



SOCIAL IMPACT ASSESSMENT STUDY

**Providing Radiotherapy Equipments - Linear
Accelerator and Brachytherapy in Tamil Nadu
Government Multi Super Speciality Hospital**



**Centre of Excellence in CSR
Tata Institute of Social Sciences**

Providing Radiotherapy Equipments - Linear Accelerator and Brachytherapy in Tamil Nadu Government Multi Super Speciality Hospital

Project Details	
Implementing Agency	Tamil Nadu Government Multi Super Speciality Hospital TNGMSSH
Duration of the Project	FY 2018-21
Cost of the Project	₹18,50,00,000
Total Number of Beneficiaries	5000+
Project Status	Completed

BRIEF OF THE IMPLEMENTING AGENCY

Tamil Nadu Government Multi Super Speciality Hospital (TNGMSSH) stands as a premier healthcare institution in Tamil Nadu, India. Renowned for its comprehensive range of medical services and cutting-edge facilities, the hospital serves as a cornerstone of advanced healthcare delivery in the region. With a dedicated team of skilled medical professionals and state-of-the-art infrastructure, TNGMSSH is committed to providing high-quality medical care and addressing the community's healthcare needs.

The Radiology Department within Tamil Nadu Government Multi Super Speciality Hospital (TNGMSSH) represents a pinnacle of diagnostic excellence. Equipped with advanced imaging technologies and staffed by experienced radiologists, the department is pivotal in providing accurate and timely diagnostic insights. The Radiology Department contributes significantly to the hospital's comprehensive healthcare approach by aiding doctors in precise cancer detection, patient management, and treatment planning from traditional X-rays to advanced MRI, CT scans, and ultrasound.

BACKGROUND OF THE PROJECT

Airports Authority of India has agreed to support the project- Providing Radiotherapy Equipments - Linear Accelerator and Brachytherapy by financial assistance under its CSR initiative for the amount of ₹ 1850 Lakhs (Rupees One Thousand Eight Hundred and Fifty Lakhs Only) as per the estimates prepared by the Tamil Nadu Government Multi Super Specialty Hospital. This project aims to give the general public and poor people cancer care treatment on par with international standards. With the increasing number of cancer cases, the LINAC (Linear accelerator) will provide a comprehensive treatment for cancer at the TNGMSSH. The project reached completion within a 36-week timeframe, with the funds disbursed by AAI in four instalments.

METHODOLOGY

Sample surveys and interviews were conducted, with direct and indirect beneficiaries as part of social impact assessment of this project. The study encompassed all stakeholders involved with the project, including both direct and indirect beneficiaries, as well as the hospital staff. Various tools for data collection like interview schedules and key informants was used, with selected respondents dependent upon their engagements with the project.

The necessary data from the sample respondents were collected by trained field investigators with the help of a structured interview schedule. The interview schedule developed by TISS was finalized after getting inputs from Airports Authority of India Chennai region.

STUDY AREAS

📍 Tamil Nadu Government Multi Super Speciality Hospital TNGMSSH



The study area of this project was at Tamil Nadu Government Multi Super Speciality Hospital (TNGMSSH) Omandurar, Government Estate, Anna Salai, opposite to The Hindu Office, Anna Salai, Triplicane, Chennai, Tamil Nadu 600002.

ETHICAL CONSIDERATION

Informed consent is a fundamental principle in all research endeavours, and this study was no exception. The respondents and key stakeholders were fully informed about the purposes and objectives of the research. Moreover, they were assured of the utmost confidentiality regarding the interviews. During the interviews, respondents were given

complete autonomy to decline to answer any question or discuss any experience they felt uncomfortable disclosing. To protect the privacy and dignity of the beneficiaries, their names have been omitted from the report, ensuring the maintenance of anonymity.

LIMITATIONS

Patients who visit the hospital for follow-up consultation post-treatment are primarily selected for this study. Despite an average of 100 patients daily receiving radiation treatment in the department, we cannot attend to all of them for carrying out this study as they are shifted to the intensive care ward. The responses became saturated and consistently positive after conducting interviews with around 30 beneficiaries. Except for a few, most patients are unaware of the machinery provided by the AAI.

