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**Review Article**

# Models of integrative oncology care in a resource-poor setting: an overview

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## ABSTRACT

The interest in integrative oncology is growing worldwide. Patients with cancer are seeking traditional complementary and integrative medicine to mitigate the symptoms and enhance their well-being. Though there is supporting evidence for inter-disciplinary team care in oncology, the integrative oncology models in a resource-poor setting have not been explored. The current manuscript provides an overview of the integrative oncology model focusing on how complementary therapies such as psychosocial services, dietetics, yoga, and wellness programs could be integrated in clinical oncology care in a cost-effective way in a resource poor settings. Manuscript also discusses examples where such a model of care has currently been implemented for patients as well as caregivers.

**Keywords:** Complementary medicine, Holistic care, Supportive care, Cancer care, Integrative medicine, Integrative oncology, Resource-poor setting

## INTRODUCTION

The term 'Integrative oncology' has been used to refer to the combination of complementary medicine therapies with conventional cancer treatments. Integrative oncology (IO) is defined as a patient-centred, evidence-informed field of cancer care that utilises mind and body practises, natural products, and/or lifestyle modifications from different traditions alongside conventional cancer treatments. Integrative oncology aims to optimise health, quality of life, and clinical outcomes across the cancer care continuum and to empower people to prevent cancer and become active participants before, during, and beyond cancer treatment.[1] IO is also considered as both a science and a philosophy that acknowledges the complexity of cancer patient care and offers a wide range of evidence-based strategies to support conventional medicines and promote health.[2]

## RELEVANCE OF INTEGRATIVE ONCOLOGY

According to meta-analysis of surveys and a systematic review, there is an upsurge in the usage of complementary therapies by the patients with cancer as part of their disease and survivorship care.[3,4] The ability to meet patients' physical, psychological and spiritual needs have led to increased referrals by conventional healthcare professionals for IO consultation and treatment services.[5]

In this view, several cancer centres around the world have incorporated "Integrative Medicine" or "Integrative Oncology (IO)" services or "Wellness Centres" or complementary therapies (CT) and exercise programmes.

Complementary and integrative medicine (CIM) interventions encompass a diverse range of approaches, including ancient medical systems such as Ayurveda, biologically based therapies (including herbal remedies), mind-body therapies (yoga including meditation, manipulation therapies, massage, and Qigong).[6] The potential benefits of these interventions have been endorsed by several guidelines leading to their incorporation into IO) programmes.[6,7]

IO has gained significant prominence, finding its place both in hospital settings and community-based healthcare.[3] The therapies offered are patient-centric and evidence-based approaches facilitated by integrative physicians or healthcare professionals dually trained in integrative oncology and supportive cancer care.[8,9] The integration of IO services into cancer care is evident through the establishment of dedicated integrative cancer centres, departments, and programmes in renowned medical institutions worldwide. Furthermore, it has become an integral part of multidisciplinary cancer care teams, working in conjunction with conventional medical treatments to enhance overall patient outcomes and well-being. For instance, the inclusion of complementary and integrative medicine (CIM) interventions has led to the development of specialised oncology massage programmes within chemo-infusion suites. These programmes offer additional support and comfort to patients throughout their cancer treatment journey. IO's growing recognition and implementation signify its potential to provide comprehensive and personalised care to cancer patients, addressing their diverse needs and improving their overall treatment experience and quality of life.

Research has demonstrated the effectiveness and safety of IO modalities in preventing various disease-related symptoms and managing issues that significantly impact cancer patients' quality of life. These modalities have shown positive outcomes in addressing cancer-related pain, chemotherapy-induced nausea and vomiting, cancer-related fatigue, hot flashes, night sweats, insomnia, anxiety, and depression, offering patients a sense of empowerment and control over their health and illness.[10,11] In addition, IO interventions have been found to be beneficial in enhancing the physician-patient relationship and well-being of patients' families by providing them supportive care and a better understanding of the patient's journey.[12]

## INTEGRATIVE ONCOLOGY - INDIA SCENARIO

One significant gap in Integrative Oncology in India is the lack of awareness among the healthcare professionals about the availability of integrated therapies and potential benefits of these therapies in cancer care. Lack of evidence around its effectiveness and safety is another barrier for referring patients avail integrated therapies. Access to IO services particularly in poor resource setting such as rural areas are limited since specialised centres and trained practitioners may be concentrated more in urban regions.

