

Title:

How to bring chemotherapy/immunotherapy closer to patients' homes?

Full Name:

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Name of the Institution:

Government Kilpauk Medical College (GKMC), Chennai

State:

Tamil Nadu

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

Key objective is to bring chemotherapy and immunotherapy closer to patient homes, particularly in rural areas—done with the help of policymakers and health authorities and grass root level physician and nurses.

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.):

To bring cancer care closer to homes, specially in rural areas, a hub and spoke model should be adopted. In which satellite centres are setup every 50 to 70km radius, so that the distance of travel for patients to get essential treatment is reduced significantly. Regional centers can be made to take incharge of centres surrounding 300km around them and they can coordinate with the physicians and nurses in the satellite centers and ensure quality treatment on par with Regional treatment. Provisions should be made to conduct tumor board virtually and take treatment decisions seamlessly without burdening the patient to travel longer distances. Satellite center physicians and nurses can be given adequate hands-on training and frequent workshops conducted for making them fluent in giving chemotherapy and immunotherapy and knowledge on pre-chemo workup and assessment of toxicity at the earliest and also be well versed in treating toxicity of any grades. A dedicated helpline can be created to help those grass root level physicians to help them treating their cancer patients at any point of time, without any doubt in mind.

Full Name:

Himaprathyusha Parupalli

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Telangana

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

Title: Caregiver-Integrated Oncology Support Model: Extending Cancer Care Beyond Hospitals in Resource-Limited Settings

Objective of the Solution:

To enhance treatment adherence, early complication detection, and continuity of care by integrating trained caregivers into a structured, tiered oncology support system that extends care beyond hospital settings.

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.):

Caregivers play a central role in oncology care but are often untrained, leading to poor adherence, delayed recognition of complications, and repeated hospital visits.

This proposal introduces a tiered caregiver-integrated model:

Tier 1: Trained caregivers responsible for medication adherence, symptom monitoring, and identification of warning signs

Tier 2: Nurse-led supervision providing guidance and escalation support

Tier 3: Oncologist oversight for complex clinical decision-making

Caregivers undergo structured training through standardized modules delivered via hospital programs or digital platforms.

Clear escalation pathways ensure safe and timely intervention.

Example: A caregiver identifies fever in a post-chemotherapy patient and ensures immediate hospital visit, preventing progression to severe infection.

By empowering caregivers, this model improves adherence, reduces unnecessary hospital visits, and extends oncology care into the home setting without requiring additional infrastructure.

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Foram Joshi

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Karnataka

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

Resource-limited countries continue to lag behind in providing equitable cancer care and ensuring patient convenience. When a member of a poor family is diagnosed with cancer, one of the biggest challenges is assigning a caregiver along with managing the added financial burden caused by loss of wages, unemployment, and the long duration of treatment.

All research, innovation, and advances in cancer care become meaningless if we fail to bridge the gap in access to equitable cancer care. If a patient has to travel for 12 hours only to stand in a queue among 600 patients in a cancer centre for a 5-minute appointment every week, it reflects a major failure at the national level and highlights the urgent need for revision in healthcare policy and patient care systems.

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.):

Improving access to oncology services at the community level is one important aspect, but there is also a need for major improvement in the framework and cost-effective functioning of Regional Cancer Centers where patient load is extremely high. Cancer care cannot be delivered without cancer care providers. However, in many countries, specialist positions in public hospitals remain vacant.

Oncologists, nurses, and technicians often move to private practice or wealthier countries. Rural postings remain vacant for years. The reasons are clear: inadequate salary, poor working conditions, limited opportunities for professional growth, and political influence. Governments announce ambitious cancer care programs while ignoring the basic reality that these programs require trained healthcare professionals to function effectively.

Establishing cancer centers at the community level is not impossible. It requires a proper framework with a quality monitoring team to supervise implementation of the proposed projects. It may not always be possible to establish completely new centers, but strong collaboration with the private sector and introduction of healthcare schemes with proper incentives can help ensure equitable and quality cancer care for all patients.

One of the major barriers to such collaborations is the delay in reimbursement of financial incentives, which reduces active participation from private healthcare sectors. At times, there is no proper regulatory committee to monitor the services provided, actual treatment costs, and misuse of resources. Corruption and lack of supervision continue to deprive poor patients of their basic right to equitable cancer care.

It is extremely important to create a framework that improves the oncologist-to-patient ratio, strengthens national-level teaching programs, improves salary structures, and opens permanent posts to fill vacancies in remote and community healthcare settings. It is equally important to implement bond service policies and ensure that vacancies are filled so that quality oncology care reaches common people near their homes. Recruitment processes should include a multidisciplinary team consisting of oncologists, radiologists, pathologists, trained nursing professionals, and patient support staff.

The workload at Regional Cancer Centers and the long waiting hours cannot be ignored. Delays occur at every step, from diagnosis to doctor consultation, medication procurement, medication administration, inpatient admission, and enrolment in government-funded schemes.

The main goal should be proper triaging of patients at tertiary cancer centers and redirecting suitable patients to community healthcare sectors where similar treatment can be safely provided with greater patient convenience. Unless equitable cancer care becomes a priority, the goal of quality cancer care for all cannot be achieved.

Cancer care closer to home not only improves quality of life but also allows patients to spend less time in hospitals and more time with their families and caregivers while reducing financial burden and emotional stress.

Full Name:

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

The primary outcome is to increase the timely completion of planned chemotherapy/immunotherapy cycles by improving access to safe, decentralized cancer care closer to patient's homes.

This will be measured through:

Reduction in treatment delays and missed cycles

Decrease in treatment abandonment rates

Improved patient adherence and continuity of care

Reduction in travel-related financial and logistical burden

Maintenance of safety outcomes (no increase in severe adverse events).

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 access in India is constrained by travel burden, fragmented follow-up, workforce concentration in tertiary centres, and hidden social barriers (elderly patients living alone, migration of caregivers, loss of wages). Decentralization must therefore go beyond shifting infusion sites—it must redesign the entire care pathway.

A digitally enabled, risk-adaptive oncology ecosystem:

Smart Triage & “Digital Twin” Monitoring:

Each patient is risk-stratified (regimen risk, prior reactions, comorbidities, distance from hospital). A mobile-based “digital twin” dashboard tracks vitals, toxicity checklists, and lab trends, generating automated alerts to oncologists—reducing unnecessary hospital visits while maintaining safety.

Micro-Infusion Units (MIUs):

Instead of only district hospitals, establish portable chemo-ready units at CHCs/large PHCs equipped with trained nurses, emergency kits, and tele-oncology linkage. This bridges the last mile beyond district centres.

