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

Full Name:
Foram Joshi

Name of the Institution:
Kidwai Memorial Institute of Oncology, Bengaluru

State:
Karnataka

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Presently in 2026 with newer innovations, facilities and dynamicity in cancer care there is basket of treatment options for cancer patients. However, there are fallacies at times in terms of clinical trial options and restricted access to innovation of west in India. The irregularities and inconsistency is present at different level with financial toxicity at peak of iceberg. Hence it is difficult to have international guidelines incorporation in Indian patients and urgent need for stringent improvised Indian guidelines with regular revision catering these barriers and tailoring to pharmacogenomics of Indian patients.

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.):
There is great disparity in Cancer treatment in Indian population secondary to clear division of poverty line which highly influence the heterogenicity of cancer treatment in Indian population negating adoption of standard of care to all. We must realize that it is impossible to have a uniformity in that, hence tailoring of cancer treatment must be priority. Secondary to lack of screening strategies, educational barrier, lack of awareness, and off-course ignorance until intolerability maximizes advanced stage detection in Indian cohort. Hence bridging this gap must be our utmost priority and need towards quality cancer care.
Maximized Clinical trial enrolment and availability of biosimilars can highly influence treatment care and reduce financial toxicity considerably. In today era of digitalization, social media, AI and unqualified influencers on social media there is easy access to false information and myths of cancer treatment, hence it is our responsibility as oncologist to channelize these mediums to effective education strengthen and awareness promotion and specifically in this era where even the poor have smart phones.
Access of smart phone devices even in poorest must be boon in current era, and hence development of quality personalized APPs which bring patient and caregiver education, psychological supports, advice medication instructions and possible side effects, help track dietary intake, encourage physical exercise plan, and also provide communication with other cancer patients must be prioritized . Availability of such application builds mutual trust and strengthens bond between the doctor and patient and reduce doctor shopping as well.
Data entry and analysis is something which Indian cancer care lacks and hence there must be mandatory data entry and electronic medical records in every cancer institute which can facilitate cancer treatment interpretation in Indian cohorts and help improvise our guidelines tailoring Indian patients. There must be structured adverse event reporting strategy to improvise cancer care. At times these do seam tedious, but in current era of digitalization and AI manual labor can be minimized and judicious use of newer technology is crucial.

Mere existence of financial aids, government schemes, NGO, cancer foundation, insurance is of no use unless the population is aware and educated about is availability. Hence navigation of awareness must be utmost priority with significant ease of digitalization and social media. We must encourage formulation of cancer survivor platforms, where interaction with other survivors can formulate motivation and adherence to treatment improving compliance which is biggest caveat in cancer care in India.

Well-being of cancer patient is not just restricted towards financial help, caregiver education, nutrition, compliance motivation, exercise and endurance strengthening it must be beyond these aspects. We do find patients in our patients where patients have myths about cancer and especially it being a communicable disease. Hence, we must encourage to breaking this stereotype with proper education. Sexual health, infertility issues of cancer patients must also be addressed with motive of providing holistic care.

Hence idea of cancer care to all must not only be our priority but it must comprise holistic pattern of screening high risk individuals and implementation of wholesome quality cancer care.

Full Name:
Sakthi Vignesh D

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State:
Tamil Nadu

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

Although several guidelines exist to guide the standard of care treatment for the specified stage of cancer, many constraints exist in the government vs corporate sector, urban vs rural side, socio-economic factors which make the implementation of SOC difficult to the concerned patient.

Most of the clinical trial data are based on western population, so we must be cautious while extrapolating the data to our Indian population, note the adverse events and safety signals cautiously for our Indian patients.

Coming to the urban vs rural divide, several differences exist—stage at presentation, awareness of cancer and its advanced treatment, affordability status, caretaker status, accessibility issues in rural areas (travelling long distances >100km to get the approved SOC) and inability to get immediate access to health care in case of supportive care emergencies.

Main issue in implementing global guidelines is lack of access to global clinical trials in India, mainly lack to access to trials in the rural side. Recently approved drugs under FDA/ESMO are not immediately approved by DCGI. Even after approval, drugs costs are based on per-capita income of the American patients, not based on Indian patients.

Many dropouts in treatment are noted, due to exhaustion of finance midway after selling their houses and jewels.

Most of the time, ancillary tests needed to start a treatment are itself, too costly to perform.

Much bigger hurdle is lack of recent guideline updates by some of current treating oncologist.