## EXAMPLES OF MODELS OF IO IN POOR RESOURCE SETTINGS

Solis Health (SH) aims to establish collaboration and communication between conventional medical practitioners and IO providers for offering a comprehensive and coordinated patient care. The uniqueness of SH is the amount of time dedicated to patients, which is incomparable to that in a hospital setting like patients are not bound to complete availing of the services within a stipulated time. There are no strict time constraints for patients to complete their services, providing a more flexible and patient-centric approach. Furthermore, the availability of these services online offers added convenience for patients.

SH have taken following aims to take the following initiatives: Awareness and Education, conducting public awareness campaigns and educational programmes to inform patients and healthcare professionals about the benefits and evidence-based nature of Integrative Oncology therapies.

## ORIGIN OF SOLIS HEALTH

Solis Health was born out of the personal experiences of Bhairavi Madhusudhan Shibulal, who lost her mother to advanced triple-negative cancer. While Bhairavi ensured her mother received the best clinical care, she found it difficult to cope with the harsh realities of life with cancer. The continuous movement between hospitals and diagnostic centres, which lacked warmth and comfort, further added to her distress. Through extensive discussions with her family and other patients, hospitals and healthcare professionals, both in India and abroad, she realised that numerous individuals faced similar challenges on a daily basis. This realisation compelled her to take action. Thus, 'Solis Health' emerged as a response to the need for a place where anyone affected with cancer could find emotional, practical and social support in comforting environment.

Several hospitals in India have successfully integrated complementary services with conventional medicine for decades now.[13] Integrated therapies (Psychosocial services, Diet and Nutrition, Yoga and Wellness) at SH are delivered by licenced professionals similar to those provided at renowned international comprehensive cancer centres.[3,14] SH centre is similar to Maggie's model, UK located in a visually appealing and humanising environment.[2,15] Nevertheless, unlike other cancer centres, Solis Health is the first stand-alone, self-funded, not-for-profit cancer support centre situated outside the hospital premises where patients receive care that is rooted in

proven methods that have been successful in similar settings worldwide.

## ESTABLISHMENT OF SOLIS HEALTH CENTRE

Various researchers have highlighted the negative impact of psychological stress induced by cancer itself and the treatment environment on the healing process of patients. Stress reduction methods and the provision of relaxing spaces have shown limited influence on mitigating these triggers. Sarah Michalec suggests that a design based on participants' personal experiences, empathy, and engagement can effectively reduce stress levels and aid in the healing process.[16-18]

Taking inspiration from Maggie's architecture, the design of SH incorporates an environment that promotes relaxation for both patients and caregivers.[19] The entrance of the SH centre is warm and inviting, leading to an expansive open space, surrounded by lush greenery and a body of water. The centre includes an administrative office; one sitting area; a library; a knowledge portal; sliding storyboards with patients' lived experiences of cancer; a kitchen area; a large activity space; an audio-visual room; a spa; a saloon; a retail area; a yoga hall; three counselling rooms; a family therapy room; a quiet room; and four lavatory rooms. Also, SH is located in the heart of the city where it can be easily accessible to the patients.

## THE FRAMEWORK OF THE ESTABLISHMENT

The primary objective of Solis Health is to offer comprehensive and compassionate support to patients, caregivers, and families as they navigate the difficult path of cancer care. This is achieved through a person-centred approach in a soothing and comforting environment. The paper outlines the creation of the SH Centre with the intention of sharing valuable insights on establishing an integrative oncology service, aiming to provide guidance and assistance to others in similar endeavours.