Oncology-at-Home 2.0 (Selective & Structured):

Home care evolves in phases:

Phase 1: Symptom care, oral therapy monitoring, palliative support

Phase 2: Low-risk injectables (G-CSF, bisphosphonates)

Phase 3: Selected maintenance infusions under strict protocols

AI-assisted checklists and remote supervision enhance safety.

Community Oncology Navigators:

A trained, paid workforce (not overburdening ASHAs) supports scheduling, teleconsult access, transport coordination, and early toxicity recognition reducing dropouts and improving adherence.

Drug & Diagnostics Decentralization:

Hub-linked satellite pharmacies and sample logistics networks (home sample collection → central lab) eliminate repeated travel for routine monitoring.

Emergency Mesh Network:

Pre-mapped referral pathways with ambulance integration and “golden-hour escalation protocols” ensure rapid transfer to tertiary hubs.

Impact:

This model reduces treatment delays, financial toxicity, and abandonment—while maintaining clinical safety. In rural India, where distance and social isolation are major barriers, such a hybrid system can transform cancer care from hospital-centric to patient-centric, continuous, and locally accessible.

Full Name:

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State:

Tamil Nadu

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

The primary objective of “ONCOREACH TAMILNADU” is to improve access to safe, affordable, and continuous cancer care for rural patients by delivering selected chemotherapy and immunotherapy services closer to patient’s homes through a “Hub-and-Spoke tele-oncology model”.

The proposed solution seeks to reduce travel burden, treatment delays, financial toxicity, and overcrowding at tertiary cancer centers through the integration of satellite daycare units, telemedicine consultations, local healthcare workforce training, and digital chemo-toxicity monitoring under specialist supervision.

The model further aims to establish a scalable oncology care network in which tertiary cancer centers (Hubs) provide expert treatment planning and specialist oversight, while peripheral district hospitals and satellite daycare centers (Spokes) safely administer selected chemotherapy and immunotherapy services closer to patient’s homes in resource-constrained rural regions such as Dharmapuri district, Tamil Nadu.

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.):

“ONCOREACH TAMILNADU” proposes a practical Hub-and-Spoke tele-oncology model to decentralize selected chemotherapy and immunotherapy services for rural cancer patients eg., Dharmapuri district, Tamil Nadu.

The implementation roadmap begins with identifying a tertiary oncology center such as Madras Medical College as the “Hub” responsible for diagnosis, staging, treatment planning, management of complex toxicities, and specialist supervision. District hospitals and selected taluk hospitals in Dharmapuri will function as “Spokes” delivering selected low-risk chemotherapy, maintenance immunotherapy, blood investigations, and supportive care closer to patient’s homes.

Eligible patients will include clinically stable individuals receiving standard low-risk regimens after initial evaluation and first-cycle monitoring at the Hub center. Before each treatment cycle, patients will undergo tele-oncology consultations, laboratory review, and digital treatment clearance from hub oncologists.

Local MBBS doctors, nurses, and pharmacists at spoke centers will undergo structured oncology training in chemotherapy administration, immunotherapy adverse-event recognition, emergency management, and digital reporting protocols.

A regional-language WhatsApp-based chemo-toxicity monitoring system will be integrated for early identification of fever, diarrhoea, mucositis, rash, and respiratory symptoms, with predefined escalation pathways to the Hub center.

Standardized treatment protocols, emergency referral mechanisms, periodic audits, and continuous specialist oversight will ensure patient safety and quality assurance. The model aims to reduce travel burden, treatment delays, financial toxicity, and overcrowding at tertiary cancer centers while improving treatment adherence and accessibility of cancer care in resource-constrained rural settings.

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

- Decentralize cancer care through a hub-and-spoke oncology model connecting tertiary centers with rural healthcare systems
- Improve access, affordability, and treatment continuity for rural and underserved cancer patients
- Enable safe delivery of low-risk chemotherapy, immunotherapy, and supportive care closer to home
- Reduce financial toxicity, travel burden, and treatment abandonment through community-based oncology care
- Strengthen tele-oncology, trained home-care teams, and emergency referral pathways for safe monitoring and escalation
- Promote patient dignity, convenience, and quality of life through compassionate, patient-centered care delivery
- Integrate policy support, insurance coverage, and standardized home-infusion protocols into national cancer care systems.

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.):

For a farmer with Lung Cancer in rural Bihar, travelling 200 km for a 30-minute immunotherapy infusion may mean selling his buffalo. Treatment abandonment is rarely a choice—it is the consequence of an unkind, centralized system.

Barriers are systemic. Cancer care in India is urban-centric, while most patients live in rural areas. Peripheral hospitals lack trained oncology nurses, infusion pumps, and emergency protocols. Financial toxicity goes beyond drug costs—travel, lodging, and lost wages are often devastating. Fear of managing side effects at home makes clinicians cautious, and the absence of clear national guidelines limits adoption of home-based chemotherapy and immunotherapy.

A practical, humane roadmap lies in collaboration. A hub-and-spoke model can decentralize care safely. Tertiary centers (hubs) initiate therapy and manage complications, while district hospitals and certified home-care teams (spokes) deliver selected treatments—low-risk chemotherapy, maintenance immunotherapy, subcutaneous formulations, and oral agents. Standardized eligibility criteria, pre-infusion checklists, and clear escalation pathways are essential. Caregivers can be trained using simple, pictorial guides to identify warning signs like fever or breathlessness. Tele-oncology platforms and 24/7 helplines allow real-time specialist support. Strong logistics—cold-chain drug transport and biomedical waste disposal must be ensured. Policy support, including coverage under Ayushman Bharat and state-level home-infusion guidelines, is critical.

The case for rural India is compelling. Home-based care reduces travel burden, improves adherence, and enhances dignity. Community health workers can serve as local anchors, with structured referral pathways (home → PHC → district hospital). In selected patients, this model is both safe and cost-effective.

In my view, the future is a hybrid model—complex care at tertiary centers, routine cycles closer to home. Cancer care must stop asking patients to come to the system; it must move—safely and compassionately—to the patient.

Full Name:

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

In an usual Indian high-volume centre managing 2,500 or more new cases annually, most of patients face catastrophic financial and logistical barriers, often abandoning treatment due to the dual burden of drug costs and long-distance travel. The limited financial assistance from government bodies makes standard chemo-immunotherapy inaccessible even to healthcare professionals. Our objective is to decentralize oncology care by implementing a "Hub-and-Spoke" model that brings chemotherapy and immunotherapy closer to patients' homes. By leveraging digitalization and specialized training, we aim to eliminate travel-related attrition, reduce overcrowding at tertiary hubs, and ensure that even the most underprivileged patients receive timely, compliant, and dignified 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.):

1. Identifying and Overcoming Barriers

The primary barrier is the extreme centralization of oncology expertise. Patients often travel hundreds of kilometers for routine infusions or TKI dose adjustments. This is exacerbated by the fact that Western-based dosing is frequently poorly tolerated in our population (e.g., high HFSR rates with Lenvatinib), requiring close, frequent monitoring that distant tertiary centres cannot feasibly provide to a massive, decentralized patient base.