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.):

Policy makers & stakeholders:

1. Should make every effort to bring recent phase 3 trials of newer drugs and biosimilars in India —involving all major centres; both Urban and rural.
2. DCGI should consider fast- track approvals of newer drugs, parallel to FDA/ESMO approvals —so that provisions can be made to include in insurance schemes and get cashless affordable treatment.
3. Remove import tax for drugs imported for cancer treatment purpose.
4. Patented drugs should be priced based on per-capita income in India and measures should be taken to prevent smuggling of drugs to higher income countries.
5. Decentralization of healthcare to ensure equal health care infrastructure in rural areas comparable to urban areas.
6. Creating a comprehensive health hub every 50-100 km radius—making quality treatment easily accessible.
7. Premier advanced institutes—can take up trials involving low dose immunotherapy and monoclonal antibodies, drugs approved for non-cancer conditions but having potential anti-cancer properties—proving cost effective treatment options helpful for our country.
8. Made in India—indigenous testing kits made in India—thereby reducing the cost drastically and helping cancer patients in India.
9. Conducting regular CME and conference on recent updates—propagate knowledge sharing and senior physicians share their experiences with budding oncologist for smooth transfer of knowledge, so patients gets benefitted in all ways possible.

Full Name:
Habeeb K A

Name of the Institution:
VPS Lakeshore Hospital, Kochi

State:
Kerala

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

- Integrate patient-specific clinical and socio-economic factors into cancer treatment planning in India
- Adapt global oncology guidelines to local Indian realities for safe and feasible care delivery
- Ensure balanced decision-making between disease biology, patient fitness, and treatment intent
- Improve treatment safety and tolerance by accounting for comorbidities, nutrition, infections, and drug interactions
- Enhance accessibility and affordability of cancer care through rational use of diagnostics, financial counseling, and resource-adapted pathways.

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.):

Cancer care in India exists at the intersection of advanced scientific progress and complex real-world limitations. While Western oncology guidelines provide a strong evidence base, they often cannot be applied directly because every patient presents with unique clinical, biological, and social circumstances. Therefore, effective cancer care requires moving beyond a disease-centered approach to a patient-centered model that considers the whole individual.

The first step is a comprehensive assessment of both disease and patient factors. Tumour-related features such as stage, histological type, molecular biology, and treatment intent guide therapeutic decisions. However, patient-related variables are equally critical in determining outcomes. Age, performance status, comorbidities such as diabetes and hypertension, and infections like tuberculosis or hepatitis significantly influence treatment tolerance. Baseline issues such as anaemia, malnutrition, sarcopenia, and organ dysfunction further increase the risk of toxicity. In addition, polypharmacy, including alternative and over-the-counter medications, may lead to clinically significant drug interactions. Practical constraints—distance from treatment centers, caregiver support, and financial affordability—often determine whether a planned therapy can be successfully completed in real life.

Indian patients also differ from Western clinical trial populations in terms of genetics, nutritional status, infection prevalence, and body composition. These differences can alter drug pharmacokinetics and toxicity profiles. For example, immunosuppressive therapies may reactivate latent tuberculosis or hepatitis if appropriate screening is not performed. Therefore, standard dosing and treatment schedules often require careful individualization and close monitoring.

Despite strong global guidelines, their applicability is limited in India due to disparities in healthcare infrastructure, high treatment costs, low insurance coverage, delayed diagnosis, and restricted access to advanced diagnostics such as PET-CT and molecular testing. Supportive care services are also unevenly distributed, making prolonged or intensive treatment regimens difficult to sustain.

To bridge these gaps, a pragmatic and adaptive approach is essential. Basic investigations should be universally accessible, while advanced diagnostics can be centralized. Financial counselling should be integrated into routine care before initiating expensive therapies. Infection screening, nutritional optimization, and dose adjustments improve safety and feasibility. Telemedicine and shared-care models can enhance continuity of care.

Ultimately, the most appropriate cancer treatment in India is not necessarily the most advanced or expensive, but the one that is safe, feasible, and deliverable—ensuring both survival and dignity for the patient.

Full Name:
Reshma Abraham

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Manipal hospital, Bangalore

State:
Karnataka

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

How can anti-cancer therapy be effectively tailored to the unique clinical, genetic, socio-economic, environmental, and treatment-response patterns of the Indian population and what are the factors clinicians consider while selecting therapy and challenges faced in implementing global treatment guidelines in India, and potential strategies for developing more personalized oncology care?

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.):

Anthropometry —Lower BSA and lean body mass in contrast to the Western trial populations; higher baseline anemia and sarcopenia at any BMI; significantly lower protein intake; physical activity never culturally inculcated.