## ADMINISTRATIVE STRUCTURE

SH operates with a dedicated team of full-time providers licenced in their respective fields. The team consists of various professionals such as Medical Director, Centre Manager, Psychosocial personnel, Clinical Dietitians, Yoga and Wellness Specialists, Financial counsellors and Front office personnel (Table 1) (Figure 1 and 2). They possess fundamental knowledge in oncology along with competencies in crucial areas such as communication skills, team-building skills, and the ability to deliver safe, effective, and compassionate care to patients and their loved ones.[20] SH also benefits from the expertise of a part-time service provider i.e., Spa and Salon Oncology Specialist, who offers light and relaxing massages, manicures, pedicures, foot massages, facials and similar services aimed at providing relaxation and comfort. Additionally, retail personnel are available to assist patients with various products such as wigs, head scarves, hats, beanies, chemo hats and prostheses, catering to their specific needs. SH also collaborate with external professionals, such as Psychiatrists and Physiotherapists, who may be available on a fee-for-service basis. These experts contribute their specialised skills and knowledge to support the mental health and physical well-being of patients within the integrated care framework.

**Table 1: Model of IO in poor resource settings: administrative structure.**

| S. no. | Designation | Numbers |
|---|---|---|
| **1** | Medical Director | 1 |
| **2** | Centre Manager | 2 |
| **3** | Psychosocial Personnel | 2 |
| **4** | Dietician and Nutritionist | 2 |
| **5** | Specialist in Yoga and Wellness | 2 |
| **6** | Financial Counselor | 1 |