FINDINGS

Health is a state subject. To facilitate that, along with the existing public hospital networks, the Tamil Nadu Government erected a multi-super speciality hospital in its capital city. Since its establishment, there has been a consistent rise in the number of patients seeking medical care, and this pattern extends to the Radiology oncology department as well. As indicated by the National Cancer Registry Report of 2022, a projected increase of 12.8 per cent in cancer cases is foreseen for 2025 compared to the statistics recorded in 2020.

In the discussion with Prof. Balasubramaniam, the department head, and other senior doctors, it became apparent that an average of 100 patients receive treatment daily. Breast and cervix cancers are prevalent among females, while head and neck cancers and bladder and prostate cancers are commonly observed among males.

Each patient walks into this department, hoping to feel better and cured. Many patients are referred from public hospitals or private medical facilities. Accessing treatment at a private hospital is not feasible for them due to the prohibitively high treatment cost.



Figure 1

*Radiation
Oncology
Department
at
TNGMSSH,
Chennai*

Doctors in the department highlighted that both IMRT and RapidArc treatments alone would amount to Rs. 2 Lakhs and Rs. 3.5 Lakhs, respectively in a private hospital, which is carried out free of cost in this hospital due to this CSR project of AAI. IMRT is a prevalent method of delivering radiotherapy for head and neck cancer (HNC). At the same time, RapidArc (RA) represents an innovative treatment approach known for its efficient delivery and potential for enhanced dose precision. This department primarily caters to solid tumour cases, addressing the healthcare needs of a broad spectrum of patients.

Upon arriving at the hospital, every patient will undergo a series of essential tests to analyse and understand their treatment requirements. The medical board will oversee the determination of these tests, which convenes daily from Monday to Friday at 12 p.m. Subsequently, based on the assessed needs, the patient will receive appropriate radiation treatments.

*"I am coming from cuddalore which is 190 Km far, i got my life back with the treatment i received from here"
– a beneficiary*



Figure 2: Linear Accelerator

(A linear accelerator, or LINAC, is a machine that accelerates charged particles to high speeds. The particles pass through a series of alternating electric fields in a linear structure. LINACs are commonly used to deliver external beam radiation treatments to cancer patients. They can deliver high-energy x-rays or electrons to the region of the patient's tumor.)

The majority of the patients arrive at this hospital either through referrals from other healthcare facilities or as a last resort, having exhausted treatment options at various other hospitals (including government and private), as well as those offering alternative therapies such as Siddha, Ayurveda, and Homeopathy. These individuals seek care at this department when their conditions have advanced significantly, often leaving the medical team with limited options, and, in some unfortunate cases, rendering the doctors unable to provide effective assistance of rapid spread of cancerous cells in the body.

The below chart offers a comprehensive overview of the distribution of patients receiving radiation and oncology treatment at the hospital over the course of a week.

Notably, 24.1% of these patients are coming for the treatment for Head and Neck-related conditions, while Breast and Gynecological cases make up 28.6% of the total. Bladder and Prostate-related treatments constitute 2.1%, and Gastrointestinal Tract (GIT) conditions account for 9.1% of the patient population. Additionally, a substantial 28% comprises patients with various other cancer types, including multiple myeloma, sarcoma, bone marrow, etc. This breakdown highlights the diverse spectrum of oncological cases registered in the hospital.

5 Days Patients Breakup

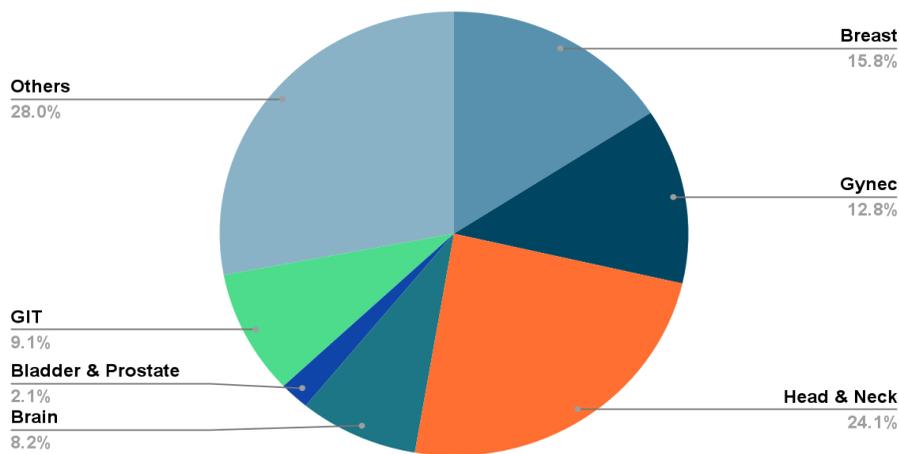


Figure 3: Brachytherapy

(Brachytherapy is a type of internal radiation therapy in which seeds, ribbons, or capsules that contain a radiation source are placed in your body, in or near the tumor. Brachytherapy is a local treatment and treats only a specific part of your body. It is often used to treat cancers of the head and neck, breast, cervix, prostate, and eye.)