Suggestion- Mandatory dietitian referral with high-protein vegetarian-adapted plans, manipulated on locally affordable sources. Professionally supervised prehabilitation with walking and resistance exercise in the inter-chemo window, stratified to symptom and toxicity level in the post chemo phase. NCG-reframed dosing guidelines derived from large apex-centre Indian cohorts for BSA-capped or weight-based dosages for myelosuppressive agents in cachectic Indian patients. Routine pre-treatment nutritional and geriatric assessment by a dedicated assessor. AI-assisted tools to streamline this exhaustive process but an attempt could be made.

Cost barriers- The standalone factor many a times. Affordability covers not just the drug but also for supportive care and toxicity. Govt schemes or insurance coverages are also considered during decision making.

Suggestion- Resource-stratified NCG guidelines (essential, optimal, ideal tiers) will help physicians to explain to the patients better. Wider use of approved Indian biosimilars. Better physician and patient awareness of patient-access programmes (Roche Blue Tree etc) with simplified documentation and customer support in local languages; reaching rural patients as effectively as urban. Exercising section 84 for high-demand unaffordable patented drugs. Faster DCGI approval for cost-effective Chinese drugs. Dedicated social workers at every centre for pre-treatment financial counselling and PM-JAY/CGHS/state-scheme navigation. More Indian trial sites, PPPs, and structured CSR fund linkage to overcome all financial associated issues.

Pharmacogenomics-DPYD, UGT1A1*28 and *6, TPMT/NUDT15 spectrum differ from western cohorts and tested after toxicity has occurred.

Suggestion- Indian-specific testing panels built through AIIMS/TMC collaborations. Uniform NCG-ICMR testing guidelines from retrospective Indian toxicity data with broad accessibility to these testing.

Disease biology-TNBC rising in premenopausal women; tobacco-driven head & neck cancers with different chemoradiation and IO responsiveness; NASH-induced HCC on the rise (an immune-desert phenotype with poorer IO response than viral HCC); melanoma arising in non-sun-exposed sites with differing IO responsiveness compared to Western cohorts, such biological differences are many.

Suggestion- India-led trials in India-specific cancers are the only way forward: expand TMC's head-and-neck work, dedicated gallbladder cancer research in endemic belts, ICMR-funded meta-analyses of fragmented Indian datasets. Oncology residency curriculum must actively include research and data analysis rather than having thesis as a formality. Cross-institutional collaboration to characterize Indian biological differences; and to earn representation in international trials.

Drug availability - DCGI approvals lag; government scheme inclusion, tax exemptions, and Section 86 invocations hardly perused;

Suggestion-Faster DCGI alignment with FDA/EMA approvals through CDSCO reform. Expanded tax and import-duty exemptions for life-saving oncology drugs. State-wise bulk procurement to negotiate prices.

Infections and Comorbidities-Latent TB reactivation with steroids and chemotherapy; HBV reactivation with rituximab; higher rates of orofaecal infections and low sanitation standards; high comorbidity even in young patients; polypharmacy interaction risk and comorbidity-driven sepsis.

Suggestion- Universal pre-treatment viral screening and prophylaxis where indicated. Multidisciplinary, coordinated comorbidity management—avoiding hypoglycaemia in cachectic diabetics, optimising polypharmacy, handling toxicity like IrAEs.