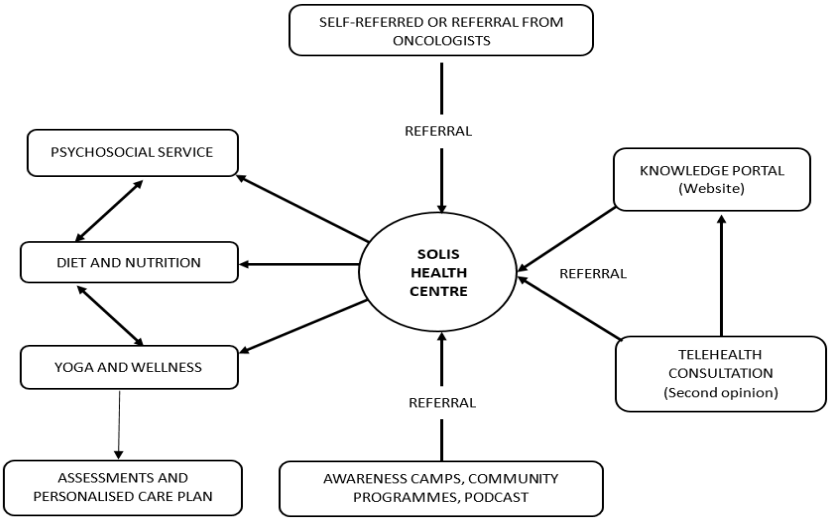



**Figure 1: Model of IO in poor resource settings: patient referral pathway.**

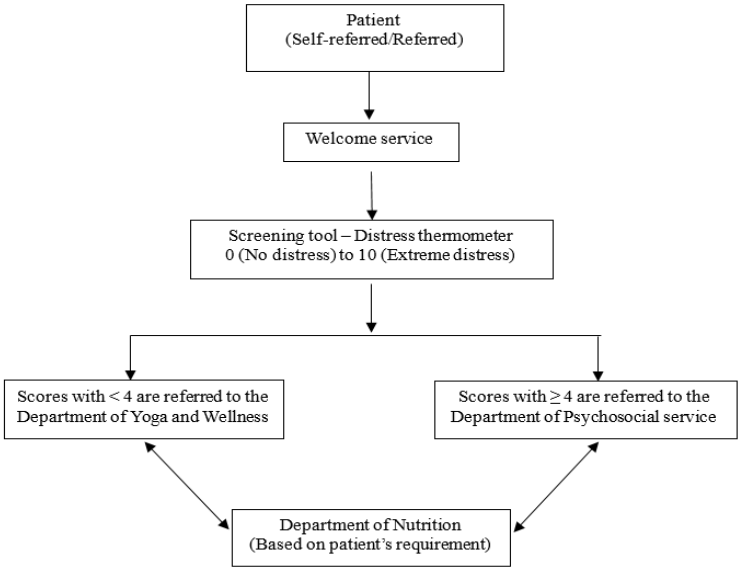



**Figure 2: Model of IO in poor resource settings: referral structure.**

## FINANCIAL VIABILITY

Cancer is a huge out-of-pocket expense for the patient. It is quite challenging to provide affordable and equitable cancer care in low-middle-class income countries like India.[21] IO services are known to help reduce hospital stays and medications, improve symptom management (reduce pain, nausea, anxiety), treatment compliance and patient satisfaction. One of the major barriers to integrating IO alongside conventional treatment is financial viability.[3] To address these concerns, SH has developed health subscription plans (eg. annual memberships) and subsidised packages to promote indirect financial benefits and cost-effective options. SH also provide assistance to patients in navigating various government schemes to facilitate a hassle-free journey. To ensure accessibility, introductory sessions, workshops and community programmes are offered at affordable rates, allowing individuals to engage with integrated oncology services. Research has shown that patients express the need for a prior understanding of IO services.[22] As the concept is relatively new in India and introduced for the first time, there is no cost involved for those who wish to explore the space and have a conversation with the staff. This approach aims to spread awareness and encourage individuals to learn more about the IO services provided without financial barriers for initial interactions (Walk-ins).

Treatments at SH are carefully selected based on the available evidence regarding their safety, efficacy, and cost-effectiveness in the context of cancer care.[3] The range of services provided at SH is listed (Table 2).

**Table 2: Model of IO in poor resource settings: list of services provided.**

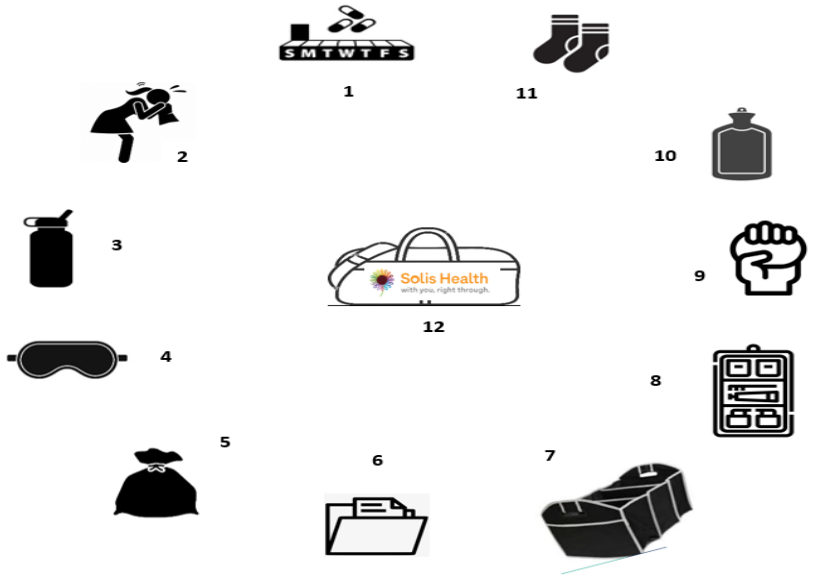
| Individual services | Group-based services | As needed |
|---|---|---|
| Detailed consultation | Yoga and wellness programmes | Art therapy<br>Music therapy<br>Pilates |
| Psychosocial services | Support therapy | |
| Diet and nutrition | Family therapy | |
| Yoga and wellness | Diet and nutrition programmes | |
| Financial counselling | Workshops | |
| Physiotherapy | Community building programmes | |

## ASSESSMENTS AND REFERRAL PATHWAY

Patients visiting the centres may be either self-referred or referred through other sources (eg. referral from oncologists or through website etc.). On arrival, they are warmly welcomed by dedicated staff and offered tea or coffee. A tour around the centre is provided to help patients familiarise themselves with the space. A brief introduction to the IO services is given emphasising their interconnectedness within cancer care. Patients are given the freedom to choose the services they feel are most relevant to their needs. Subsequently, detailed consultation and assessment are conducted to gain a thorough understanding of the patient's needs, concerns and goals. The concerns expressed by caregivers and referral doctors are also carefully noted. This comprehensive assessment process enables the providers to develop personalised care plans that address the specific needs of each patient, while also setting realistic expectations and goals for the

potential benefits of the chosen treatments and interventions.

