Dr Ravi Kannan Dr Giles Davies Dr Ritesh Tapkire Miss Dharshana R.

On behalf of Cachar Cancer Hospital and Research Centre Meherpur, Silchar, Assam India – 788015

Enquires to: <u>dharshana.r@cacharcancerhospital.org</u>

## Index

- 1. Problem Statement
- 2. Cachar Cancer Hospital and Research Centre
- 3. The Global burden of Breast Cancer
- 4. Problem Statement in Context
- 5. Systems thinking and National Context
- 6. Local Context of Cancer Care at Cachar Cancer Centre
- 7. Stakeholder Mapping
- 8. Drivers of Poor Outcomes in the system
- 9. Reimagining the Cachar Cancer Centre Problem Statement
- 10 . Reframing the Cachar Hospital Problem
- 11 . Funding and Support for Cachar Hospital Satellite Hospital Programme
- 12 . Satellite Hospitals / Day Care Centres and PEP Centres
- 13 . Satellite Hospitals
- 14 . Day Care Clinics
- 15 . PEP (Primary Prevention, Early Detection, Palliation) Centres
- 16 . Measuring Success
- 17 . PROMS programme
- 18 . Philanthropy impact at patient care level
- 19 . Donation link
- 20 . References

Appendix 1 Stakeholder Map Expanded view

## 1. Problem Statement

The Incidence of Breast Cancer in India is increasing and despite transformational drug and therapy developments in Cancer Screening and treatments globally, access to high quality cancer care is not universal and as a result much of the population are denied lifesaving therapies. The result is the economic, social, and societal burden of cancer is increasing.

How might we improve the affordability, access, and outcomes of Cancer care in Cachar Cancer Centre, ensuring equitable healthcare outcomes for all patients irrespective of their economic status?

## 2. Cachar Cancer Hospital and Research Centre

Cachar Cancer Hospital and Research Centre (Cachar Hospital) is in Silchar, in Assam in India. Cachar Cancer Hospital was founded in 1996 by the Cachar Cancer Hospital Society a collection of community representatives formed in 1992. The society had three aims. Firstly, to increase awareness, prevention, and early detection of cancer. Secondly to establish a fully-fledged cancer centre and thirdly to set up a Cancer Research Centre. With land allocated from Government of Assam the Hospital has grown since 2007 under the leadership of Dr Ravi Kannan, a surgical oncologist who left his practice in Chennai to devote himself to the development of the Hospital. The Hospital currently has 142 beds, 450 staff, sees 5000 new patients per annum, 25000 follow up visits per annum, performs 800 major operation per annum, 2000 minor procedures and 2600 endoscopy procedures per annum. The Hospital, location and examples of the daily care are shown in Figures 1-3.



b.



Figure 1: From top to bottom Cachar Cancer Hospital Silchar, Assam State India in a. 2007 and b. 2017



Figure 2: Silchar Assam Sate India. Source google maps 2024



Fig.3 Clockwise from left: Outreach worker in community, food preparation by relatives of patients onsite in Cachar Hospital, Dr Ravi Kannan Director, Hospital Staff photo, registration booth for patients Cachar Hospital

#### 3. The Global burden of Breast Cancer

The global incidence of Cancer is increasing with female breast cancer now surpassing lung cancer as the most commonly diagnosed cancer (Sung et al., 2021). Global cancer incidence and mortality is rising as we face an ageing population and risk factors for cancer which are to a large extend dependent of socioeconomic factors: for example, in high development index (HDI explained, see Fig 4.) countries, higher breast cancer incidence rates reflect hormonal and reproductive risk factors, genetic mutations and adoption of screening programmes (Brinton et al., 2017). However, breast cancer incidence rates are also climbing in high income Asian Countries and Africa (Heer et al., 2020). There is also a upward trend percentage of breast cancer diagnosed in pre-menopausal (and therefore younger) women in low and middle income countries (Sung et al., 2021). This may reflect in part acquisition of "western" risk factors (obesity, delayed child rearing, lack of exercise) (Porter, 2008). Despite the higher incidence rates in high HDI countries, mortality is significantly worse (15/100,000 versus 12.8/100,000) worse overall in low HDI countries (Fig 5.). If we focus on India which is the subject of this project proposal, then sadly it performs badly with a 5yr overall survival rate amongst the lowest in the world for breast (and cervical) cancer (Fig.6).



