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Report on Sites of Cancer Associated with Tobacco use in India -

Findings from the National Cancer Registry Programme

EXECUTIVE SUMMARY

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REPORT ON SITES OF CANCER ASSOCIATED WITH TOBACCO USE IN INDIA

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Executive Summary

In India, a total of 1.39 million new cancer cases were estimated to occur in 2020. There is ample scientific evidence which establishes the association of tobacco use with many cancers. India is among the countries with a high burden of tobacco use and tobacco-related health problems, especially cancer. Tobacco in all its forms contain a large proportion of carcinogenic nitrosamines, volatile aldehydes, and polynuclear agents. Hence tobacco use forms the foremost preventable cause of cancer incidence and mortality.

The National Cancer Registry Programme (NCRP) of the Indian Council of Medical Research (ICMR) has played a vital role in cancer surveillance since 1981 by collecting and compiling data on cancer epidemiology and clinical profile of cancer cases in the country. The NCRP has been using the International Agency for Research on Cancer (IARC) classification, World Health Organization (WHO) monographs for enlisting the anatomical sites of cancer associated with tobacco use. In this report we continue the earlier listing of tobacco related cancer sites by the IARC to make provision for comparisons with the data described in earlier reports of the NCRP. The sites include- lip (C00), tongue (C01–C02), mouth (C03–C06), oropharynx (C10), hypopharynx (C12–C13), pharynx unspecified(C14), oesophagus (C15), larynx (C32), lung (C33–C34), and urinary bladder (C67). Analysis has been done on the data compiled from 28 Population Based Cancer Registries (PBCRs) and 58 Hospital Based Cancer Registries (HBCRs) under the NCRP for the time 2012-2016. The report includes findings from a pooled analysis of all cancer sites associated with tobacco use and a specific site wise analysis.

Salient findings:

(a) Pooled analysis-All sites of cancer associated with tobacco use

- The highest Age Adjusted Incidence Rate (AAR) of cancer in sites associated with tobacco use is 161.3 per 100,000- males and 58.1 per 100,000- females are reported in the East Khasi Hills district of Meghalaya.
- The probability of developing any cancer type (cumulative risk) in the age group 0 - 74 years is highest in the East Khasi Hills district (1 in 5 for males and 1 in 14 for females).
- The relative proportion of cancer in site associated with tobacco use, to all cancer sites is highest in the East Khasi Hills district of Meghalaya (70.4% in males and 46.5% in females).
- In all the regions, the relative proportion of sites of cancer associated with tobacco use to all caner sites was higher in males than that of females.
- Lung cancer is the most frequently observed site of cancer associated with tobacco use among males, followed by mouth, tongue and oesophagus in both genders.

- The age-specific incidence rate (ASpR) of cancer in all sites of cancer associated with tobacco use is the highest in the 70 to 74 years age group for both genders in most registries.
- The majority of the cancers in sites associated with tobacco use are reported to have presented in the locoregional stage in both genders.
- Trend analysis of AAR over time indicates a significant increase in Aurangabad, Mizoram state, Kamrup urban, Delhi, Kollam district and Chennai among males and in Bhopal among females. On the other hand, AAR has declined significantly over time in Sikkim state, Dibrugarh district, Mumbai and Barshi rural among males and in Sikkim state, Dibrugarh district, Mumbai, Bangalore and Chennai among females.
- The projected number of incidence cases for cancer in all sites associated with tobacco use by the year 2025 is 427273, of which the number of lung cancer cases would be the highest (111328) and constitute 27.2% of all cancers.