The assessment process typically lasts between forty-five minutes to an hour, allowing sufficient time for a thorough understanding of the patient's concerns. Based on the information gathered, the assessor develops a care plan, either independently or in collaboration with other teams, focusing on the expressed needs of the patient. It is important to note that even if a patient approach to avail emotional support, the assessment may lead to the identification of additional needs, such as nutritional assessment, which can be incorporated into the care plan. During the assessment, the patient is encouraged to express their preferences and concerns regarding the framework of care, including the duration of therapies, inter-departmental referrals, follow-up consultations, and reviews. The patient has the freedom to refuse any therapy or intervention that they are not comfortable with. Follow-up appointments are typically scheduled on a monthly basis to review the progress made. However, the frequency and nature of follow-ups may vary depending on individual patient needs and the specific services availed. Families and caregivers are actively involved throughout the continuum of care, recognising the importance of their support and participation in the patient's well-being. As a gesture of appreciation, patients enrolled for services at the centres receive a welcome kit known as the Solis Cancer Care Kit (Figure 3). This kit serves as a token of appreciation and support for patients embarking on their cancer care journey at Solis Health.




1.Pill organizer 2. Disposable vomiting bag 3. Flask 4. Eye mask 5. Laundry bag
6. Medical documents folder 7. Organiser 8. Toiletries kit 9. Stress ball
10. Hot-water bag 11. Anti-skid socks 12. Duffle bag

**Figure 3: Example of model of IO in poor resource settings: solis care kit.**

**Table 3: Model of IO in poor resource settings: list of scales used for assessments.**

| Name of the Department | Assessment tools |
|---|---|
| **Psychosocial service** | Distress Thermometer (DT) |
| | Patient Health Questionnaire (PHQ-9) |
| | Functional Assessment of Cancer Therapy (FACT-G) |
| | Kingston Caregiver Stress Scale (KCSS) |
| **Diet and nutrition** | Patient-Generated Subjective Global Assessment (PG-SGA) |
| **Yoga and wellness** | Visual Analogue Scale (VAS) |
| | Distress Thermometer (DT) |
| | Functional Assessment of Cancer Therapy (FACT-G) |

There is no standardised referral framework, structured referral process, or information available on how, and when, to make interdepartmental referrals in cancer care.[23] To address this gap, we utilise "open house sessions" not only to educate patients but also to educate our staff about the role of each other's service in cancer care and recognise appropriate conditions for making referrals. Studies have shown that screening for distress can improve referrals and facilitate communication between the healthcare provider and the patient with cancer.[24] The NCCN and American College of Surgeons Commission recommends routine screening for distress in all cancer patients as well as an

accreditation criterion for institutes.[25] Therefore, all self-referred patients or referred by the treating doctor are greeted by a dedicated staff at SH and evaluated for distress as a standard procedure the severity of the distress scores determines referral for additional care.[26,27] Based on the scores, patients are either referred to yoga services (for scores > 4) or psychosocial services (for scores >4) for additional evaluation. Since there is a strong link between mental well-being, exercise and diet, the Department of Nutrition recommends Psychosocial support services and Yoga service (a low-impact form of exercise) for the overall effectiveness of care (Figure 2).[28] However, it is ultimately the patient's decision to consider or refuse additional services, and their autonomy and preferences are respected throughout the process.

SH is using a customer relationship management (CRM) platform for acquiring data (demography, patient journey, billing, etc.). Each department will be using validated tools (Table 3) which have been used in research studies to measure the effectiveness of their service - a) Department of Psychosocial Service - Distress Thermometer (to evaluate distress), Patient Health Questionnaire (to monitor the severity of depression and response to treatment), Functional Assessment of Cancer Therapy (to measure the quality of life) (b) Department of Diet and Nutrition - Patient-Generated Subjective Global Assessment (PG-SGA) (to assess nutritional status) c) Department of Yoga and Wellness - Visual Analogue Scale (to document disease-related symptom severity), distress thermometer (to evaluate distress), Functional Assessment of Cancer Therapy (to measure the quality of life). Prospective observational data, patient-reported outcomes (symptom severity, quality of life), and patient satisfaction (qualitative feedback) will be routinely assessed to identify and quantify the unmet requirements and assess holistic health outcomes.[29-34] All these tools have been integrated into the CRM platform.