Fig.4 (A) The 4-Tier Human Development Index (HDI) and (B) 20 Areas of the World. The sizes of the respective populations are included in the legend. Source: United Nations Procurement Division/United Nations Development Program. Reproduced from Sung et al. A. Cancer.Clin. (2021);71:209–249



Fig 5. Incidence and Mortality Age-Standardized Rates in High/Very High Human Development Index (HDI) Countries Versus Low/Medium HDI Countries Among (A) Men and (B) Women in 2020. The 15 most common cancers in the world (W) are shown in descending order of the overall age-standardized rate for both sexes combined. Source: GLOBOCAN 2020. Reproduced from Sung et al. A. Cancer.Clin. (2021);71:209–249



Fig 6. Global distribution of age-standardised 5-year net survival (%) for women diagnosed aged 15–99 years with (A) breast cancer or (B) cervical cancer during 2005–09, by continent and country. Reproduced Ginsburg et al. Lancet (2017):389: 847-860.

## 4. Problem Statement in Context

Systemic change is needed in global cancer care because of deep rooted, persistent, and connected problems at a global, government, business, and societal level. There are fundamental structural mismatches between global stakeholders in cancer care. At a global level key stakeholders are poorly connected and aligned due to national variation in healthcare models. Problems we encounter are often perceived as "wicked" where there is considerable uncertainty, no obvious immediate solution and they are often unique (Grint, 2022). We will discuss how the Indian healthcare system has changed over the past 5 years in Section 6 but from a systems theory perspective, the combination of the prevalence of these "wicked" problems, challenges Global Healthcare leaders to redefine the boundaries of systems. Our inherent tendency as clinician leaders to only view the problems right in front of us limits our ability to integrate care by building relationships or partnerships. We sometimes do not view patients as partners in healthcare at all. We tend to address issues in a "firefighting capacity" where or attention zooms in to a local level. Defining and identifying boundaries of complex healthcare systems is hard (particularly in systems such as the Indian Healthcare System) and can be compounded where system (and organisational) purpose can not only be different but sometimes in competition.

If we want to make meaningful improvement in Breast Cancer outcomes in India, then mapping the healthcare system at a global or national level will only provide a framework for discussion. This is illustrated in Fig.7 with a (incomplete) regional healthcare stakeholder map.



Fig.7 Regional Stakeholder Power / Influence Map Assam State India

To effect change we need to zoom into a local level to provide context and truly understand where the key stakeholder relationships, power, and influence lie. Defining and identifying system boundaries at a *local level* is a useful exercise here as it provides context, identifies reciprocal relationships (and often power and influence) and ensures that marginal stakeholders are not excluded from the system. This is particularly relevant when Private and Public Services are prevalent in the overall system where vested interests (for profit organisations) can squeeze out public services.

In this project document I will focus on Cachar Cancer Hospital. This Hospital is a useful model as it reflects many of the challenges of Cancer care in Low and Medium HDI Countries such as large geography (limiting access), poverty, education, transport, and digital literacy challenges. I will use considerations of complexity thinking, system design, boundaries, stakeholder maps, power and interest maps and the iceberg model to define the landscape and use these models to explore the causal and feedback loops, flows of resource and power dynamics that might be driving the poor outcomes in the system and identify leverage points for system intervention.

With reference to what is currently happening on the ground and the limitations of the current models of funding and care delivery I will attempt to reframe and reimagine the problem, and with reference to the iterative journey, identify and prioritise strategic options for change.

The project content are original reflections developed from data and information provided by (via email communications and conversations) Dr Ravi Kannan (Director), Dr Ritesh Tapkire (Deputy Director) and Dharshana (Head of Resource Mobilisation). All financial information has provided by the Hospital and is confidential.

#### 5. Systems thinking and National Context

Systems thinking in healthcare has evolved to meet these types of challenges from a reductionist view where systems are broken down into constituent parts, analysed in isolation and recombined, to a synthesis or holistic approach where we view the constituent elements as a whole and we focus on relations between elements and most importantly context. The traditional engineering definition of human centred design as noted by Giacomin (Giacomin, 2014)with "items" and "service/user" has evolved to incorporate human behaviours and empathy. Empathy is a key aspect of social innovation projects and involves focusing on what patient feel, which can reveal new and potentially disruptive solutions Human centred design thinking has evolved to solve complex problems from a user's perspective, so called user centred design (UCD). This UCD has

in turn evolved to be "co-design" ("Co-creation and the new landscapes of design," n.d.). This codesign or "collective creativity" is a relevant model to consider for the healthcare system in India as the ambiguity, chaotic and turbulent nature of the big questions like "How do we improve breast cancer care in India?" are typical of the "fuzzy" front end of the design process Sanders describes (see below) which requires input from a wide range of stakeholders.