Diagnostics - NGS, standardized IHC/FISH, and PET-CT concentrated in metros, with long turnaround times.
Suggestion- Molecular diagnostic networks - peripheral collection, regional processing. AI-based pathology support for remote centres. NCG-accredited laboratory standards. Subsidised NGS through public-sector platforms (TMC, AIIMS, ACTREC) and PPP tie-ups with private labs at concessional rates.
Literacy & comprehension-explanations even in vernacular often fail regarding neutropenic sepsis and other red-flags, and when to reach hospital; written instructions assume literacy.
Pictorial vernacular toxicity cards with eg traffic-light triage (green/amber/red) kept as simple as possible. Teach-back method at every counselling visit by staff. Repeated video-based explanations on screens in waiting areas and chemo rooms. Dedicated 24/7 oncology helpline numbers given at discharge from every centre.
Misinformation & alternative medicine- Decision-making is collective; the patient often does not decide for themselves and may not even know the diagnosis, leading to dissatisfaction when side effects appear. WhatsApp-driven misinformation, no single trusted source, and undisclosed AYUSH/herbal use create adherence and interaction risks. Cosmetic concerns (hair loss) drive outright refusal in some women.
Suggestion- Active patient education on drug interactions. Family-inclusive counselling -bring patient into the room. Psycho-oncology input wherever feasible to support patients and caregivers emotionally. NCG-ICMR curated app or chatbot with verified, continuously updated content as a counter to WhatsApp misinformation. Wider scalp cooling availability and upfront cosmetic counselling for women refusing chemotherapy on hair-loss grounds.
System-Travel burden, loss to follow-up, incomplete prolonged regimens (maintenance immune, trastuzumab etc, years of endocrine therapy), RT waiting lists, limited palliative care, and lack of true multidisciplinary care outside major centres.
Suggestion- Tertiary initiation and peripheral continuation wherever resources are very difficult. Tele-oncology virtual tumour boards (NCG model). Hypofractionated RT, wherever feasible to ease RT slot pressure, alongside expansion of RT centres. Shorter regimens from evidence in selected lower-risk patients (eg Trastuzumab) where affordability also matters, with apex-centre trials extending this evidence to maintenance settings. NCG-accredited district palliative care centres to decentralise follow-up -expanded through PPP and NGO funding, since palliative care infrastructure remains the biggest gap.

Full Name:
Monish Balaji S

Name of the Institution:
Kilpauk Medical College, Chennai

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To customize treatment to the Indian context

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.):

1 Clinicians in India consider tumour stage, ECOG performance status, organ reserve, renal and hepatic function, and prior therapies while selecting anti-cancer treatment. Socio-economic constraints, affordability of targeted drugs, distance from treatment centres, nutritional status, and prevalence of co-infections like tuberculosis or viral hepatitis strongly influence decisions. Genetic variability affecting drug metabolism and expected adherence in resource-limited or rural settings are also assessed carefully for individualized therapy in India context

2 Population level differences include higher prevalence of infection-associated malignancies such as cervical, oral, and liver cancers, distinct genetic polymorphisms in drug-metabolizing enzymes like CYP450 variants, and generally lower body surface area affecting dosing strategies. Environmental exposures such as tobacco chewing and air pollution also modify tumour biology. Nutritional deficiencies and variable gut microbiome composition further influence tolerance and response to chemotherapy and immunotherapy in Indian patient populations specifically

3 Major challenges in applying global oncology guidelines in India include high cost of novel targeted and immunotherapy agents, limited access to comprehensive molecular diagnostics, and uneven distribution of oncology infrastructure across urban and rural regions. Additionally, many guidelines are derived from Western populations, leading to reduced external validity. Late-stage presentation, inconsistent follow-up, and variable health insurance coverage further complicate standardized implementation and optimal patient outcomes and real-world constraints significant

4 Innovative tailoring strategies include integration of pharmacogenomic testing panels to guide dose optimization, development of cost-sensitive biosimilar-driven regimens, and use of artificial intelligence—based clinical decision support systems incorporating socio-economic risk scoring. Tele-oncology platforms can improve follow-up in remote regions, while decentralized chemotherapy delivery centers reduce travel burden. Establishing large-scale Indian real-world cancer registries and embedding nutrition and infection management into oncology pathways can further refine personalized, context-specific therapy adaptation supporting equitable precision oncology across diverse Indian settings overall impact.

Full Name:
Dr Mohamed Thanish

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Stanley Medical College, Chennai

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To establish a concrete, evidence driven framework for tailoring anti-cancer therapy to Indian patients by identifying the specific biological, pharmacogenomic, and epidemiological factors that distinguish our population from global trial cohorts, and by proposing the infrastructure needed to replace borrowed evidence with data generated from Indian patients themselves.

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.):

Every day in our OPDs, we make treatment decisions using evidence that was not generated for our patients. The pivotal trials that define our standards enrolled predominantly Western or East Asian populations. We apply their conclusions to a population with a different genetic architecture, different carcinogen exposures, different nutritional status, and a disease presentation that arrives a decade earlier and a stage later. This is not a minor calibration issue. It is a foundational problem in how Indian oncology is practiced. We do not have a data gap. We have a representational gap. Indian NSCLC patients have EGFR mutation rates intermediate between Western and East Asian populations, with a distinct exon 19 to L858R distribution that affects resistance patterns to osimertinib. Indian oral cavity cancers are driven by tobacco and areca nut, which produce a TP53 mutational signature that looks nothing like HPV-positive oropharyngeal cancer. Indian breast cancer arrives a decade younger, with higher triple negative rates and a BRCA germline landscape we have not systematically characterised. Indian patients metabolise fluoropyrimidines through DPYD variants whose frequencies in our population are not known. Clinicians treating Indian patients consider all of this implicitly and imperfectly, because the data to do it explicitly does not exist.