## DELIVERABLES

Since the time of commencement of the physical SH centre (February 2023) till date (July 2023), a total of 21 patients have approached SH. 6 of the 20 patients visited the centre in person to feel the space and understand the services. Presenting patients had the diagnosis of gastrointestinal cancer (8), breast cancer (9), Hodgkin's lymphoma (1), blood cancer (1), and gynecological cancer (1). Patients have opted for single or combined services. To date, 3 patients have availed Nutrition services, 2 patients have availed both Nutrition and Psychosocial service, 2 patients have availed Yoga and 1 patient has availed both Yoga and Nutrition services. Among the 8 patients, 6 patients are on active treatment and 2 patients have completed their treatment. Only 1 caregiver has availed Yoga service so far. There have been 12 referrals so far (9 referrals from the oncologists; 3 patients were self-referred. About 9 caregivers approached us on behalf of their loved ones. Since SH's model for IO services is still in its infancy in India, we are sensitising hospitals, oncologists, and the public through outreach activities, community programmes, and workshops. We hope these initiatives help increase patient referrals and improve access to IO services in the future.

SH was founded based on the personal experience of the founder, aiming to provide IO services similar to those offered at comprehensive cancer centres worldwide, in a visually appealing and humanising environment.[2,15] SH has designed solutions assuming that the barriers may be similar to those faced by the IO centres in hospitals as summarised in Table 4.[15,35,36] However, it is too early to claim the effectiveness of IO services at SH and addressed the barriers successfully. We will be able to validate the effectiveness of the services based on the patient-reported-outcome measure, feedback, increased referrals and walk-ins in the future.

**Table 4: Model of IO in poor resource settings: perceived facilitators/barriers for service utilisation.**

| S. no. | Facilitators/barriers | Solution |
|---|---|---|
| **1** | Funding and sustainability | SH is a self-funded organisation |
| **2** | Access to IO services | IO services like Psychosocial service, Diet and Nutrition, and Yoga and Wellness are available both online and offline. Additional services like legal assistance and financial counselling are also provided. |
| **3** | Information, guidelines, knowledge sharing, and inter-departmental referrals | The Knowledge Portal contains resources to empower patients in making informed decisions. Standard operating procedures (SOPs) are developed following NABH guidelines. Staff literacy is increased through open house sessions, journal clubs, and workshops. Interdepartmental referrals are facilitated through discussions and regular team meetings. |
| **4** | Patient preference and culture | Services provided are culturally appropriate (eg. Yoga) and responsive to patients' needs. |
| **5** | Staff | Recruitment of staff with experience in cancer care and IO skills. |
| **6** | Cost | Health subscription plans are offered at preferred rates. Packages are available at affordable rates compared to hospitals. |
| **7** | Atmosphere | A welcoming atmosphere |
| **8** | Travel burden | Online services are offered to cut down the travel time. |

## SOLIS CANCER CARE KIT

The welcome kit provided at SH is a symbol of hope and encouragement for individuals undergoing cancer treatment. It is carefully curated drawing inspiration from leading cancer websites to provide patients with the essential tools to navigate their journey with confidence and resilience. The kit includes essential items contained in a duffle/hospital bag (Figure 3). It has an organiser to keep hospital necessities, a customised hospital file folder for managing appointments and preserving medical documents, a flask for comfort, a pill organiser for medication storage, an eye mask for better sleep, a hot water bag for pain relief, anti-skid socks for fall prevention, a disposable vomiting bag, a stress ball for circulation improvement and stress reduction, a toiletries kit for personal hygiene, and a laundry bag for used clothing. These items aim to provide practical support and comfort to individuals throughout their cancer journey.