2. A Collaborative Roadmap

A sustainable roadmap requires a digitized, multi-stakeholder framework:

Logistical & Digital Integration: Incorporating systems like CDAC ensures high-quality data flow. Utilizing specialized software to identify the nearest health facility allows for prompt follow-up and ensures "good compliance" by keeping care local.

Safety & Regulatory Considerations: We must formalize the training of MBBS level physicians and nurses at local "Spoke" centres. By establishing clinical SOPs for chemotherapy daycare at the community level, we ensure safety while the tertiary "Hub" maintains oversight of complex protocols and individualized dosing.

Policymaker Engagement: Advocacy is essential to ensure that government grants like the PM fund and private insurance cover decentralized administration, recognizing it as a valid, cost-saving service.

3. The Case for Rural Home-Based Models

In rural India, home-based models are critical, particularly for palliative care and long-term maintenance. For patients who cannot afford the standard of care, home-based delivery of validated, low-dose regimens reduces financial toxicity and improves quality of life. By using AI to analyze decentralized RWE, we can demonstrate that bringing care to the home is a clinically sound and economically superior model for the Indian context.

Full Name:

Deepesh Sharma

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

Home-based cancer care involving palliative support, maintenance chemotherapy, low-dose immunotherapy, symptom management, and follow-up is one of the most practical, cost-effective, and patient-centric solutions to bridge the massive urban-rural divide in oncology. With ~70% of India's population in rural areas and the majority of cancer cases diagnosed at advanced stages, decentralizing care to homes and communities is not just desirable but essential. With this solution we can help to reach out to the needy rural population with the best possible treatment and effectively reducing the cost of the treatment.

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.):

Barriers in the Overall Cancer Care Experience in India

- **Geographic & Logistical:** 70% of population rural, but ~95% of specialized cancer facilities urban. Long travel distances cause delays, missed cycles, and high indirect costs (travel, lodging, lost wages).
- **Financial:** High out-of-pocket expenditure; treatment abandonment common. PM-JAY covers some but limited for advanced therapies and supportive care.
- **Infrastructure & Workforce:** Shortage of trained oncologists, nurses, and facilities at district/PHC levels. Cold chain, infusion equipment, and emergency support lacking in rural areas.
- **Safety & Regulatory:** Handling of hazardous drugs (chemo), infusion reactions, and irAEs (immunotherapy) require expertise. Limited home-health regulations and insurance coverage for home services.
- **Patient/Caregiver Factors:** Low awareness, malnutrition, comorbidities, stigma, and limited caregiver training.

Roadmap for Collaboration Among Providers, Patients, Caregivers, and Policymakers

A phased, multi-stakeholder roadmap can address logistical, safety, and regulatory issues:

1. **Assessment & Planning:**
 - a. Map needs via National Cancer Grid/Ayushman Bharat data + community surveys.
 - b. Form task forces (NCG, state health depts, NABH, CDSCO, NGOs like CanSupport, private players).
2. **Regulatory & Policy Enablement:**
 - a. Develop/adapt CDSCO/NABH guidelines for home infusion (qualified personnel, hazardous drug handling, emergency protocols, documentation).
 - b. Expand PM-JAY to explicitly cover home/daycare chemo/IO, patient navigation, and tele-supervision.
 - c. Duty exemptions + subsidies for portable infusion pumps and supportive drugs.
3. **Capacity Building & Training:**
 - a. Train nurses/CHWs (ASHAs, community officers) via Project ECHO-style tele-mentoring for administration, toxicity monitoring, and irAE management.
 - b. Certify home-care teams (oncology nurses + physicians on call).
4. **Model Implementation:**
 - a. Hub-and-Spoke + Hybrid: Tertiary hubs (TMC, AIIMS, RCCs) supervise; district hospitals/daycare centers administer; home for maintenance/low-risk cycles.
 - b. Start with oral metronomic chemo, subcutaneous agents, low-dose IO (Tata 20 mg nivolumab protocols), and supportive care (hydration, anti-emetics).
 - c. Use tele-oncology for monitoring (video toxicity checks, ABHA integration)
5. **Safety & Quality Assurance:**
 - a. Standardized protocols (pre-medication, monitoring, spill kits, 24/7 helplines).
 - b. Insurance/liability coverage for home teams.
 - c. Prospective registries for outcomes and adverse events.

6. Patient & Caregiver Engagement:
 - a. Early financial counseling + navigation.
 - b. Caregiver training apps/videos on symptom reporting.
 - c. Community awareness to reduce stigma.

7. Monitoring & Scale:

Pilot in selected districts → evaluate (adherence, QoL, cost and survival)

Case for home-based cancer care models in specific rural settings in India.

Rajasthan-Specific Model: “Rajasthan Rural & Tribal Cancer Access Program (RRTCAP)—“Ghar Ghar Mein Cancer Care” (Cancer Care at Every Home)

This practical, scalable model is designed for Rajasthan’s unique geography: vast deserts (western districts), hilly/tribal belts (southern/eastern like Udaipur, Banswara, Dungarpur, Pratapgarh, Sirohi), and rural heartlands. It leverages our clinical expertise, existing infrastructure (SMS Medical College & State Cancer Institute Jaipur, AIIMS Jodhpur, Acharya Tulsi RCC Bikaner), PM-JAY/Ayushman Bharat, and new government initiatives like district Day Care Cancer Centres and the upcoming state cancer registry.

Proposed Structure

1. **Tiered Hub-and-Spoke Network**

- Level 1 Hubs (Advanced Care): SMS Jaipur (State Cancer Institute), AIIMS Jodhpur, Acharya Tulsi RCC Bikaner, Bhagwan Mahaveer Jaipur.
- Level 2 Spokes (District Level): Upgrade/empanel district hospitals with Day Care Cancer Centres (government push for 200+ across India). Provide chemotherapy, low-dose immunotherapy (e.g., Tata-style ultra-low-dose nivolumab), targeted therapies, and basic palliative care.
- Level 3 Micro-Spokes (Tribal/Block Level): CHCs/PHCs/Ayushman Aarogya Mandirs in tribal areas equipped for oral therapies, supportive care, toxicity monitoring, and sample collection (biomarkers sent to hubs).

2. **Mobile Outreach + Tribal Camps (“Cancer Jaanch Apke Dwara” Expansion)**

- Deploy 4-6 dedicated mobile cancer units (vans with basic diagnostics, tele-oncology setup, and nurse teams).
- Regular camps in high-burden tribal districts (Banswara, Dungarpur, Udaipur, Pratapgarh, Barmer, Jaisalmer).
- Focus: Screening (oral, breast, cervical), awareness in local languages/dialects (Bhil, Garasia communities), navigation to treatment, and follow-up.
- Partner with existing programs like CJAD (Cancer Jaanch Apke Dwar) by Bhagwan Mahaveer Hospital.