My proposal is a National Indian Cancer Pharmacogenomics Consortium, federated across NCG member institutions, that mandates collection of germline pharmacogenomic data alongside tumour molecular data for every new patient enrolled in any institutional cancer registry. Pre-treatment DPYD, UGT1A1*28 and TPMT screening should become standard before fluoropyrimidines, irinotecan,6MP, because the cost of an immediate type of severe toxicity far exceeds the cost of the test. The data collected should be open access, linked to treatment outcomes, and used to generate Indian specific prescribing guidance within five years. We already collect the patients, but we simply need to learn from them systematically.

Full Name:
Jarfin I M

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Gleneagles Health City, Chennai

State:
Tamil Nadu

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

To adapt global oncology evidence to Indian patients without diluting science, safety or compassion.

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.):

In India, treatment decisions must consider stage, biomarkers, performance status, organ function, nutrition, infection risk, comorbidities, affordability, travel distance, caregiver support, drug availability and patient understanding. Many patients present late, are undernourished, anemic, or already financially exhausted.

Population-level factors matter. Indians may differ in body size, pharmacogenomics, tolerance, infection exposure, microbiome, tobacco patterns, reproductive factors, diet, and environmental carcinogen exposure. Social factors are equally important: delayed diagnosis, stigma, dependence on family income, and unequal access between cities and villages.

The challenge with global guidelines is that many trials underrepresent Indian patients. Drugs may be approved but unaffordable, molecular testing may be delayed, supportive care may be weaker, and follow-up may be difficult. A "category 1" recommendation in a Western guideline can become unrealistic if the patient must sell land to complete it.

Solutions include Indian real-world registries, dose-optimization studies, pragmatic clinical trials, biosimilar confidence-building, resource-stratified protocols, tele-oncology, district chemotherapy units, and stronger use of Tamil Nadu government insurance pathways. Treatment plans should include an ideal option, an affordable evidence-based option, and early palliative integration when cure is not realistic.

Roche can support through responsible access programs, Indian data generation, molecular testing support and transparent collaboration with government and academic centres.

The aim is not "Indian jugaad oncology". The aim is mature, evidence-based Indian oncology—where international science is respected, but the patient in front of us is never forgotten.

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

Problem statement: Global oncology guidelines are largely built from Western trial populations, yet Indian cancer care operates in a vastly different reality. Indian patients often present younger, at advanced stages, with malnutrition, anemia, infections, organ dysfunction, financial toxicity, limited biomarker access, and variable treatment adherence. Genetic polymorphisms affecting drug metabolism, differing toxicity patterns, tobacco-related disease burden, and socioeconomic constraints make direct adoption of global protocols impractical. This creates overtreatment, undertreatment, avoidable toxicity, and inequitable outcomes.

Objective: To develop an India-adapted oncology treatment decision framework that personalizes anti-cancer therapy based not only on tumor biology, but also on real-world Indian patient biology, affordability, access, and treatment feasibility.

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.):

Solution: Precision oncology for Indian realities, not imported assumptions.
BHARAT-ONCO FIT (5-Factor Therapy Fit Model)
Before treatment, every patient undergoes rapid structured assessment:
B: Biology: Tumor subtype, biomarkers, pharmacogenomics where relevant
H: Host factors: Age, nutrition, anemia, renal/hepatic function, infections, frailty
A: Access realities: Insurance, travel distance, diagnostics availability, drug affordability
R: Response predictors: Indian toxicity trends, prior treatment tolerance, comorbidities
T: Treatment feasibility: Adherence capacity, caregiver support, treatment logistics

Example

A 58-year-old rural head-and-neck cancer patient qualifies for standard cisplatin chemoradiation per global guidelines. BHARAT-ONCO FIT identifies severe malnutrition, borderline renal function, long travel burden, and poor caregiver support. Therapy is safely adapted to weekly tolerable protocols with nutrition optimization and decentralized follow-up improving completion and outcomes.

Full Name:
Anirudh

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SAIMS, Indore

State:
Madhya Pradesh

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
It is high time that we understand the rules and guidelines of the second most populous country (although a falling birth rate), India is rules by Under-nourishment, stunted growth, short stature , addictions, protein malnourishment, poor ability to sustain injuries, massive over hospitalisation, polypharmacy and lack of awareness, all these directly or indirectly affect outcomes of therapy. Our Aim should be to develop an India-specific precision oncology framework that improves treatment accessibility, safety, affordability, and clinical outcomes by adapting anti-cancer therapies according to the genetic, socio-economic, nutritional, environmental, and healthcare realities of the Indian population.

