



ORIGINAL RESEARCH PAPER

Oncology

CANCER CONTROL IN INDIA:CURRENT STATUS, AND CONTROL IN INDIA LIMITING FACTORS.

KEY WORDS: cancer control program in India, Socioeconomic implications

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ABSTRACT

Cancer control aims to reduce the burden of cancer in given setting by resource appropriate investments and interventions. Burden of cancer refers to the number of incident cases, cancer deaths, suffering due cancer, cancer health care expenditure to the individual and governments, lost productivity, socioeconomic implications to the family and society at large, psychosocial burden in terms of stigma and discrimination and poor quality of life. It is interesting to examine how a large country like India with a population of 1.35 billion people and highly varying socioeconomic and health service developments between regions and states tackles cancer control, what has been the impact of already implemented interventions, what challenges lie ahead and what pragmatic solutions are in sight.

Cancer is a major health problem in India, with an estimated 11.6 lakh new cases, 7.85 lakh deaths and 22.6 lakh prevalent cases per annum around 2018 (Box 1). More than 75% of new cases in India are diagnosed in advanced clinical stages, and approximately more than half of the patients dying within 2 years and more than two thirds of patients dying as a result of their disease within 5 years from diagnosis as indicated by a high mortality –to-incidence (MI) ratio around 0.68 in India as opposed to around 0.35 in developed countries. The major contributing factors for this discrepancy are lock of public and professional awareness, inequitable availability and access to cancer health care services and lack of adequate health care financing in India. Multidisciplinary approaches to cancer prevention, early detection, treatment and follow-up care, adequate infrastructure and human resources and health care financing mechanisms that avoid catastrophic out of pocket payments are critical components of efficient and effective cancer control.

India has formulated a national cancer control plan as early as 1975 which has been revised a number of times since then. Currently India has incorporated cancer control initiatives, especially primary prevention initiatives targeting on tobacco control, alcohol control, prevention of overweight and obesity, promotion of physical activity, healthy diets and healthy life styles, as part of the integrated national non-communicable disease control plan (NCPDCS). Taking into account the heterogeneous nature of cancer, as it is not one disease but many different diseases requiring varying and differing control measures, particularly in terms of diagnosis, treatment and follow-up care, there is a important need for developing and implementing focused, time bound cancer control plans supported by adequate budgetary outlays in different states in the country. As of now, the formulation, the scope, integral components, budget allocation and the extent of real implementation of these plans in different states of India is highly variable and far from desired levels. This is not surprising given the varying levels of socioeconomic development and political commitment to improving health care in different regions and states of the country, In this context, it is useful to examine the organization of health services in India to examine how cancer control has been integrated and how its integration can be further improved so that more cancers effectively prevented, diagnosed early, treated effectively and cured and how health care expenditure can be financed and cancer health care made affordable for all segments of the society. A major advancement in cancer control in India is the valid estimate of the incident cancer cases, documentation of cancer incidence rates and patterns in various regions of the country, particularly in the south and North East Regions of the country by the 26 population-based cancer registries of the National Cancer Registry Programme (NCRP) of India and few cancer registries such

as Coimbatore and Dindigul District cancer registries outside the NCRP network for the last several years. Cancer registration in India has led to valid estimates of cancer incidence and cancer patterns across the country, providing important leads to cancer control .Control measures focusing on tobacco related (head and neck, lung), chronic infection related (cervix, stomach, liver), physical inactivity/overweight/obesity related cancers (breast, colorectum), early detection and adequate treatment of curable cancers (breast, cervix, colorectal, oral cancer) can lead to substantial reduction in cancer burden in India.

Cancer in India as gleaned from estimates based on findings of Indian population based cancer registries

- 1.16 million new cancer cases; 784 800 cancer deaths and 2.26 million prevalent cases in 1.35 billion population in India around 2018.
- Breast (162,500 cases), oral (120,000 cases), cervix (97,000 cases), lung (68,000 cases), stomach (57,000 cases) and colon (57,000) are common cancers which collectively account for 49% of all cases.
- Of the 570,000 new cases in men, oral (92,000), lung (49,000), stomach (39,000), colon (37,000) and oesophagus (34,000) account for 45% of cases.
- Of the 587,000 new cases in women, breast (162,500), cervix (97,000), ovary (36,000), oral (28,000) and colon (20,000) account for 60% of cases.
- 1 out of 10 Indian will develop cancer and 1 of 15 will die of cancer in their life time.

Although India is a signatory to the Framework Convention on Tobacco Control (FCTC) since 2004 and is increasingly implementing the FCTC regulations, it could do much better in regulating and curtailing smokeless tobacco use and the increasing consumption of areca nut containing chewing products particularly in the form of Pan Masala which is now leading to the increasing incidence of oral cancer among young people in the country. The incidence of oral cancer in those aged 30-50 years has increased by 2-3 fold in the last few years. The Indian pan masala market has reached values worth around INR 35,521 Crores (5 Bn USD) in 2017 and projected to reach 60,198 Crores (8.6 Bn USD) in 2023. While Hepatitis B vaccination is implemented as part of the National Immunization program, human papillomavirus (HPV) vaccination is currently implemented by the state of Punjab, New Delhi Capital Territory and Sikkim. There is still substantial misinformation on the safety and value of HPV vaccination in cervical cancer prevention in India despite the evidence to the contrary. The infrastructural investments that will promote physical activity such as availability of safe walk ways, recreational spaces, and safe roads are substantially deficient and inadequate; air pollution is a major concern particularly in North India and

planned investments in public transportation and regulation of carbon emissions are urgently needed.