(b) Specific site-wise analysis

- *Lip cancer:* The AAR for males is highest in Kamrup urban (1.2 per 100,000) and females in East Khasi Hills district (1.5 per 100,000)
- *Tongue cancer:* The AAR for males is the highest in East Khasi Hills district (12.8 per 100,000) and females in Bhopal (4.1 per 100,000)
- *Mouth cancer:* The AAR for males is the highest in Ahmedabad urban (19.5 per 100,000) and females in East Khasi Hills district (9.5 per 100,000)
- *Cancer of oropharynx:* The AAR for both genders is highest in Kamrup urban (4.4 per 100,000 in males and 1.7 per 100,000 in females)
- *Cancer of hypopharynx:* The AAR for males is the highest in East Khasi Hills district (21.8 per 100,000) and females in Kamrup urban (3.7 per 100,000)
- *Cancer of the pharynx:* The AAR for males is the highest in East Khasi Hills district (4.4 per 100,000) and females in Sikkim (1.2 per 100,000)
- *Cancer of the oesophagus:* The AAR is highest in East Khasi Hills district (75.4 per 100,000 in males and 33.6 per 100,000 in females)
- *Cancer of the larynx:* The AAR is highest in East Khasi Hills district (13.5 per 100,000 in males and 2.0 per 100,000 in females)
- *Lung cancer:* The AAR for both genders is highest in Aizawl district (38.8 per 100,000 in males and 37.9 per 100,000 in females)
- *Urinary bladder cancer:* The AAR for both genders is the highest in Delhi (6.8 per 100,000 in males and 1.5 per 100,000 in females)

The Government and relevant stakeholders have taken up an extensive range of tobacco and cancer control measures through programme and policy initiatives. Yet, tobacco control and its adverse consequences, one of which is cancer, continue to pose a public health challenge. The report findings should enable programme officials, policymakers, health care providers and community leaders to strengthen the existing measures and develop innovative and evidence based measures to control tobacco use in all its forms.

The Way Forward

India is among the countries with a high burden of tobacco use and tobacco-related health problems, especially cancer. The government and relevant stakeholders have taken up an extensive range of measures for tobacco control. However, despite such efforts, a considerable level of tobacco consumption appears to be continuing. India is the first country to have developed national targets and indicators to reduce the number of global premature deaths from NCDs by 25% by 2025. [6] One of the targets is to achieve a 30% relative reduction in the prevalence of current tobacco use. The data in the present report reflects upon the rising incidence and growing concern of cancers in the sites associated with tobacco use in the country. The report findings should enable programme officials, policymakers, health care providers and community leaders to strengthen the existing measures and develop innovative and evidence measures to control tobacco use in all its forms.

Promotion of Information, Education and Communication (IEC) for prevention and quitting use

The National Tobacco Control Programme has IEC as one of its major components. Social media, the internet, and other mass media channels and communication must actively disseminate anti-tobacco messages. Specific groups such as students, employees in the organized and unorganized sectors must be sensitized about the harmful effects of tobacco and the need to keep the workplace tobacco-free. School-based education on tobacco hazards is of paramount importance in sensitizing children and adolescents at an early age. Traditional healthcare providers could be involved in imparting community-based tobacco-related education as they may find wider acceptability.

Strengthening of tobacco cessation activities

At present, most tobacco cessation services are provided by trained health professionals at the existing health services. Training non-health professionals in tobacco cessation activities would add value to the current mode of implementation. In addition, tobacco cessation activities could be extended beyond the boundaries of health facilities to educational institutions, industries and community-based organizations. Community-based tobacco cessation services may help female tobacco users, who often hesitate to avail of facility-based tobacco cessation services.

Integration with other national health programmes

Tobacco control activities could be integrated with developmental programmes for rural upliftment, livelihood, woman, child and tribal welfare. Also, tobacco cessation could be

provided at NCD clinics operated under the NPCDCS and Adolescent Friendly Health Services (AFHS) under the Reproductive and Child Health programme.

Strengthening the implementation of tobacco control laws

The 2020 amendment in COTPA is proposed to address certain lacunae in the existing law and strengthen its implementation. The amendment bill includes the following revisions (i) removal of designated smoking places in hotels and restaurants (ii) Prohibition of tobacco advertisements on social media and the internet, (iii) Prohibition of production and distribution of illicit tobacco products and (iv) increasing the minimum age of sale of tobacco products to 21 years. [36]

