habits, and urbanization.

Urban vs. Rural Disparities:

The report highlights that metabolic NCDs are more prevalent in urban areas compared to rural ones, a trend that is alarming given the rapid urbanization and lifestyle changes occurring across India. This urban-rural divide underscores the need for tailored public health strategies that address specific regional and environmental contexts.

Implications for Public Health and Policy:

Given the high prevalence rates and the serious implications for India's health system, there is a pressing need for state-specific public health policies and interventions. The study suggests that the NCD epidemic requires urgent action to prevent a significant public health crisis, emphasizing the importance of screening, early detection, and management strategies that are customized for different states and regions.

Innovative Diagnostic Approaches:

The report discusses using HbA1c alongside oral glucose tolerance tests (OGTT) for diabetes diagnosis, but notes HbA1c's reliability issues in India due to conditions like iron-deficiency anemia. It also debates WHO versus ADA criteria for prediabetes, advocating for the most predictive criteria for diabetes progression risk.

Socioeconomic and Demographic Factors:

The study also delves into how socioeconomic and demographic factors influence the prevalence and management of NCDs. States with lower human development indices show different disease patterns compared to more developed states, necessitating targeted interventions that consider these socioeconomic disparities.

Future Trajectory and Projections:

The report predicts a continued rise in the prevalence of metabolic NCDs based on current trends. It calls for comprehensive strategies that not only focus on treatment but also on preventive measures such as lifestyle modifications, public awareness campaigns, and strengthening healthcare infrastructure, especially in rural areas.

Role of Public and Private Sectors:

The report underscores collaboration between public and private sectors to improve NCD management, emphasizing integration into primary healthcare and utilizing India's health and wellness centers for wider access to preventive and curative services.

Bibliography



1. GBD 2019 Diseases and Injuries Collaborators (2020). Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet* (London, England), 396(10258), 1204–1222. [https://doi.org/10.1016/S0140-6736\(20\)30925-9](https://doi.org/10.1016/S0140-6736(20)30925-9)
2. Anjana RM, Pradeepa R, Deepa M, et al. The Indian Council of Medical Research–India Diabetes (ICMR-INDIAB) Study: Methodological Details. *Journal of Diabetes Science and Technology*. 2011;5(4):906–914. doi:10.1177/193229681100500413
3. National Health Portal of India. About NCDs. National Health Portal. [accessed on 2024 May 2]. Available from: <https://ncd.nhp.gov.in/ncdlandingassets/aboutus.html>
4. Ministry of Health and Family Welfare (India). National Family Health Survey (NFHS-5), 2019–21. New Delhi: Ministry of Health and Family Welfare; 2021.
5. Factsheet - National Cancer Registry Programme (ICMR-NCDIR), Bengaluru, India https://ncdirindia.org/All_Reports/Report_2020/Factsheet/Fact_Sheet_2020.pdf.
6. International Agency for Research on Cancer, World Health Organization. Global Cancer Observatory. [accessed 2024 May 2]. Available from: <http://gco.iarc.fr/>
7. Centers for Disease Control and Prevention. Public Health, Prevention, and Health Promotion. [accessed 2024 May 2]. Available from: <https://www.cdc.gov/chronicdisease/index.htm>
8. National Center for Chronic Disease Prevention and Health Promotion. Power of Prevention: Health and Economic Benefits of Breast Cancer Interventions. [accessed 2024 May 1]



**VOTING IS NOT ONLY OUR RIGHT,
IT IS OUR POWER!**

A Message from the Executive Director



Prof. (Col.) Dr. C D S Katoch
Executive Director,
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Dear Team and Readers,

Your dedication fuels our mission to bridge healthcare gaps and promote wellness. Our e-magazine serves as a comprehensive resource, delving into various health topics in detail. Together, we're reshaping the future of healthcare in India, benefiting faculty, students, and communities alike. Thank you for your invaluable contributions to our collective journey towards excellence.

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