## PATIENT EDUCATION

Educating cancer patients about their illness and its management is crucial for fostering trust, improving the doctor-patient relationship, enhancing symptom management, and empowering informed decision-making.[37] In order to address this, we have introduced two programmes accessible to both patients and caregivers namely: a) Connect the Dots: This personalised interactive session, conducted by our dedicated staff, provides a foundational understanding of cancer, treatment modalities, managing side effects, financial management, legal considerations, and practical tips for maintaining psychological and emotional well-being throughout the cancer journey b) Open House: This session offers insight into the significant contributions made by each service (Psychosocial service, Diet and Nutrition, and Yoga and Wellness) at our centres to the patient's cancer journey. Both of these sessions serve to raise awareness about a supportive environment where individuals can freely express their emotions and engage with others who share a similar journey.

## FACILITATORS AND BARRIERS

SH has designed solutions with the assumption that the obstacles may be similar to those faced by the IO centres in hospitals as summarised in Table 4.[36,38,39] However, it is too early to claim the effectiveness of IO services at SH and addressed the barriers successfully. We will be able to validate the effectiveness of the services based on the patient-reported-outcome measure (PROM), feedback, increased referrals and walk-ins in the future.[40]

## KEY INSIGHTS

### *Cancer awareness and patient-centric approach*

The importance of cancer education in local languages and the distribution of pamphlets and handouts cannot be understated. This has helped raise awareness in the community, highlighting the need for patient-centric care. We have realized the significance of catering to diverse populations by tailoring our educational materials and information to make it accessible to all.

### *Supportive services*

Offering transportation services has taught us the value of providing practical support to our patients. We recognise that addressing their transportation needs can significantly ease their journey to and from the facility.

### *Expert guidance*

Inclusion of supervisors with oncology experience has shown us how expert guidance and emotional support can enhance the patient experience and overall well-being during cancer treatment.

### *Patient safety and empowerment*

Conducting risk assessments and implementing safety precautions have been vital in ensuring the safety and comfort of our cancer patients. Equipping patients with a user manual for the Solis Care kit has also empowered them to take a more active role in managing their health. These practices underscore the importance of patient safety and empowerment throughout their treatment.

### *Extended free-for-service impact*

Extending the free-for-service program would have improved centre visibility. Moreover, offering these services would have been a learning experience, enabling us to refine policies and pathways to better cater to the needs of our patients.

### *Flexibility in service delivery*

Challenges in adhering to strict timelines for availing package services have led us to recognise the importance of flexibility in service delivery. We now understand the need to accommodate individual patient needs and preferences, as this can significantly improve the overall patient experience.

## PROSPECTIVE PLANNING

### *Service efficiency optimization*

Based on the insights from past experiences, we plan to focus on optimising service efficiency to reduce waiting times and ensure timely access to our comprehensive cancer care packages.

### *Cultural and linguistic sensitivity*

To better cater to our diverse patient population, we will continue to invest in increasing our multilingual staff

capacity. This will enable us to communicate more effectively and provide culturally sensitive care to patients from diverse linguistic backgrounds.

***Patient comfort enhancement***

Understanding the vulnerability of cancer patients, we plan to expand our efforts in providing nutritional support and comfort during their visits. This includes offering food and refreshments through vending machines to address their potential hypoglycaemic needs.

***Strategic marketing for improved outreach***

To ensure more patients have access to specialised care, we intend to focus on strategic marketing to increase referrals to skilled oncologists. This will involve aggressive marketing strategies that promote our services and highlight the benefits of seeking expert care at Solis Health.

By proactively implementing these future plans and continuing to learn and adapt, we aim at providing better cancer care and support to our patients in the years ahead.

## CONCLUSION

Solis health is a "proof of concept" that was envisioned by its founder and introduced for the first time in India representing itself as a pioneering approach to IO services. Despite some limitations, the concept has gained momentum, with patients benefitting from the extended time and flexibility offered. The future holds potential for Solis Health to foster a strong community of patients and become a catalyst for the advancement of IO services in the healthcare area.

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