Front end of design process, from Sanders et al. (March 2008) Co-Design. Vol. 4. No.1. 5-18.

Improving global health is a complex and urgent challenge. When considering a big issue like Breast Cancer Care in India we are dealing with complexity. The Indian Healthcare system should be considered as a complex adaptive system where conventional predictable interventions may not work. Interventions may be simple, but the implementation is often *complex*, data will be imperfect, and uncertainty is omnipresent. If we are to study this healthcare system, then we must consider interactions between interventions and context and have an emergent view towards systemic change. There will be unknowns that become known which then provide a clearer path for change. Sensing will be a key aspect and I have considered upstream thinking, community-based solutions and shifting towards a generative framing of problems in reframing the problems identified.

Leaders of healthcare systems leaders need to be boundary spanners, constantly sense checking and sense giving. Considering boundaries as a foundation in this essay is critical as the boundaries of healthcare are often constantly shifting. Two specific examples of boundary flux in the Indian healthcare System are firstly the radical uncertainty in resource flows that organisations like Cachar Cancer Hospital faces from political and economic turbulence and secondly the exponential rise in digital technology and Artificial Intelligence (AI). Dealing with the first example, the Indian Healthcare System is often leveraged for political capital by political leaders. A good example is a scheme to increase healthcare access introduced in 2017 discussed here. India spends 3% of its GDP on Health ("India's Poverty Profile," n.d.). "Ayushman Bharat " is a flagship healthcare system of the Government of India launched by National Health Policy in 2017 with a vision of providing Universal Health Coverage (UHC) ("Ayushman Bharat - National Health Protection Mission] National Portal of India," n.d.). The initiative is to tie in the Sustainable Development Goal 3.8 ("SDG Target 3.8 Achieve universal health coverage (UHC)," n.d.)with the underlying commitment within to "leave no one behind".

The scheme has two facets, Health and Wellness Centres (HWCs) and Pradhan Mantri Arogya Yojana (PM-JAY), a health assurance scheme aiming to provide health cover of Rs.5 laks (around £5000) per family per year for secondary and tertiary care to over 12 crores (120 million) poor and vulnerable families (55 crore or 550 million) beneficiaries - the bottom 40% of the Indian Population. In this context poverty is assessed on a deprivation and occupational criteria of Socio-Economic Caste Census 2011 (SECC 2011). The PM-JAY system is fully funded by government with cost of implementation share between Central and State Governments. Benefits are portable across the country. There is an aim to create 150,000 HWCs and their aim is to deliver healthcare locally expanding universal access and equity. Widespread media and political coverage of this scheme, with *limited* legislative and budgetary exposure have left some commentators questioning the motivations behind these healthcare initiatives in India by the ruling Bharatiya Janata Party (BJP) (Kalita and Croke, 2023).

The second example is the exponential rise in digital technology solutions in particular AI which has resulted in patients accessing care differently. Priorities for investment in digital solutions have followed this accordingly with a large increase in investment in digital solutions and access for patients in India ("India has among the highest adoptions of digital technologies by health and human services organizations," n.d.) as well as here in the UK ("Digital transformation in the NHS," n.d.). However, these initiatives may not adequately consider marginalised communities in India. 80% of India's poor (<\$2.15/day World Bank data) live in rural settings. Considering local context and in particular boundaries is critical as there is real risk of marginalised communities in Assam state being excluded as stakeholders in this system, losing their voice to influence systems change.

## 6. Local Context of Cancer Care at Cachar Cancer Centre

Cachar is defined by the local community. 80% of the patients are daily wage earners, 80% of them have families with over 5 family members and 59% earn Rs.10000 (£95) or less per month. Importantly 45% live in "kaccha" houses (mud and straw construction) and employment is predominantly tea garden and agricultural during the cultivating season (4-5 months) with masonry, carpentry, and other skilled labour in the other months. Patients routinely travel 50-150km to access the Hospital and the nearest other major cancer centre is in Guwahati some 300km and potentially a 20hr bus ride away. Tobacco use is prevalent and so head and neck and oral cancer, breast cancer and lung cancer feature heavily and commonly present locally advanced or metastatic at presentation.