3. **Home & Community-Based Care (Core for Reach)**

- Train local nurses + ASHAs/ANMs for home administration of low-risk regimens (oral chemo, metronomic therapy, low-dose IO maintenance, pain management, nutrition support).
- Use tele-oncology via eSanjeevani/ABHA for specialist supervision from Jaipur/Jodhpur.
- Caregiver training kits in local languages + 24/7 helpline.
- Palliative care teams (inspired by CanSupport model) for advanced cases.

4. **Technology Backbone**

- ABHA Integration: Digital health records for seamless hub-spoke-patient data flow.
- AI/Tele platforms: For remote symptom monitoring, treatment planning, and virtual tumor boards.
- State Cancer Registry Linkage: Contribute real-world data from tribal areas for better planning.

5. Affordability & Navigation

Maximize PM-JAY coverage (strong in rural Rajasthan; oncology is a major claim area).

Patient navigators (one per district, preferably local tribal youth) for end-to-end support: diagnosis → treatment → follow-up → financial aid (Chief Minister Relief Fund, CSR, PAPs).

Free medicine schemes + “Nishulk Onco-Pharmacy” at district levels.

6. Cultural & Tribal Adaptation

1. Involve local leaders, traditional healers (for referral, not treatment), and women self-help groups.
2. Address myths, stigma, and malnutrition common in tribal areas.
3. Nutrition supplementation integrated with treatment.

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

Bringing cancer treatment to the patient, not the patient to the treatment.

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 Barriers in India

Cancer treatment is concentrated in cities, making access difficult for rural patients.

Long-distance travel increases financial burden, treatment delays, and decreases adherence.

Shortage of oncologists, infusion centers, and trained nursing staff in smaller towns and villages.

High out-of-pocket expenses and loss of daily wages affect treatment continuity.

Strategies for Home & Community-Based Chemotherapy/Immunotherapy

Develop mobile oncology clinics and district-level infusion centers.

Use telemedicine for virtual oncologist consultations and monitoring.

Train local nurses, ASHA workers, and caregivers in cancer support services.

Introduce AI based digital patient tracking, emergency response systems, and cold-chain drug transport.

Enable selected low-risk chemotherapy and immunotherapy sessions at home under supervision.

Drone delivery of drugs and equipment to remote areas

Use of subcutaneous formulation or oral route such as oral checkpoint inhibitors and research towards same.

Collaborative Roadmap

Healthcare Providers: Create standardized safety protocols and remote monitoring systems.

Patients & Caregivers: Improve awareness, adherence, and symptom reporting.

Policymakers: Expand insurance coverage and rural oncology infrastructure.

Pharma & Technology Partners: Support portable infusion devices and digital health platforms.

Regulators: Establish guidelines for safe home administration and pharmacovigilance.

Full Name:

Dr Mohamed Thanish

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Stanley Medical College, Chennai

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Tamil Nadu

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

To propose a Hub and Spoke satellite infusion model for India that decentralises chemotherapy and immunotherapy administration to district hospitals and community health centres, using telemedicine supervised nursing protocols, subcutaneous drug formulations, and structured cold chain logistics to bring treatment to patients rather than continuing to expect patients to come to treatment.

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.):

She is 52 years old, from a village 140 kilometres from the nearest cancer centre, and she is on weekly paclitaxel for locally advanced breast cancer. Each cycle costs her six hours of travel each way, 400 rupees she cannot afford, and a day's wages she cannot lose. By her eighth cycle, she stops coming. Not because she has given up on treatment. Because the cumulative burden of showing up has become greater than her capacity to sustain it.

This is not an unusual story. In India, travel distance to a cancer centre is one of the most consistent predictors of treatment abandonment, and we have normalised it as the patient's problem rather than the system's failure.

The solution is to move the infusion chair, not the patient. A Hub and Spoke satellite model, where a trained oncology nurse administers pre-approved low complexity regimens at a district hospital under real time telemedicine supervision by a cancer centre physician, is already functioning in parts of Tamil Nadu and Kerala and needs to become a national framework rather than a local experiment.

The categories of treatment appropriate for satellite delivery are well defined by predictability of toxicity and manageability of emergencies. Subcutaneous trastuzumab and pertuzumab, oral metronomic chemotherapy, 3 monthly zoledronic acid, adjuvant capecitabine, and weekly paclitaxel, carboplatin, cisplatin infusions all qualify. The SafeHer study demonstrated that subcutaneous trastuzumab administered at home by trained nurses is non-inferior to hospital based IV administration in both pharmacokinetics and safety. India can build on that evidence.

The regulatory framework requires standardized nurse training, a defined escalation protocol to the supervising centre, and real time drug safety monitoring. Pharmaceutical companies manufacturing these agents have both the commercial interest and the organisational capacity to support cold chain logistics for satellite sites. The political will to build the governance structure is the only thing that separates this from being a national programme rather than a promising pilot.

Full Name:

Jarfin I M

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Gleneagles Health City, Chennai

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

To reduce travel, cost and treatment abandonment by safely decentralizing selected cancer care without compromising emergency preparedness or treatment quality.

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, cancer care is often centralized in cities. Patients face travel expense, wage loss, caregiver burden, long queues, poor accommodation, language barriers and fear of complications far from home. For many rural families, treatment fatigue begins before chemotherapy itself.

The solution is a graded model. Complex first cycles, high-risk chemotherapy and early immunotherapy should happen at tertiary centres. Once tolerance is established, selected low-risk chemotherapy, maintenance therapy, injections, line care, blood tests and toxicity reviews can shift to district hospitals or trained community oncology units. True home administration should be limited to carefully selected drugs and stable patients, with strict protocols.

Tamil Nadu can use its government medical college network, district hospitals, CMCHIS pathways and tele-oncology platforms to build hub-and-spoke cancer care. Nurses and medical officers must be trained in chemotherapy safety, extravasation, anaphylaxis, neutropenic fever, immune-related toxicity and referral triggers.

A roadmap needs shared treatment plans, digital records, emergency contact systems, caregiver education, cold-chain protocols and biomedical waste handling. Patients should know when to seek urgent care, not just when to take tablets.

Roche can support through nurse training, patient education, digital monitoring tools, safety checklists and access programs.

Home-near cancer care is not about making oncology casual. It is about recognizing that a poor patient travelling 200 km for a simple maintenance dose is not receiving modern care; he is surviving a system that must become kinder.

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Santhosh Ramanan

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

Cancer treatment in Tamil Nadu at government hospitals like us (madras medical college) is a challenge to both the patients and doctors in terms of logistics.