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.):
Treatment of cancer in India requires treatment strategies tailored not only to tumor biology but also to the unique realities of Indian patients. Factors such as late-stage presentation, financial limitations (affordability), malnutrition, infection burden, treatment interruptions, limited access to molecular testing, and variations in healthcare infrastructure significantly influence outcomes lack of awareness, impoverished govt hospital (under equipped), better paramedic care, and tolerance to therapy. Prior to starting therapy, clinicians should evaluate nutritional status, comorbidities, affordability, travel burden, family support, infection risk, and expected treatment compliance in addition to stage and biomarkers. A constant efforts for countering myths should also be stressed upon, data interpretation for patients should be carried, especially in a countries with 103 and more dialects and languages as well as various faiths.

A very major challenge in implementing global oncology guidelines in India is the mismatch between ideal evidence-based recommendations and real-world resource constraints. Expensive targeted therapies, limited biomarker access, inadequate supportive care infrastructure, and uneven distribution of oncology centers often restrict optimal implementation.
The proposed framework includes:
tiered evidence-based protocols for high-, middle-, and low-resource settings,
use of generic and biosimilar therapies,
tele-oncology and regional MDT networks,
AI-assisted treatment decision tools,
standardized toxicity monitoring systems,
low-cost molecular testing pathways, & prospective Indian real-world outcome registries.
Additionally, Indian-specific clinical trials and pharmacogenomic databases should be strengthened to generate population-relevant evidence rather than relying entirely on Western datasets.

Full Name:
Livin T

Name of the Institution:
Madurai Medical College, Kanyakumari

State:
Tamil Nadu

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
You absolutely have to weigh the patient's harsh financial reality right alongside their baseline nutritional state. A massive chunk of our cases show up with advanced disease and frankly terrible lean body mass.

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.):
Figuring out the right systemic strategy for our patients means tossing those textbook Western algorithms right out the window. When you are sitting in a packed outpatient clinic here in Tamil Nadu, you just aren't looking at raw tumor biology alone. You absolutely have to weigh the patient's harsh financial reality right alongside their baseline nutritional state. A massive chunk of our cases show up with advanced disease and frankly terrible lean body mass.
But pushing a standard NCCN or ASCO dose on them is usually a disaster. The population-level differences are huge. Genetically, our patients metabolize these drugs differently. They often get hit with brutal haematological toxicities from standard Western chemo doses. We also see specific GI malignancies striking much younger here compared to what the major international trials report.
Trying to force those global guidelines into our daily practice is completely frustrating. Those protocols assume immediate access to robust insurance and rapid molecular testing. But on the ground, out-of-pocket limits dictate absolutely everything. We simply cannot order a massive next-generation sequencing panel for a family that is already struggling to just pay for their travel between Madurai and Chennai for treatment.
And this is exactly why we have to heavily tailor our approach. A practical fix is using resource-stratified frameworks to prioritize high-value generic agents over those novel targeted drugs. We really need to lean into dose-titration protocols. Starting the chemo slightly lower and scaling up prevents those catastrophic early toxicities. And honestly, maximizing our upfront surgical optimization is the real game-changer. When expensive neoadjuvant biologics are completely off the table, achieving a flawless R0 resection with a thorough lymphadenectomy—really sticking to the rigorous principles of the Japanese Cancer Guidelines—is frequently the only real shot that patient has at long-term survival.

Full Name:
Shashanka K S

Name of the Institution:
Manipal Hospital, Bangalore

State:
Karnataka

Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
Problem statement: In oncology and medicine in general, we health care professionals read a lot of western literature which underrepresent Indian data. However during clinical practice it is not uncommon to contrasts in incidence, presentations, treatment responses, For eg Indian have much higher rate of EGFR compared to western world. Access to healthcare, affordability, play a major role in shaping the oncology care in India. Other factors like multiple comorbidities, high infection rate, poor tolerance have a say when we are coping internal guidelines. Local diet factors and drug interactions are not looked into largely. Cancer stigma remains in large extent in rural India. Lack of awareness and access to healthcare force patients to present late. Long Travels many times leads to exhaustion, financial burden, loss of occupation etc. All these factors determine how a patient experience cancer care in India.