The Cachar model of care is one of low-cost to patient services, no dual pricing for those who can and who cannot afford care, and a novel model of employing and paying relatives (and patients) a daily wage to work onsite during treatment in catering, food preparation, gardening, plumbing, electrical contracting, and construction. The challenges are the high disease burden, late presentation, inadequate resources, lack of healthcare workers, poverty, and challenging geography.

The Hospital operates at a loss relying heavily on credit, sporadic government grants often seen a political "gestures" ("PM initiative for North East India.pdf," n.d.) and donations. High staffing costs and running costs are required to maintain and staff suboptimal equipment and infrastructure. The 2022 Financial reports are shown in Figure 8.

Revenue £2.25M Go Expenditure £2.86M Do Shortfall £606K Ho Ph			vernment Insurance £1.37M nations £194K spital Charges £457K armacy £228K				37M	Salaries £ Running e Patient C Energy big	1.49№ expens are £2 g cost	1 ses £1. 28K	.14M			
	Expen	diture					]			Income				
	INR (in l	Milliion)	In U (In thou (Exch rate: I 0.0	ISD Isands) INR 1 = USD 12)	In 0 (In tho (Exch rate: 0.0	GBP usands) I INR = GBP 095)			INR (in	Crores)	In U (In thou (Exch rate: 0.0	JSD Jsands) INR 1 = USD 12)	In G (In thou (Exch rate: 0.00	iBP Jsands) I INR = GB 095)
	Monthly	Annually	Monthly	Annually	Monthly	Annually			Monthly	Annually	Monthly	Annually	Monthly	Annuall
alary	13	156	156	1872	123.9	1486.8	Hospital charg	es (bed charges, etc)	4	48	48.2	578.4	38.1	457
unning expenses lectricity, fuel expenses (for community litiatives, the generator etc.), Maintenance nd repair, Maintenance and repair canteen	10	120	120.4	1444 8	95.3	1143.6	Pharmacy		2	24	24.09	289.08	19.07	228
a repair, Maintenance and repair, canceerry	10	120	120.4	1444.0	33.3	1145.0	Donations, Co	rporate Social		24	24.05	205.00	15.07	220
atient Care	2	24	24.09	289.08	19.07	228.84	responsibility		1.7	20.4	20.48	245.76	16.2	19
	25	200	200.40	2005.00	220.27	2050.24	Schemes		12	144	144.57	1734.84	114.4	137
rai	25	300	300.49	3605.88	238.27	2859.24	Total		19.7	236.4	237.34	2848.08	18/.//	2253
	INR (in	Milliion)	In U	ISD	In	GBP								
Excess of expenditure over income	Monthly	Annually	Monthly	Annually	Monthly	Annually								

Fig.8 Financial Reports of Cachar Cancer Hospital 2022

## 7. Stakeholder Mapping

The Cancer Cancer Hospital and Research Centre and its key stakeholders are show in Fig. 9 (overview) and Fig.10 (expanded).



Fig. 9 Stakeholder Map for Cachar Cancer Hospital and Research Centre

When reflecting on this map, I have several observations and I have chosen 3 to discuss further. Firstly, the Hospital is very reliant on three individuals who provide inspirational leadership but inevitably become dragged into daily firefighting to stop the Hospital from grinding to a halt. There is little prediction or sensing of demand and little distributed leadership. This command-and-control leadership is needed in extreme circumstances, but this can create paralysis and a lack of opportunity for planning and strategy. An example of this is applications for government grants which are laborious and done by a few individuals.



Fig.10 Expanded view of Key Stakeholder Interactions Cachar Cancer Centre

Secondly, there is a large cohort of staff that is required due to the large numbers of patients being seen, but lack of automation and modern equipment and the high and expensive running and maintenance costs (I am told) fuel costs are the real drivers of these feedback loops.

Secondly the flow of resources is completely unpredictable. Much of the care is paid for up front and then claimed back. Government reimbursement and actual costs leave a gap covered by the Hospital. Chemotherapy is paid up front which affects cashflow and this limits investment in staff, infrastructure, and equipment. The Transaction Management System (TMS) where claims for care are submitted is cumbersome, time consuming and queries (48 hr window for response then claim is cancelled), disputes and delays means rejected claims are common. Opaque authority response times create a lack of accountability.