Prioritize for screening for cancers in sites associated with tobacco use

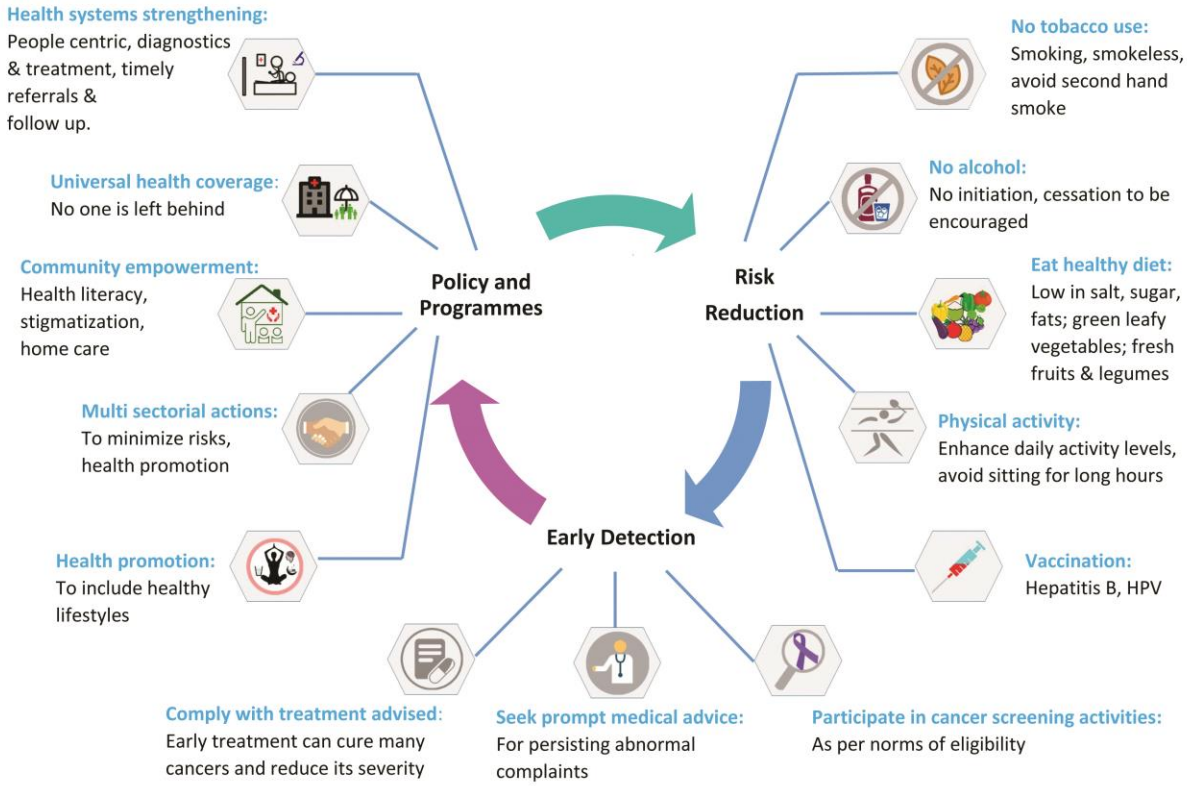
Tobacco users constitute a high-risk group for cancer, and hence cancer screening should be emphasized in this population group as the risk perception of getting cancer could be less. Cancer screening could be combined with IEC and behavioural change interventions and tobacco cessation activities to increase uptake and acceptance in this high-risk group. Dentists and clinicians could be sensitized to undertake oral cancer screening in tobacco users during routine visits. Screening for lung cancer among current and past smokers could be beneficial since various trials have shown that Low-dose computed tomography (LDCT) could reduce mortality in lung cancer patients in developed countries.[37] However, India needs a cost-effective lung cancer screening programme that could be useful in low resource settings.