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.):
Solution :
These patient experiences will not uniform in the entire country. As oncologist we should take into account of variables in social, economic, genetic, psychological factors pertaining to population we serve, when planning a treatment. At an individual patient level we should start with analyzing the above factors along with performance status etc.

- Develop Indian specific data of drug doses, their efficacy and tolerability with prospective and retrospective studies, have multicenter collaborations to get large volume of cases.
- Low dose studies (Eg: immunotherapy) to reduce the financial burden without compromising the oncological efficacy.
- At state and regional levels conduct audits of each year oncological cases, to analyses the factors affecting the outcomes locally (eg type of tumors, treatment received, dropouts are asked about the reason, non-medical factors like side effect experienced by the patient etc)
- Changing the doctor centric to patient centric practice: taking into consideration of patients' priorities, explaining them realistic treatment plan and taking a shared decision.
- Focus on local diet factors which possible interact with drugs, looking into ways to improve patient nutrition, by dietician or doctors who are well-versed with local diet and provide valuable inputs.
- Tailoring treatment considering social factors: hair fall is a major concern for most of the female patients in India, choosing regimens to maintain efficacy and minimize side effects.
- Development of local oncologist forums: Often conferences gets limited to putting forward latest international data, establishing a website or forum group locally to discuss the unique medical challenges faced by oncologist in locality and attempts to find a study to address that. For example: Indian melanoma does not respond to immunotherapy very well, sharing treatment experiences and development of pilot multicentric studies to look into the other possible alternate treatments.

- Including local habits into treatment : for examples definition of exercise in international studies may not be directly replicable in Indian patients, integrating Yoga or other forms of physical activities a patient likely practice as per the native habits.
- Enabling rural oncology care by training, building infrastructure, tele oncology, mobile units etc improves overall patient experience.
- Developing palliative care centers in tertiary care centers to training in palliative care in PHC will help to integrate early palliation of symptoms in metastatic disease, shifting the focus beyond PFS and OS to overall wellbeing at an individual level.
- Simple changes from health care professionals like smiles, bed side manners, addressing patient with respect, adding personal touch in conversations with patients make overall cancer experience better.

Full Name:
Jagga Sankalp Harish

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State:
Karnataka

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

- To identify patient-specific and population-level factors that influence anti-cancer therapy selection in the Indian setting.
- To evaluate challenges in implementing global oncology guidelines in India and understand their impact on treatment outcomes.
- To propose practical, evidence-based, and resource-adapted strategies for delivering personalized cancer care to Indian patients

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.):

Cancer care in India requires a personalized approach that considers the country's genetic diversity, socioeconomic differences, healthcare accessibility, and unique disease patterns.

1. Factors Considered While Suggesting Anti-Cancer Therapy
   - Cancer type, stage, molecular profile, and treatment intent.
   - Age, ECOG performance status, comorbidities, and nutritional status.
   - Organ function (renal, hepatic, cardiac).
   - Financial affordability and access to treatment facilities.
   - Patient preferences, social support, and treatment compliance.
   - Availability of diagnostics, drugs, and supportive care services.
2. Population-Level Differences Affecting Therapy Decisions
   - Genetic variations influencing drug metabolism and toxicity.
   - Higher prevalence of certain cancers such as oral, cervical, and gallbladder cancers.
   - Differences in nutritional status, body composition, and comorbidity burden.
   - Variable access to healthcare between urban and rural populations.
   - Cultural beliefs, health literacy, and delayed presentation of disease.
   - Differences in infection-related cancers due to HPV, HBV, and HCV prevalence.

3. Challenges in Implementing Global Guidelines in India
- High cost of targeted therapies, immunotherapy, and molecular testing.
- Limited availability of advanced diagnostics in many regions.
- Resource constraints and unequal healthcare infrastructure.
- Underrepresentation of Indian patients in global clinical trials.
- Variability in insurance coverage and out-of-pocket expenditure.
- Workforce shortages and limited access to specialized oncology centers.

4. Ideas for Tailoring Anti-Cancer Therapy in India
- Develop India-specific treatment guidelines adapted to available resources.
- Increase participation of Indian patients in clinical trials and real-world evidence studies.
- Use pharmacogenomic research to understand population-specific drug responses.
- Expand access to affordable generics, biosimilars, and molecular diagnostics.
- Implement risk-adapted and resource-stratified treatment pathways.
- Use tele-oncology and AI-based decision-support systems to improve access in underserved regions.