A final observation is there are many fragmented pathways with big gaps in staff capacity in pathology, medical oncology, and anaesthetics.

Developing some of these relationships further it is possible to unpack and surface some of the key drivers in the system as shown in Fig.12.



## 8. Drivers of Poor Outcomes in the system

An Iceberg Model is also helpful here to stratify where in this stakeholder interactions, forces and therefore system we can identify causal loops that are drivers of inefficiency or opportunities to reframe and reimagine the Cachar System. The Iceberg model is shown in Fig 11. and immediately it is clear that many of the drivers are fundamental elements – lifestyle such as smoking, poor quality

and expensive transport and long distances to travel. If a patient faces a choice – cancer treatment with no wage (resulting in no food for family) or no cancer treatment but working until they cannot, they will choose the latter. An example of how this has been reframed is the daily wage model where relatives (and even patients) can earn daily wages when on site in masonry, kitchens, gardening, electrical repair etc. Education provision on site for children is also being developed.

# Context of the problem – The Iceberg Model



Fig 11. Iceberg Model of Cancer Care at Cachar Cancer Hospital

## 9. Reimagining the Cachar Cancer Centre Problem Statement

The vision from Dr Kannan is to take this centralised cancer service and develop a hub and spoke model of care. To consider isolated improvements in equipment, software systems or short-term funding for staffing is intervening too near to the surface of the problem, just under the "tip of the iceberg".

More surgical stapling devices, more radiotherapy capacity, more nasogastric tubes, and airways are simply trying to influence the turbulent patterns that come from structural misalignment, but in turn from fundamental root causes.

If we can redefine the purpose of the Hospital from a Cancer Hospital delivering chemotherapy and palliative care onsite, to a healthcare system facilitating communities to live healthier lives then a durable change is more likely. The existing Cachar Cancer Society is a perfect starting place to grow and improve community engagement, governance structures for new the community Hospitals and awareness programmes, through local community leadership. A potential model of a new system (conceived by Dr Kannan) is shown in Fig.13

More accurate invoicing to the government TMS system, higher digital literacy rates and so on, would allow more effective information exchange and governance, vital for timely Hospital reimbursement but also for delivering awareness programmes (higher leverage much further down the "iceberg"). Shifting the average stage of cancer presentation would be the holy grail of any integrated cancer service. Engaging with patients, who are the closest to the problem is vital to understand the true barriers to accessing care and poor awareness. intervention in daily wage models for patients and their relatives, skills training and accreditation for patient's relatives on site. Intentional emergence



Fig 13. Reimaging the system – a hub and spoke model of cancer care at Cachar Cancer Centre

It would seem impossible to influence macro-economics and even government frameworks and systems, so a local approach is needed, creating the foundations and knowledge for an "intentional emergence" approach. The flow of resources is a leaky funnel and a focus on creating an "opportunity" and therefore a pull factor for the new Government systems (TMS, Aahdar ID) and processes (PM-JAY) is needed. It might be the hybrid model that emerges is a local adaptation or streamlining of process, short cuts or a fast-track invoice approval service, which might make the current Government Employees in the TS System see a benefit for them.

Examples might include digital identity, data exchange systems and digital public infrastructure e.g. internet access in rural communities. These might take the form of local entrepreneurial ventures creating a catalyst for disruptive innovation, but also keeping it community led and driven. Partnerships may also play a role, and these are show as "potential partners" in Fig. 9.



## 10. Reframing the Cachar Hospital Problem

# 11. Funding and Support for Cachar Hospital Satellite Hospital

Funding Target £300,000 via Government Grant Application and Philanthropy

Satellite Clinics							
Expense/Income Description	Type of cost	Total Amount (In Rs)	Total Amount (In \$)	Frequency of Cost			
Building Construction (eventually planned 5000 (3+ + 1+sq.ft@1500 psf.) *For the complete structure	Direct Cost	₹ 1,50,00,000.00	\$ 180,722.89	One-time in a phased manner			
Equipment	Direct Cost	₹ 92,50,000.00	\$ 111,445.78	One-time			
Tot	al	₹ 2,42,50,000.00	\$ 292,168.67				
Salary	Direct Cost	₹ 48,00,000.00	\$ 57,831.32	Annual			
Maintenance	Indirect Cost	₹ 18,00,000.00	\$ 21,686.74	Annual			
СМС	Indirect Cost	₹ 3,00,000.00	\$ 3,614.45	Annual			
Tot	al	₹ 69,00,000.00	\$ 83,132.53				