In the course of the discussion with Dr. R Vimala (the Director of the hospital), a noteworthy proposal emerged regarding the need for additional machinery upgrades. The rationale behind this recommendation lies in the fact that the existing equipment can only accommodate the treatment of up to 100 patients daily. However, by implementing software and hardware enhancements, they can significantly improve its capacity to treat patients with greater precision and accuracy. Specifically, these upgrades will allow them to precisely target the radiation treatment to the exact location of identified tumors, ultimately expanding doctors ability to provide more effective care to a larger number of patients.

CONCLUSION

The Corporate Social Responsibility (CSR) initiative led by the Airports Authority of India at TNGMSSH has achieved remarkable success. Since its establishment within the hospital in 2020, over 5,000 patients have gained significant treatment from the Radiotherapy Equipment, including Linear Accelerators and Brachytherapy for their cancer treatment.

While conducting field observations, it becomes apparent that hospital patients receive exemplary care. Many of those undergoing radiation therapy experience fatigue due to the intense radiation exposure. Even after successfully completing the treatment plan and achieving a complete recovery from cancer, the process of returning to full strength and restoring normal metabolism may span several months. However, patients and bystanders express profound gratitude for the AAI's support and applaud the commendable efforts being made.

Appendix



1. Interview with doctor/official of TNGMSSH
2. Interview of beneficiaries/bystanders of beneficiaries .

FOR DOCTOR/OFFICIAL FROM TNGMSSH	
Name-	
Designation-	Contact-
Location-	
Date-	
1. Brief history of the project? (When and how did it start)	
2. Has the project completed? If yes, when?	
3. What is the objective/s of the project?	
4. Who are the Target Beneficiary?	
5. How many patients were provided treatment in the year (Avg)?	
6. Are there any similar facilities available in the government hospitals nearby?	
7. What are the prevalent types of cancer reported in males and females?	

8. What will be the treatment cost with these machinery in a private hospital?

9. Any scope for further improvement of the project

10. Any further expectations from AAI (Funding Agency)?

FOR THE BENEFICIARIES/ BYSTANDERS

1. Date-

2. Name-

3. Gender-

4. Relationship with Patient

5. Location-

6. Contact Number-

7. How far is the home from this hospital.

8. Family Income (Per Annum in INR)-

- a. Below 50,000
- b. 50,001- 1,20,000
- c. 1,20,001- 3,00,000
- d. 3,00,001- 5,00,000
- e. Above 5,00,000

9. How did you come to know about this Hospital?

- a. Through Hospital/doctor
- b. Through Newspaper/posters
- c. Through Government Advertisement.
- d. Others (Please mention)-

10. When was the treatment started? (Date)

11. Type of health problem that you suffered from?

12. Status of Treatment?

- a. Undergoing Treatment
- b. Treatment Complete
- c. Other (explain)

<p>13. Are you satisfied with the treatment (if above question is b)?</p> <p>a. Yes</p> <p>b. No</p> <p>(Reason for both answers)</p>
<p>14. Did you pay for the treatment?</p> <p>a. Yes (Totally)</p> <p>b. Yes (Partially) Explain</p> <p>c. No</p> <p>d. Other/ CM Insurance (Explain)</p>
<p>15. Any limitations/challenges in getting the treatment done?</p> <p>a. Yes (explain)</p> <p>b. No</p>
<p>16. Any suggestion for further improvement of the treatment or at the hospital</p>
<p>17. Do you know who had supported this hospital to purchase the machinery used for your treatment?</p> <p>a. Yes</p> <p>b. No</p>
<p>18. Any further expectations from AAI (if they respond to the previous question yes)?</p>

Note for Investigator-

1. Please make sure that no one from the Implementation or Funding Agency is present with the parents during interview.
2. Please make sure that no one from the Funding Agency is present with the official of Tata Memorial Hospital during interview.