Improvement of grassroot level infrastructure, district based cancer care and maintenance of registry via an app are possible solutions for prevention of treatment default and also to make cancer care at government centres more accessible.

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.):

The barriers to treatment:

- At present there are four apex institutions in Tamil Nadu for cancer treatment at Chennai, Madurai, Tirunelveli and Coimbatore where OPD and cancer care are given by trained medical oncologists and oncology postgraduates,
- This poses the dilemma that patients at rural areas to be mobilised to those centres for treatment, although a provisional diagnosis can be made at lower-level centres.
- This mobilisation of patients leads to difficulties in treatment such as monitoring of the patient for adverse events and strict adherence to chemotherapy cycles.
- Mobilisation of patients to higher centres also leads to shortage of drugs at a faster pace
- As patients have to travel to longer distances to get their treatment, it affects both the patient as well as attenders in terms of longer hospital stays, poor finances for the attenders due to them being away from their day-to-day work to get those wages.
- There is poor awareness, misleading myths and fads about cancer diseases at rural areas leading to difficulties in explaining about the patients condition and the treatment required.

Some pointers to a possible and a feasible solution:

- Education of grass root level workers about cancers, etiology, myths and fads prevalent among the rural population
 - At present, in the rural level VHN and other healthcare workers at grassroots level are employed for reproductive and child health care, non-communicable diseases care. This resource (grassroot level workers) can be mobilised to identify cancer patients and make a registry at PHC level. This registry can alert us about possible hotspots in the state.
 - At present, there are 38 districts in Tamil Nadu, although a few district hospitals serve cancer patients, majority of the diagnosis and treatment is handled by apex centres, Thus, establishment of dedicated cancer centres at each district hospital can be done to mobilise patient to his/her own district for the said care.
 - The medical officer and staff nurses at each district hospitals can be educated about chemotherapy administration, adverse effects, management of adverse effects and referral to a higher centre if needed by a medical oncologists.
 - This has one caveat that the diagnosis chemotherapy policy and response assessment be made at the apex hospital so that the patient still gets the superspecialist opinion required.
 - This can ensure that the patient visits the apex centre only at the time of diagnosis for chemotherapy policy and another time at the end of chemo cycles for response assessment and further action.
 - We can also employ the grass root workers to alert the patients regarding upcoming cycle of chemo, monitor the patients in the home for minor adverse effects (fever, shortness of breath) for possible referral to higher centre for management.
 - We can bring interest to the treating physician and staff nurses in district hospitals by offering incentives for every patient accrued, registered and treated.
 - District rotatory program has been in place for MD postgraduates as of now where they are posted at a rural place for 3-4 months. This can also be done for DM postgraduates so that they can temporarily man said district hospitals for cancer care, educate the inhouse medical officer and staff nurses.
 - Any query regarding cancer treatment arising from doctors or staff at hospital centres to be addressed by a dedicated medical oncology team via video call, phone call etc.
 - The functioning of this setup to be reviewed monthly by medical oncologist or MDT team.
 - To bring down the financial burden of these patients and attenders during treatment course, dedicated monthly allowances can be given to them by government. This can motivate both the patient and attenders to not default treatment or make them more receptive to the treating team.
 - Finally, the registry from each PHC level can be incorporated into an app so that both the patient and doctors can be kept in the loop.
-

Full Name:

Dr. Chilamkurty Maitreyi

Name of the Institution:

Stanley Medical College, Chennai

State:

Tamil Nadu

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

Problem statement: For many cancer patients in rural India, treatment is not limited by medicines, but by distance. Repeated long travel for treatment cycles if chemotherapy, immunotherapy, pre chemo work up blood tests, follow up cases missed treatments, financial strain, lose wages and work for patients and caregivers burden. Safe cancer care closer to home remains limited due to workforce gaps, weak referral systems and of clear decentralized treatment protocols.

Objective: To Develop and implement Decentralized ONCOBUDDY platform to create a practical and reliable cancer care system for rural communities, where eligible patients can receive treatment closer to home without compromising safety. By connecting cancer centres, local hospitals, digital monitoring, emergency support and patient travel networks. This ONCOBUDDY model aims to reduce delays, ease financial and travel burdens, prevent treatment dropouts and help patients continue care consistently.

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: ONCOBUDDY is a connected rural cancer access ecosystem that brings treatment closer to patients through safe decentralized care and peer mobility. Pillar framework is the engine to implement ONCOBUDDY. This helps coordinate shared transport, improve communication, reduce social isolation, strengthen treatment adherence and lessen the financial burden on both patients and caregivers. Cancer survivors and trained navigators can further support patients with reminders, education and emotional guidance.

Pillar 1: SAFE SELECT- only appropriate patients Eligible: Maintenance immunotherapy, Low infusion reaction regimens, Sub cutaneous oncology therapies, supportive care, hydration, growth factors, symptom management.

Not Eligible: First cycle high risk chemo, vesicants, unstable patients, severe comorbidities. First cycle always at tertiary cancer care centre in view of safety and toxicity concern

Pillar 2: ONCO NET- Hub: Regional cancer center- Oncologist treatment plan, consent, toxicity education, escalation protocol

Spoke: District hospitals-trained oncology nurses, protocol administration, labs, tele oncology supervision.

Community/home visits-Vitals, symptom checks, supportive medications.

Pillar 3. ONCOBUDDY CONNECT-clusters patients geographically (same district/taluk/village)

- Create WhatsApp/phone support groups moderated by Oncology Navigator /nurse.
- Match "Treatment buddies" receiving care on similar dates.
- Enable pooled transport coordination for day care / hospital visits.
- Senior cancer survivors become patient Champions.
- Caregivers connect for logistics coordination.
- Automated reminders for upcoming cycles.

Solves patient mobility and peer emotional support.

Pillar 4. RAPID SAFE: EMERGENCY escalation and toxicity response-Emergency reaction kit, ambulance linkage, escalation protocol, predefined referral triggers, District ICU transfer pathway, digital adverse event documentation.

Pillar 5. ACCESS ALLIANCE: Pharma industry partner like Roche can support for nurse training grants, digital platform funding, transport support, cold chain infrastructure, patient education and real-world evidence research. Governance-independent clinical oversight, Neutral evidence-based protocols, public private transparency.

CASE SOLUTION With ONCOBUDDY 5 Pillar model:

A 52-year-old woman from a remote village in Tamil Nadu diagnosed with HER2 positive breast cancer must travel 180km for treatment missed cycles due to travel cost and other logistics.

ONCOBUDDY-

1. SAFE SELECT-confirms eligible for decentralized care-First dose at apex center.
2. ONCO NET-mapped to district spoke.
3. ONCOBUDDY CONNECT-matched with 3 nearby patients for pooled transport.
4. RAPID SAFE-Nurse tele check pre chemo cycle and enables urgent escalation if needed.
5. ACCESS ALLIANCE-supports trained staff and infrastructure.