Rather than simply adopting Western guidelines, India should generate its own evidence based on local patient populations. A balance between scientific evidence, affordability, accessibility, and patient preferences is essential to deliver effective and equitable cancer care.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To develop India-specific personalized cancer treatment strategies that consider genetic diversity, disease patterns, socioeconomic factors, healthcare access, and patient preferences to improve the effectiveness, safety, and affordability of anti-cancer therapies.

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.):
Selection of anti-cancer therapy in India requires consideration of multiple factors including cancer type and stage, tumor biology, molecular profile, patient age, performance status, comorbidities, nutritional status, organ function, treatment affordability, availability of therapies, geographic access, and patient preferences.
Population-level differences include variations in cancer incidence patterns, genetic diversity, prevalence of infectious causes of cancer, lifestyle factors, environmental exposures, pharmacogenomic differences, and socioeconomic disparities. These factors may influence treatment response, toxicity profiles, and access to standard therapies.
Challenges in implementing global oncology guidelines in India include limited access to molecular diagnostics, high treatment costs, variable healthcare infrastructure, shortage of trained specialists, differences in patient presentation, delayed diagnosis, limited clinical trial representation, and affordability constraints.

Potential solutions include developing Indian evidence-based guidelines incorporating local data, expanding access to affordable diagnostics and essential medicines, promoting India-specific clinical trials, and integrating real-world evidence into treatment decisions. Pharmacogenomic research can help identify population-specific variations affecting drug response and toxicity.
Additional approaches include strengthening multidisciplinary cancer centers, improving referral networks, expanding tele-oncology services, implementing value-based treatment selection, and incorporating patient preferences into decision-making.
A personalized and resource-sensitive approach can help bridge the gap between global advances and the unique needs of Indian cancer patients while ensuring equitable and effective cancer care.

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Objective of your solution: (Briefly define the primary outcome of your solution to this challenge):
To ensure every patient receiving fluoropyrimidine chemotherapy in India has access to biologically-guided dosing, irrespective of geography/treatment setting. PRAGATI (Precision Risk Assessment Guided Approach for Therapy Individualization) aims to establish a nationally scalable precision-dosing framework using dried blood spot-based DPD phenotyping to identify patients at high risk of severe toxicity, enable risk-stratified treatment initiation, and improve treatment efficacy. By reducing severe toxicity, financial and time toxicity, and barriers to specialized testing, PRAGATI seeks to increase access to personalized cancer care across India, with the opportunity for future expansion to other anticancer therapies.

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.):
PRAGATI (Precision Risk Assessment Guided Approach for Therapy Individualization) is a decentralized precision-dosing framework developed to make safer fluoropyrimidine (FP) therapy accessible across India. Up to 1/3rd patients experience severe FP toxicity (1). Pretreatment DPYD genotyping is recommended, but applicability is limited by cost, availability, and the ability to predict only a minority (<10%) of Actionable toxicity events (2). DPD phenotyping using Uracil and Uracil/Dihydrouracil(U/UH2) provides a direct functional assessment of FP metabolism, is cheaper(5Ã—) and faster (7Ã— shorter TAT) than genotyping, but is limited by complex sample-handling requirements (3,4). PRAGATI leverages dried blood spot (DBS) to overcome these barriers and transform empirical BSA based approach to biologically guided precision-dosing.
A simple (50µl) venous DBS sample can be collected at any oncology center and transported via existing postal/courier networks to regional LC-MS/MS laboratories without necessitating rapid plasma processing or cold-chain infrastructure. This will provide access to biologically guided fluoropyrimidine dosing without traveling to specialized centers for patients treated in resource-limited settings. Evidence supporting DBS stability and feasibility was presented at the IATDMCT,2025 conference (5).

Using validated uracil thresholds, patients can be stratified before treatment initiation according to toxicity risk. Data from our center has shown a strong association between elevated pretreatment uracil levels and severe toxicity, while many toxicity events were not identified by DPYD genotyping alone (6). High-risk individuals may receive individualized starting doses, followed by fluoropyrimidine therapeutic drug monitoring (TDM) by the same DBS platform to reduce severe fluoropyrimidine-related toxicity, prevent avoidable hospitalizations, enable exposure-guided dose optimization during subsequent treatment cycles to improve efficacy while reducing toxicity (7).
By reducing financial and time toxicity, treatment-related morbidity, and dependence on centralized testing infrastructure, PRAGATI offers an affordable, scalable, and patient-centered solution that can bring precision fluoropyrimidine therapy to every patient/cancer center in India. The same framework could subsequently be expanded to other anticancer therapies, creating a foundation for accessible precision oncology nationwide.

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