

Submission Topic: Tailoring therapy to the unique way in which Indians experience cancer and respond to anti-cancer drugs

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):

Clinicians consider patient-specific, cancer-specific, socioeconomic, geographical, cultural, and environmental factors when recommending anti-cancer treatment. India faces challenges in implementing global cancer treatment guidelines due to resource limitations, cost issues, cultural relevance, and regulatory issues. Innovative strategies for customizing anti-cancer treatment in India include precision medicine, hub-and-spoke models, affordable innovations, telemedicine, and community engagement. These strategies aim to identify mutations, customize therapies, enhance accessibility, develop cost-effective options, and raise awareness about cancer prevention and early detection among communities.

Describe your solution / proposal: Provide a detailed account of your solution/ proposal to this challenge. You could type your solution/ proposal here. (Disclaimer: Solution/proposal should not exceed more than 300 words.):

Factors Considered by Clinicians When Recommending Anti-Cancer Treatment:

1. Patient-Specific Factors: These include age, gender, existing health conditions, overall health status, and genetic factors.
2. Cancer-Specific Factors: This encompasses the type, stage, grade, and molecular characteristics of the cancer.
3. Socioeconomic Factors: Considerations include the patient's ability to pay, access to healthcare services, and insurance coverage.
4. Geographical Factors: The presence of specialized oncology centres, particularly in rural versus urban areas, is also a consideration.
5. Cultural and Lifestyle Factors: Factors such as diet, tobacco use, and alcohol consumption patterns are evaluated.

Differences at the Population Level:

1. Genetic Variations: Variations in drug metabolism and tumour biology, including differences in EGFR mutations.
2. Epidemiological Trends: A higher incidence of tobacco-related and oral cancers in India.
3. Socioeconomic Disparities: Inequities in healthcare access and affordability.
4. Environmental Factors: Exposure to carcinogens and dietary influences.

India encounters specific challenges in implementing global cancer treatment guidelines:

1. Resource Limitations: Insufficient infrastructure and trained professionals in rural regions.
2. Cost Issues: The high expense of advanced treatments and diagnostic procedures.
3. Cultural Relevance: Guidelines may not consider local dietary habits and lifestyle factors.
4. Regulatory Challenges: Delays in the approval and availability of new medications.

Here are some innovative strategies for Customizing Anti-Cancer Treatment in India:

1. Precision Medicine: Utilize genetic testing to identify mutations and customize targeted therapies.
2. Hub-and-Spoke Model: Create regional cancer centers linked to smaller clinics to enhance accessibility.
3. Affordable Innovations: Develop cost-effective treatment options, such as nanotechnology-based drug delivery systems.

4. Telemedicine: Implement teleconsultations to connect urban and rural areas and provide expert advice.
5. Community Engagement: Raise awareness about cancer prevention and early detection among communities.