Impact of ONCOBUDDY: Reduces missed treatments, lowers travel cost, fewer treatment dropouts, decongested tertiary cancer care centers, improved rural access and safer continuity of care with better patient adherence and outcomes.

Full Name:

Rajarajan

Name of the Institution:

Madurai Medical College, Madurai

State:

Tamil Nadu

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

Decentralisation is the key.

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.):

The Real Barriers in India's Cancer Care

When a family faces a cancer diagnosis, the challenges go far beyond medicine.

Care Concentration: Advanced oncology centers are clustered in tier-1 cities. Rural patients must travel hundreds of kilometers, leading to massive displacement, physical exhaustion, and lost wages.

Financial Ruin: Out-of-pocket costs are devastating. Even with public schemes, indirect expenses like travel and lodging force families into deep debt or cause them to abandon treatment.

Late Detection: A lack of screening at primary health centers means most cases are diagnosed at stage III or IV, when treatment is costly and aggressive.

Fragmented System: Families must navigate complex transitions from local labs to distant tertiary centers entirely on their own.

A Collaborative Roadmap

To fix this, providers, caregivers, and policymakers must work together:

Connect Networks: Establish "hub-and-spoke" models linking major cancer institutes with district hospitals. Local doctors can run chemotherapy via tele-oncology guidance from central experts.

Empower Caregivers: Hospitals should provide practical training on managing side effects, central lines, and oral medications at home, supported by regional-language helplines.

Decentralize Policy: Update state insurance schemes to fund local daycare centers and reimburse home-based palliative care.

The Case for Rural Home-Based Care

- Keeping a rural patient tied to a city hospital bed is often unsustainable. Moving low-risk care to the home is a necessity.
- **Dignity:** Terminal patients experience a higher quality of life at home with family rather than in crowded, distant charity wards.
- **Economic Relief:** Shifting routine blood work, injections, and symptom management to the home eliminates crushing travel and lodging costs.
- **Safety:** Staying home protects immunocompromised patients from drug-resistant hospital infections.
- By training local community nurses and setting clear "red-flag" triggers for hospital transfers, we can deliver safe, compassionate care directly to rural doorsteps.

Full Name:

Ananda NS

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):

To develop a safe and accessible decentralized cancer care model that improves treatment accessibility, reduces financial toxicity, and enhances continuity of care for patients in rural and resource-limited settings.

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:

Present Logistical challenges for cancer care:

- Oncology patients need regular hospital visits during diagnosis, treatment and post treatment follow up. This causes significant distress to the accompanying attender and the distressed patient. Since apex cancer centre are concentrated in metros, which makes patient travel long for the treatment.
- Most public hospitals cover the treatment expenses but out-pocket expenses like travel, food, stay and the daily wage lost to the attender causes significant problem.
- As patients comes back for the minor ailment/Chemotherapy, hospitals become crowded, which decreases accessibility for the new registration patients.

Bringing Cancer care Closer to homes:

This doesn't necessarily mean home-based treatment. Except for the especially needy one, it's impractical for home visits for all. Instead, strengthening nearby healthcare facilities can significantly reduce burden on patients.

The recently implemented hub-and-spoke model initiative by Karnataka government where diagnosis and treatment planning are done at tertiary centres (hubs), while chemotherapy and immunotherapy are administered at district hospitals (spokes). For effective implementation Nursing staff and General physicians to be trained so that minor ailments like repeated ascitic tapping, pleural tapping, vomiting, fatigue, fever can be treated locally. Low-risk chemotherapy, maintenance therapy, hormonal therapy, and selected immunotherapy regimens can be safely administered at spoke centres under tertiary supervision, while high-risk regimens should remain at apex centres.

Emergency Systems to be kept ready for immediate assistance and transfer if any complications to hub centre. This approach builds patient trust and improves acceptance of spokes centre.

Private sectors can also follow model by getting affiliated to local nursing homes, deploy trained Nurses, use Tele-Medicine for consultations for minor ailments and low risk chemotherapy. This model should be encouraged by social schemes by covering their cost. Strong coordination between hub and spoke centres is key to delivering equitable, accessible, and quality cancer care closer to patient's homes while reducing financial toxicity.

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):**Challenges/ problem statement:**

Majority of cancer treatment happens in tertiary centers, some in and 2nd tier cities, none at rural levels. Burden of cancer care falls on Regional cancer centers and big corporates, trust hospitals leading to bed shortages.

Long distances travels from far places, accommodation cost for cancer treatment leads to disruption of occupation, adds significantly to cost in general.

Lack of trained doctors, nurses, support staff trained in oncology outside metro cities is a major challenge in providing home care.

Lack of initiatives to provide medical care at home in general (including the fear, lack guidelines and regulations)

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:

To bring cancer care closer to patient's home. multistructured initiatives are necessary

1) Regional cancer centers needs to take role leadership, research, innovation handling challenging cases, and planning of treatment of complex cases.

2) Each district hospital must have oncology unit with trained oncology staff to handle the bulk of cancer cases in the country carry out chemotherapy/ Immunotherapy.

From District oncology center, a mobile unit of trained doctor, nurses visits taluk/tehsils once a week or as per planned schedule to administer chemotherapies at smaller hospitals in rural areas.

- Patients visit schedule, pre investigations, planning to be done before hand through online app-based platforms.
- Alternately tele oncology needs to be enabled, where treatment plan is made, pre chemo investigations, general status, concerns, tolerance is assessed are addressed and does are fixed, schedule is made. Patient receives infusion by trained nurse in authorized tehsils/ taluk hospital (Govt/private) near their home, with partnership of District cancer center.
- Toxicities, tolerances can be kept on watch in app-based platforms where patients can notify their symptoms.

3) Developing dedicated teams for subcutaneous anticancer therapy delivery at patient's home (For Example Phesgo), to limit hospital visits.

4) Development / Research of oral chemotherapy/targeted therapy option and newer S/C formulations to enhance the number of options available for home based oncological care.

5) Regimens of metronomic oral regimen efficacy to be validated with multiple studies to provide newer home-based cancer care options.

6) Palliative care drive - Training of nurses in palliative care in large numbers. Forming Palliative care teams at Rural/district hospitals enabling home visits to provide palliative care at home

7) NGOs, private players encouraged to form palliative care teams/home care teams.

8) Advocacy for guidelines: Regulators bodies should be sensitized regarding the changing landscape of Indian healthcare, need for regulations, guidelines to help healthcare professionals to delivery care at home.

Full Name:

Mahathi G

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):

I write this article after days of pondering what the barriers are to cancer care today. In an illness like cancer alongside drug toxicity, there is pressing issue of financial toxicity.