#### Oxford Centre for Global Healthcare Leadership Target £100,000

## 12. Satellite Hospitals / Day Care Centres and PEP Centres



Fig.14 Locations of upcoming Satellite Hospital 1: Dharmanagar Tripura. Pinned locations for proposed satellite clinics Haflong (Assam), I Jirbam (Manipur).

Existing small scale satellite centres: Hailakandi, Karimgani, Labac in Assam.

## 13. Satellite Hospitals

These facilities will have provision for surgery, radiation therapy, chemotherapy, preventive oncology, palliative care, home based care, research, onco-pathology and radiology.

Size: 50-70 bedded hospital with a capacity for expansion in the future

Staff: 130

- Nurses: 60
- Pathology Technicians: 8
- Radiology technicians: 4
- Anesthesia 2
- OT nurses: 10
- RT: Physicist, RSO, Radiation technologists 4
- Preventive oncology: 6 nurses
- Home care: 4
- OPD counter staff 4
- Pharmacist 4
- Surgical oncologist 2, radiation oncologist 1, medical oncologist 1, pathologist 2, prev onco MO - 1
- 1 radiologist, Anaesthestist 1, Palliative care physician 1.
- 4 social workers
- 1 psychologist
- 1 dietician
- Canteen staff 10
- GDA staff 8

#### **Facilities onsite**

- OPD consultation
- Diagnostic investigations including Ultrasound, CT scan, endoscopy, biopsy
- Surgery
- Chemo
- Radiation
- Research
- Onco-pathology
- 2 Occupational Therapist
- 1 minor OT
- 1 Endoscopy room
- 1 brachy suite
- 1 radiotherapy bunker EBRT linac/cobalt
- resource management, admin, finance
- medical social workers
- canteen

## 14. Day Care Clinics

A critical link in cancer care is reducing time and distance of travel to the nearest treatment facility. This impacts on the indirect costs of care because of expenses related to travel, boarding and lodging and very importantly, loss of daily wages; all of which are disincentives to timely detection and completion of treatment.

To circumvent this, the hospital is creating a network of Day Care Clinics catering to the needs of the population around a 20-60 km radius not needing to travel more than 2 hours for care.

The most time and travel intense aspects of cancer care are evaluation and follow up visits, palliative care, and chemotherapy all of which will be addressed through these clinics. For example, 8 cycles of chemotherapy will necessitate 25-30 hospital visits over a 6-month period in addition to hospital stay, which will be catered to by these Day Care Clinics. They will be facilities with 8-10 beds with a staff strength of 7-10.

#### Services onsite:

The services provided by the clinic will include:

- Consultations and evaluations
- Diagnostic imaging and laboratory tests
- Chemotherapy administration
- Palliative care
- Free home visits for advanced cancer patients
- Outreach and awareness

## 15. PEP (Primary Prevention, Early Detection, Palliation) Centres

Each Day Care Clinic will have 3 - 4 PEP centres attached to it, which are one-person setups that will support patient and their family's rehabilitation, and health promotion in the community.

Cancer prevention involves cessation of tobacco, areca nut and alcohol use, adequate physical exercise, appropriate diet and prompt treatment of infections and inflammations. All these lifestyle changes will also prevent cardiac diseases, strokes, obstructive lung diseases, peripheral vascular diseases, diabetes, and hypertension in addition to cancers.

Early detection needs early evaluation after onset of symptoms, and in several cases, patients tend to be asymptomatic.

Early detection of cancer will lead to diagnosis of cancer at early stages, thereby reducing treatment duration, better chances of survival, better quality of life, and an early return to normal life. It is expected that the PEP clinics will provide an opportunity for people to refer themselves nearer to their homes with minimal disruption to their daily lives.