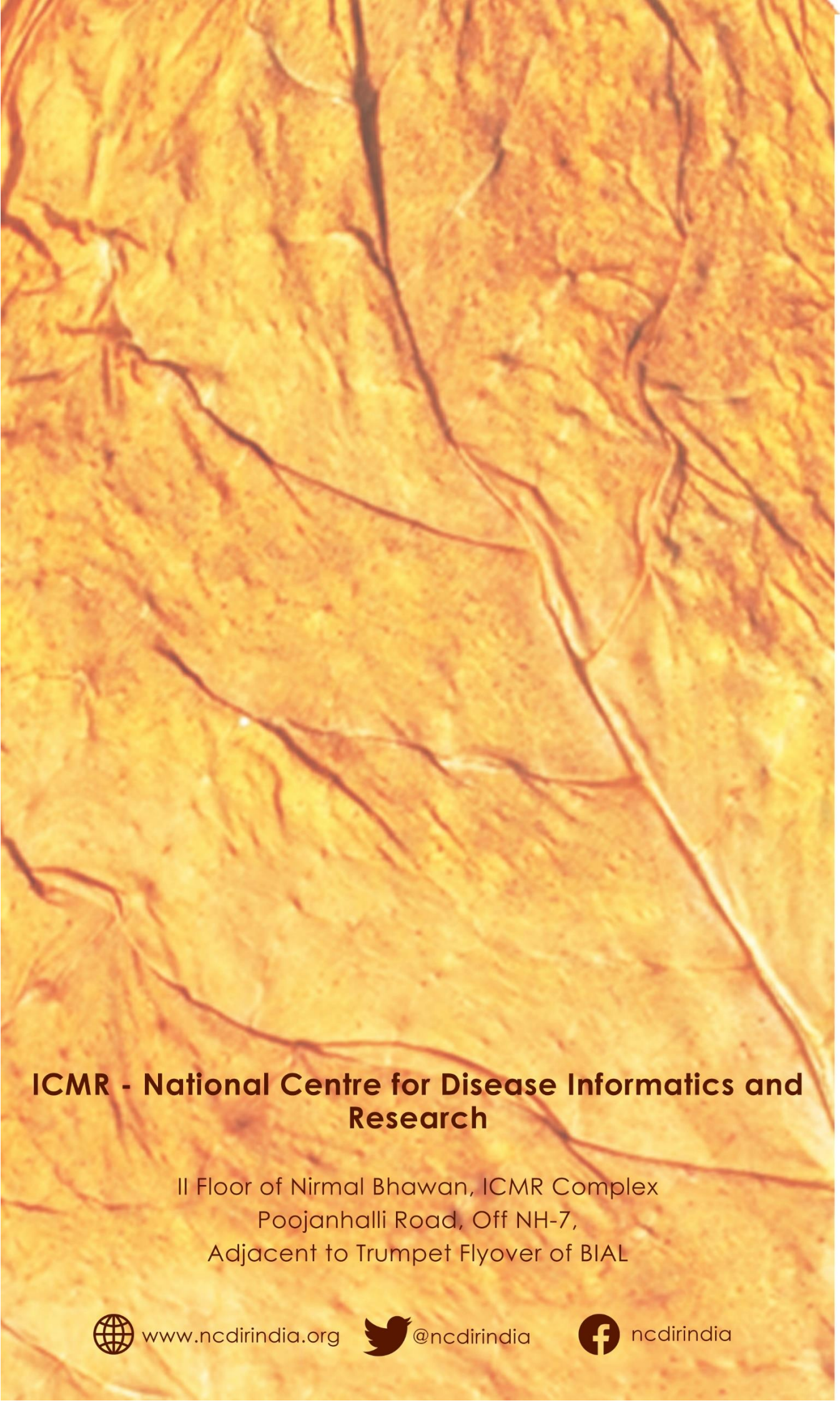
Promoting Research

There is a need for broader evidence on effective strategies for imparting tobacco-related health education, communication and behavioural change, which calls for experimental research, including cluster randomized controlled trials and field trials. In addition, behavioural change and IEC packages should be region-specific and culturally acceptable to ensure optimal outcomes. Also, formative research is needed to identify the socio-economic and socio-cultural barriers in tobacco cessation and uptake of screening services. Health technology research could help to identify and develop cost-effective screening interventions for lung cancer. Furthermore, research in molecular biomarkers is required to validate their importance in lung cancer screening. Finally, policy analysis, monitoring, and evaluation of policy and programme components will help assess interventions' impact.

The prevention and control of cancers in the sites associated with tobacco use is a concerted effort by a wide range of stakeholders and multidisciplinary health care professionals. The need of the hour is to evaluate the impact of existing control measures, strengthen and scale up effective strategies, identify, design and develop evidence-based interventions to address the challenge imposed by cancers arising from tobacco use in India.

Ways for Cancer Prevention and Control





ICMR - National Centre for Disease Informatics and Research

II Floor of Nirmal Bhawan, ICMR Complex
Poojanhalli Road, Off NH-7,
Adjacent to Trumpet Flyover of BIAL

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