After few unbiased curb side conversations with patients and attenders, I uncovered few intricacies.

1. The outcome studies in cancer are always ongoing, and no one can dart-in on which patient beats the median OS and the natural history of that cancer. Consequently, in oncology services, caregivers always wonder how much and how long they need to spend for a cancer for which there is no hope or data. This is the hidden financial toxicity - it is the difference between financial burden and financial capacity. Our efforts should not be only to reduce financial burden but also increase financial capacity.

2. While Ayushman Bharat has improved financial protection for the poorest, it leaves critical gaps in diagnostics, continuity of care, and access to timely treatment - particularly affecting the middle class, that straddles between the financial burden of corporate setups and long waiting hours at a government hospital. The writer and the readers of this article would likely to belong to the “missing middle”

3. The focus is repeatedly about only reducing the hospitalization cost of the poor as the current Indian system systematically throws a blind eye to the post hospital domiciliary care and timely care in the hospital,

It requires sustained, streamlined effort to reach these goals, so teams need to be focussed but not myopic.

The objective of this article to bring out real, revised and researched ideas that could penetrate policymakers and healthcare providers alike.

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.):

Establishment of hospitals run on public - private partnerships with nominal fee across diagnostics and therapeutics zonally within all states. These hospitals should ensure simplified and computerised interdepartmental referrals; certified, quality-controlled laboratory services; expanded Radiotherapy services to reduce travel burden; and collaboration with insurance companies to formulate insurance policies with tiers, uncomplicated bylaws, multiple cost sharing options.

Additional investigations that do not add value but incur cost - just to ensure no gaps in management as “directed” by Western guidelines without the same financial ecosystem as ours leads to overutilization of resources. A value-based care model helps judicious allocations of interventions and investigations.

Dedicated housing for those needing to travel to tertiary centres away from home. Establishment of vocational training and new jobs to increase financial capacity in aims to minimise financial toxicity.

Quoting the KAP model - doctors should improve knowledge and attitude but not hold patients to a lecture with a pamphlet of do's and don'ts. Electronic media, healthcare awareness camps and infographics near parks, hotels and traffic signals improve the subconscious.

Selecting a socially and culturally accepted strong leader - an actor, politician to endorse and promote healthcare delivery and access is crucial. What drives decisions is not logic, its emotion and need. The farther we run from this reality, the more shortsighted we will get in policymaking.

The blue-print for home-based cancer care in rural India could be inspired from ASCO's HaH framework, Donabedian model, patient-centred care principles, and the Chronic Care Model. The feasibility has been demonstrated by Tata Memorial Hospital.

Out-of-hospital management might entail legal implications. Legal experts should be inducted into such plans so that they are free of illegal mishaps. A close oversight committee including lawyers, social workers, doctors, nurses and administrators, with patient and families is the “dream-team” that will ensure effective participation and nullify any hurdles in our plan.

A good start can be with oral medications - TKIs, OMCT; subcutaneous bortezomib, leuprolide and intramuscular fulvestrant. Stoma care clinics and NG tube troubleshooting can be transferred at home after deploying trained nurses. Thermosensitive intravenous drugs holding kits administered at local centres under trained nurses could make a headway for IV medications.

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):

Delivering subcutaneous therapies or standard hormonal injections doesn't require a high-tech tertiary ward.

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.):

Dragging a patient all the way from a remote district into a major hub like Chennai or Madurai just for a routine maintenance infusion is honestly a massive failure of our healthcare system. The barriers on the ground here are just brutal. Families routinely end up completely financially wiped out. Not necessarily from the drug costs, but from the sheer expense of travel and the daily wages they lose sitting in our waiting rooms.

But pushing this care closer to their actual doorsteps takes a very deliberate roadmap. We need a tight loop between our primary oncology teams and certified regional nursing networks. Providers have to draft incredibly strict safety protocols to map out exactly who qualifies for decentralized care. You only shift patients who are totally stable and on low-risk regimens. Policy makers really need to step up and clear the regulatory nightmare around transporting cytotoxic drugs safely across districts. And local caregivers must be explicitly trained to catch early infusion reactions before they escalate.

There is an undeniably strong case for village satellite models or home-based care (Asha, VHC healthcare workers in PHCs) in rural Tamil Nadu. Delivering subcutaneous therapies or standard hormonal injections doesn't require a high-tech tertiary ward. If we can safely offload these stable maintenance cases to local community centers, it completely changes the dynamic. It spares the family from catastrophic out-of-pocket spending on constant travel. And honestly, it frees up our packed tertiary beds for the complex GI or breast resections that actually require our specialized surgical infrastructure. We just have to stop forcing rural patients to adapt to our centralized hubs when the medicine can safely go to them.

Full Name:

Rishika Goyal

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):
Objective

The aim is to alleviate the financial strain of travel, interruptions in treatment, and stress on caregivers by safely delegating certain chemotherapy and immunotherapy services, simultaneously ensuring oversight by the specialist and also maintaining the treatment quality.

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.):

Existing Gaps In India

Cancer treatment is predominantly hub based and urban centred with most chemotherapy and immunotherapy services located in major apex cancer centers. Patients from rural and semi-urban areas often have to travel long distances for routine treatments and follow-ups leading to "travel toxicity," which encompasses cost of travelling, loss of wages, stress to caregiver, accommodation expenses, and treatment delays. Current hub and spoke model of decentralisation often lack clear guidelines on which patients can safely receive treatment closer to home

Solutions

I propose the model based on a simple principle: "First Cycle at the Hub, Remaining Care Near Home."

All patients will begin their first treatment cycle at a leading tertiary cancer center where under specialist supervision, patient's diagnosis, treatment planning, and the initial cycle of chemotherapy or immunotherapy will be conducted. This initial cycle acts as a Safety Gate, allowing for the detection of infusion reactions, toxicity, performance status, and treatment tolerance.

Patients are then categorized using Triage System:

Red: Patients with complex or high-risk conditions continue their treatment at major centers.

Yellow: A hybrid care model with periodic specialist evaluations.

Green: Stable patients on predefined low-risk regimens receive treatment at accredited district infusion centers connected to the hub via tele-oncology support.

Home-based services concentrate on supportive care, symptom monitoring, blood collection, PICC line care, treatment reminders, and palliative care.

By ensuring that only complex cases travel to cancer centers while routine care is provided closer to patients, this model can enhance adherence to treatment, reduce travel toxicity, and increase access to quality oncology care in rural India without compromising safety.

Full Name:

Dr. Chirag Gajera

Name of the Institution:

JNMC, Belagavi

State:

Karnataka

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

To develop safe, accessible, and patient-centered models for delivering chemotherapy and immunotherapy closer to patient's homes by strengthening healthcare networks, reducing treatment-related barriers, and improving equity in cancer care delivery, especially in rural and underserved areas of 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.):

Cancer care in India faces multiple barriers including long travel distances, limited availability of oncology centers, financial burden, loss of income, inadequate supportive care facilities, treatment delays, and shortage of trained oncology professionals in rural regions. These challenges affect treatment adherence and overall outcomes.