# 16. Measuring Success

Project description		Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions
Goal	Improve access to cancer care and health promotion	Number of people who reach out for treatment	Hospital registry data	Geography and socio-economic status prevent people from accessing healthcare promptly
Purpose	Increase reach of cancer care to patients who are not	Number of patients registered in the registry	Hospital registry data	-
Outputs (Quantify)	Increased number of patients identified, patients treated, patients supported for palliative care	Number of screening programmes conducted, number of CEDAC forms collected.	Hospital registry data	Making access to diagnosis easy and facilitating treatment will increase number of people coming for screening and availing treatment.
Activities	Cancer awareness, cancer screening, cancer treatment, cancer palliation	Number of individuals screened, number of patients diagnosed with pre- cancer and other abnormalities, number of patients treated, number of patients palliated.	Hospital registry data	These activities will be accepted and availed by patients

# 17. **PROMS** programme

Using ICHOM International Consortium of Healthcare Outcomes DataSets for common cancers Patient Reported Outcome Measures (PROMS's) will be collected to benchmark and measure the quality improvement of the new Cancer Care Delivery pathway.

## 18. Philanthropy impact at patient care level

£3175 would fund

- One full course of radiation therapy
- 2 port insertions for chemotherapy
- nutrition for eight patients for a month
- Travel costs for 10 patients for a month
- home care for 20 patients for a month
- Limb prosthesis following amputation for cancer
- Cost of staplers for colorectal cancer surgery for two patients
- Training for caregivers of patients to provide support for their families

## 19. Donation link

https://www.justgiving.com/crowdfunding/Cachar?utm\_term=4ddZb7Px5



How can I use my QR code?

#### 20. References

- Ayushman Bharat National Health Protection Mission| National Portal of India [WWW Document], n.d. URL https://www.india.gov.in/spotlight/ayushman-bharat-national-health-protectionmission (accessed 2.24.24).
- Brinton, L.A., Gaudet, M.M., Gierach, G.L., 2017. Breast Cancer, in: Thun, M., Linet, M.S., Cerhan, J.R., Haiman, C.A., Schottenfeld, D. (Eds.), Cancer Epidemiology and Prevention. Oxford University Press, p. 0. https://doi.org/10.1093/oso/9780190238667.003.0045
- Co-creation and the new landscapes of design [WWW Document], n.d. https://doi.org/10.1080/15710880701875068

Digital transformation in the NHS, n.d.

- Giacomin, J., 2014. What Is Human Centred Design? Des. J. 17, 606–623. https://doi.org/10.2752/175630614X14056185480186
- Grint, K., 2022. Critical Essay: Wicked problems in the Age of Uncertainty. Hum. Relat. 75, 1518– 1532. https://doi.org/10.1177/00187267211070770
- Heer, E., Harper, A., Escandor, N., Sung, H., McCormack, V., Fidler-Benaoudia, M.M., 2020. Global burden and trends in premenopausal and postmenopausal breast cancer: a populationbased study. Lancet Glob. Health 8, e1027–e1037. https://doi.org/10.1016/S2214-109X(20)30215-1
- India has among the highest adoptions of digital technologies by health and human services organizations: EY-Imperial College London survey [WWW Document], n.d. URL https://www.ey.com/en\_in/news/2021/03/india-has-among-the-highest-adoptions-of-digital-technologies-by-health-and-human-services-organizations (accessed 2.21.24).
- India's Poverty Profile [WWW Document], n.d. . World Bank. URL https://www.worldbank.org/en/news/infographic/2016/05/27/india-s-poverty-profile (accessed 2.21.24).
- Kalita, A., Croke, K., 2023. The Politics of Health Policy Agenda Setting in India: The Case of the PMJAY Program. Health Syst. Reform 9, 2229062. https://doi.org/10.1080/23288604.2023.2229062

PM initiative for North East India.pdf, n.d.

- Porter, P., 2008. "Westernizing" Women's Risks? Breast Cancer in Lower-Income Countries. N. Engl. J. Med. 358, 213–216. https://doi.org/10.1056/NEJMp0708307
- SDG Target 3.8 Achieve universal health coverage (UHC) [WWW Document], n.d. URL https://www.who.int/data/gho/data/major-themes/universal-health-coverage-major (accessed 2.21.24).
- Sung, H., Ferlay, J., Siegel, R.L., Laversanne, M., Soerjomataram, I., Jemal, A., Bray, F., 2021. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide

for 36 Cancers in 185 Countries. CA. Cancer J. Clin. 71, 209–249. https://doi.org/10.3322/caac.21660



# Appendix 1 Expanded View of Cachar Stakeholder Map