It is useful to examine the organization of Indian health care services in order to consider how cancer early detection, treatment and follow-up care services are embedded in the public health system, what lacunae exist and how these can be addressed. The primary care services are provided by health centres (population norm: for 3000-5000 population) in villages and primary health centres (PHCs, for 20,000-30,000 population) and community health centres (CHCs, for 80,000-150,000 population in rural areas (Box 2). The health centres are manned by a health worker; PHCs by one or two doctors, three to four nursing staff, a laboratory technician and 4-8 beds and mainly provide outpatient services and limited inpatient care. As of now, Tamil Nadu has integrated early detection services for breast, cervix and oral cancer in the PHCs by augmenting human resources and facilities and has developed referral pathways for referral of suspected cases for diagnosis and treatment. States like Kerala and Karnataka invested in reorienting PHC doctors in the early detection and prevention of cancers. While the Central Government has announced the integration of breast, cervix and oral cancer early detection services in 210 districts, this is yet to take off for want of needed infrastructure and human resources investments in the health systems.

Public health care infrastructure in India with relevance to cancer control

- 156231 Health centres
- 25650 Primary health centres (PHC)
- 15,700 PHCs function with one doctor.
- 1974 PHCs do not have a doctor.
- 5624 Community Health Centres.
- 763 District hospitals
- 479 Medical College hospitals (227 in the public sector)
- 57% of 719 districts in India lack a medical college hospital
- 220 focused cancer treatment facilities in district hospital/ medical college hospitals.
- 27 Regional Cancer Centres.
- 8 Apex Cancer Centres.

District Hospitals located at the administrative headquarters of district are usually a 100 to 200 hospitals with 20 to 40 medical officers, 40 to 80 nursing staff, and 5 to 20 technicians to perform laboratory and radiologic investigations and constitute the backbone of secondary care. They provide varying levels of multidisciplinary outpatient and inpatient services in general medicine, general surgery, obstetrics and gynaecology, paediatrics, emergency care, critical care, anaesthesia, ophthalmology, otolaryngology, dermatology, orthopaedics, radio diagnosis, dental care, and public health management. The availability of these services enable varying levels of basic cancer surgery such as wide local excisions, excision biopsies, simple mastectomy etc and extension chemotherapy for common cancers at this level.

CANCER CARE IN INDIA

- There has always been a great divide between the public healthcare facilities available to people in the cities and in the villages of the region.
- Cancer screening is abysmally low and >70% present in advanced stages with poor survival prospects.
- Cancer care in highly fragmented and inadequate in many states of India
- Around 250 focused cancer treatment facilities including apex cancer centres, regional cancer centres and oncology units in medical college hospitals in public services exist in India.
- More developed cancer treatment facilities are mostly found in the states of Delhi, Kerala, Karnataka, Maharashtra, Pondicherry, Punjab and Tamil Nadu in the South and Western India.
- Committed cancer treatment facilities and access to cancer care are severely lacking in states like Bihar, Orissa, Chhattisgarh, Madhya Pradesh, Jharkhand, Rajasthan, Uttarakand, Uttar Pradesh, and West Bengal Among others.
- The private sector has already stepped up investment in cancer treatment, galvanized by the demand-public sector supply mismatch and can be accessed by less than 5% of India

population.

- Unacceptable waiting times and dropout rates for treatment (exceeds 30% in India) and waiting times for initiating treatments may take several weeks/months in the public sector in several states
- Cancer health care financing is still evolving and catastrophic out of pocket payment is the norm for most people in most states.
- Only 15% of the Indian population is covered by either private insurance of state employee insurance schemes and another 12% are partially covered for inpatient care by state initiated financial support schemes for below poverty line populace by certain states such as the Southern states or Meghalaya.
- It is hoped new schemes such as **Ayushman Bharat** will bridge the glaring inadequacies health care financing for the common people in India.

Tertiary level services are provided by Medical College hospitals and standalone super specialty hospitals. These are multispecialty centres with varying human resources, infrastructure, and undergraduate and postgraduate training facilities for disciplines such as internal medicine, general surgery, obstetrics and gynaecology, ophthalmology, and so on, but most of them lack formal subspecialty departments such as medical, radiation and surgical oncology, cardiology, neurology, and others.

The highest level of cancer services in India in the public sector is provided by 27 Regional Cancer Centres (RCC) and 8 Apex Cancer Center. The RCCs are standalone

Cancer centres with medical, paediatric, radiation and surgical oncology service supported by varying levels of pathology, haematology, endoscopic and biochemistry/ tumour marker services. Apex cancer centres are highly developed state of art cancer centres with high-level expertise, infrastructure, and training mandated for all specialties and sub-specialties of oncology and related disciplines and have clinical, epidemiological and basic cancer research capabilities.

The status of the current fragmented cancer health care as summarized in Box 3 indicated the enormous scope in India for increasing investments in cancer public health care infrastructure in a time bound manner in different states of India, for introducing innovative and participatory health care financing schemes to avoid catastrophic out of pocket payments for cancer health care in particular and health care in general and for simultaneously improving public and professional awareness on the value of primary prevention measures in reducing cancer risk and early detection in improving prognosis and quality of post treatment life. There are currently 479 medical colleges in India, 227 in the government sector and 252 in the private sector; the states of Karnataka, Maharashtra, Tamil Nadu and Uttar Pradesh each have more than 45 medical colleges, However, 57% of districts in India are without a medical college.

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