A home- and community-based cancer care model can be developed through collaboration between oncologists, local hospitals, trained nurses, patients, caregivers, policymakers, and technology providers. A structured roadmap should include patient selection criteria, standardized treatment protocols, trained home-care teams, emergency referral pathways, tele-oncology support, medication safety monitoring, and regulatory frameworks for drug administration outside hospitals.

Low-risk chemotherapy regimens, maintenance therapies, selected immunotherapy infusions, supportive treatments, and follow-up care can be considered for decentralized delivery after appropriate evaluation. Community oncology centers linked with tertiary cancer hospitals can provide supervision, training, and quality assurance.

In rural India, such models can reduce travel burden, improve continuity of care, and increase treatment completion rates. Digital health platforms, electronic medical records, and remote monitoring can support communication between patients and specialists.

Successful implementation requires investment in healthcare workforce training, infrastructure development, insurance support, and clear safety guidelines. Bringing cancer therapy closer to patient's homes can create a more equitable, affordable, and patient-friendly cancer care system.

Full Name:

Pavitra Hegde

Name of the Institution:

Regional Cancer Centre, Trivandrum

State:

Kerala

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

Not every cancer treatment should be given at home, but selected low-risk chemotherapy, immunotherapy, oral anticancer therapy, supportive care and monitoring can be shifted closer to patients through trained district/day-care units and supervised home-care teams.

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.):

Problems/Gaps in India

Patient barriers

- Long travel to tertiary cancer centres
- Loss of wages for patient and caregiver
- Cost of food, stay, transport

System barriers

- Cancer specialists concentrated in cities
- Limited chemo-trained nurses in rural areas
- Poor cold-chain logistics for biologics/immunotherapy
- Lack of emergency preparedness for infusion reactions
- Fragmented records between hospitals
- No standard legal framework for home chemo delivery

Safety barriers

- Risk of hypersensitivity, extravasation, neutropenic sepsis
- Need for pre-chemo CBC/LFT/RFT checks
- Cytotoxic drug handling and biomedical waste disposal

Solution Roadmap: The solution formed below focuses on

1. Hub-and-spoke model;
 2. AI apps to bridge the gap;
 3. Role of ROCHE in bridging the gap- specifically in patients of metastatic Her2 positive ca breast on palliative-intent treatment
- A. Forming regional cancer centres in every state, as a tertiary cancer centre forms the “Hub” and are responsible for:
- Diagnosis, staging, treatment planning
 - First cycle of chemotherapy/immunotherapy
 - Toxicity risk stratification
 - Prescription and dose modification
 - Digital treatment protocol generation
 - Emergency oncology backup
- B. District cancer/day-care unit which form “Spoke” and are responsible for:
- Subsequent cycles of low-risk regimens
 - Maintenance immunotherapy
 - Oral chemotherapy monitoring
 - Hydration, antiemetics, growth factors
 - Blood tests and toxicity screening
- C. Home-care oncology team consisting of trained nurses and ASHA workers to provide “Last-mile delivery” suitable for:
- Oral/ subcutaneous anticancer drug monitoring
 - PICC/port care
 - Blood sample collection
 - Symptom monitoring
 - Palliative care
 - Selected injections: G-CSF, denosumab, octreotide, hormonal therapy

Formation of new apps:

1) OncoCare Delivery App: which contains

Patient's EMR with all details including diagnosis, staging, molecular profiling, treating physician and their notes about the patient

Latest prescription and latest labs

Drug cold-chain tracking

Nurse checklist before administration

Emergency SOS button

Toxicity chatbot in local language

Auto-alert to local nurse along with main oncologist for fever, diarrhea, dyspnea, jaundice, rash

Auto-generation of next lab and cycle date

2) OncoBNB: (similar to airbnb app): many of the patients spend huge amount of money buying medical equipment such as oxygen concentrators, Wheelchairs, Air mattresses, Suction machines, CPAP/BiPAP devices, and portable infusion pumps. Instead of buying them, it can be rented on sos basis from the owner.

ROCHE can support the ecosystem by integrating MediBnB into its patient-navigation platform, funding equipment banks through CSR initiatives, and using data analytics to predict regional equipment needs and optimize distribution.

Roche HER2 HomeConnect: Bringing Immunotherapy and Targeted Therapy Closer to Home in Metastatic Breast Cancer

Metastatic HER2-positive breast cancer has increasingly become a chronic disease, with many patients remaining on HER2-directed therapy for years. However, repeated travel to tertiary cancer centers for every treatment cycle creates significant financial, physical, and emotional burdens, particularly for patients from rural and semi-urban India.

ROCHE can address this challenge by establishing a hub-and-spoke care network, where diagnosis, treatment initiation, and management of complex toxicities occur at tertiary oncology centers, while maintenance therapy is delivered closer to patients' homes through accredited district infusion centers.

A key enabler of this model is Roche's subcutaneous HER2-targeted therapies, particularly fixed-dose trastuzumab and pertuzumab combinations that can be administered within minutes compared to traditional intravenous infusions. After successful completion of initial supervised cycles at the hub center, eligible patients can receive subsequent maintenance doses at certified community oncology units under standardized protocols. This reduces travel requirements, shortens treatment times, and frees tertiary centers to focus on more complex cases.

Roche can further support decentralization through a digital patient-navigation platform, functioning like a healthcare version of Swiggy or Uber. Patients can upload laboratory results, receive treatment reminders, schedule local appointments, and report symptoms through a mobile application available in regional languages. Artificial intelligence algorithms can identify early warning signs such as dyspnea, diarrhea, rash, or fatigue and automatically alert oncology teams, enabling prompt intervention before complications require hospitalization.

Cardiac monitoring, an essential component of HER2-directed therapy, can also be decentralized. Roche can create a network of partner diagnostic centers where echocardiograms are performed locally and reviewed centrally through cloud-based platforms. Combined with tele-oncology consultations, this allows oncologists to make treatment decisions remotely while maintaining the same safety standards expected at tertiary cancer centers. Patients thus receive specialist oversight without the need for frequent long-distance travel.

Finally, Roche can integrate financial navigation and home-support services into the ecosystem. The platform can automatically identify eligibility for government insurance schemes, NGO grants, and Roche patient-assistance programs while connecting patients with home nurses, physiotherapists, and palliative-care providers. Through this comprehensive model, Roche transitions from being solely a drug manufacturer to becoming an orchestrator of decentralized cancer care, ensuring that effective HER2-targeted therapies reach patients safely, affordably, and as close to home as possible.
