

REPORT ON HOSPITAL VISIT



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**BMS, 2022-2027 BATCH
(21.03.2025)**

The department of Biomedical Science organized a one-day hospital visit to Harshamitra Super Speciality Cancer Center & Research Institute, (P) Ltd, Madurai Road, Nagamangalam, Tiruchirappalli- 620 012. The visit was arranged with the prior permission and guidance of the Head of the Department, Prof. Dr. G. Mathan and Prof. Dr. K. Premkumar, has taken strenuous efforts and initiative which made this visit a grand success. Prof. Dr. G. Mathan and Prof. Dr. K. Premkumar, and Dr. R. Poornima, accompanied with this hospital visit. A total of 24 students of Biomedical Science along with 3 faculty members have joined this hospital visit.

On the day of visit:

1. We started travelling from the college towards the Harshamitra Super Speciality Cancer Center & Research Institute at 10.30 a.m. on 21st March, 2025.
2. We reached at the hospital at 11.00 a.m.
3. The student's names were entered into the log book.
4. The students were divided into 4 groups, with a representative for each.
5. Each group were assigned to visit various departments.
6. The students had a lunch break from 1. 15 to 2. 15 p.m.
7. Followed by a lecture on CANCER AWARENESS given by Dr. P Sasipriya Govindaraj M.B.B.S., M.D. DMRT., Chief Radiation Oncologist.
8. The students reached the Bharathidasan University at 5. 00 p. m.

Objective of the Visit

The primary objectives of this visit were:

- To understand the role of a super-specialty hospital in cancer treatment.
- To observe the functioning of various hospital departments.
- To learn about advanced diagnostic and therapeutic techniques used in oncology.
- To interact with healthcare professionals and gain insights into patient care.

Hospital Overview

Dr. Govindaraj Varadhanan is the managing director of the Harshamitra Super Speciality Cancer Hospital. He lost his father during his final year MBBS to throat cancer. His father's demise drew his attention towards the deadly disease, cancer. He pursued higher studies in surgical oncology and his wife Dr. P. Sasipriya take up radiation oncology. Their dedication and passion towards the field due to its painful impact on their family made them pursue the course with love towards the profession. They worked in various institutions, with all the experience gained they started

Harshamitra at Trichy. Harshamitra Super Speciality Cancer Hospital has been delivering quality public service for 14 years.

Unique Features of Harshamitra

- First to introduce the concept of TUMOUR BOARD directed multimodal treatment for cancer at Trichy in 2010.
- First to open an exclusive “For Women, By Women” cancer screening wing at Trichy.
- First to introduce Thermogram in Tamil Nadu for early detection of Breast Cancer.
- First to introduce 24 Channel Brachytherapy Machine in Trichy.

Key Observations:

1. General Ward:

- The hospital's general ward is spacious and well-organized, providing ample beds for patients.
- Private cubical beds are available for patients who require privacy.
- The healthcare staffs closely monitor patients' vitals and administer treatment based on the doctors' decisions.
- Treatment plans are formulated weekly through discussions among the medical oncologist, surgical oncologist, and radiation oncologist to determine the best course of action for each patient.
- Diploma healthcare assistant students actively participate in patient care as part of their practical training.

2. Outpatient & Specialized Rooms:

- The hospital has two outpatient consultation rooms.
- A dedicated fetal room for specific prenatal and fetal-related procedures.
- A well-equipped emergency room (ER) for immediate patient care.
- A fully stocked pharmacy catering to oncology and general medical needs.
- The hospital also offers cervical cancer vaccines.

3. Laboratory & Diagnostic Services:

The hospital houses multiple laboratories specializing in various diagnostic tests:

- **Biopsy Lab:** For cancer tissue examination and histopathology.

- **Fine Needle Aspiration Cytology (FNAC) Lab:** For diagnosing tumours and abnormal growths.
- **Serological Testing Lab:** For infectious disease screening and immune response evaluation.
- **Haematology & Biochemistry Lab:** For routine blood work and biochemical analysis.
- **Imaging & Radiology:** Supportive imaging techniques for better diagnosis.

4. General ICU & Emergency Care:

- The General ICU is well-equipped with emergency medicines such as Morphine (for pain management), Atropine, dopamine, Epidrine, Epton, Norepinephrine, Emiset, and Anti-Snake Venom.
- Availability of essential medical equipment, including endotracheal tubes for airway management.
- A dedicated haemodialysis unit with three dialysis machines, managed by professionals and students specializing in haemodialysis.
- Close monitoring of patients undergoing dialysis to ensure their safety and comfort.
- Strict adherence to infection control practices, including proper disposal of dialysis tubes.

5. Waste Management:

The hospital follows a structured medical waste management system, segregating waste into different categories:

- **Red:** Contaminated waste (e.g., IV tubes, catheters).
- **Yellow:** Pathological waste (e.g., human tissues, body fluids).
- **White:** Sharps waste (e.g., needles, scalpels).
- **Black:** General waste (e.g., non-hazardous waste, expiry products).

Interaction with Healthcare Professionals

During the visit, we interacted with oncologists, pathologists, nurses, and other medical professionals. They provided valuable insights into:

- The importance of early detection and screening.
- Challenges in cancer treatment and patient management.

Equipment Observed in the Hospital:

1. CT Scan Machine:

The hospital has a Toshiba 4th Generation CT scanner, which provides high-resolution images for accurate diagnosis.

It is used to detect tumours, assess cancer stages, and guide treatment plans. The machine works by rotating X-ray beams around the patient to capture detailed cross-sectional images of internal structures.

Radiation safety measures are in place:

- The CT scan staff, wear radiation **monitoring badges** to track exposure.
- The scanning room has an **L-shaped entry** to prevent direct radiation exposure.
- Camera and voice speakers are connected to the scanning room, allowing staff to monitor patients and communicate with them for comfort.
- Thermoplastic moulds are used to help patients maintain the correct posture during scans.
- The professionals explained the entire process clearly and answered all our doubts.

Computer Systems & Integration:

- The hospital uses an advanced computer system linked to medical equipment for image processing, data storage, and communication between departments, improving accuracy and efficiency.
- ### 2. Mammogram:
- Mammography is a specialized X-ray imaging technique crucial for the early detection and diagnosis of breast cancer, significantly improving survival rates. It is classified into screening mammograms, conducted as a preventive measure, and diagnostic mammograms, used for symptomatic patients.

- Although commonly associated with women, men are also advised to undergo mammographic screening, especially those at high risk. For women above 40 years, screening every three years is mandatory.
- The two standard imaging techniques in mammography are Cranio-Caudal (CC) view, which provides a clear image of the central and medial breast tissue, and Mediolateral Oblique (MLO) view, which captures both the upper and lower breast tissues at a 40–60° angle.
- Mammography remains a vital tool in breast cancer prevention and diagnosis, enabling early detection and improving treatment outcomes. Its continued advancements reinforce its role as a life-saving medical innovation.

3. Thermogram:

- A thermogram uses infrared imaging to detect heat patterns and blood flow, helping identify tumours.
- Unlike mammograms, it does not use radiation, making it safer for frequent monitoring.
- It is especially useful for detecting inflammatory breast cancer and is often used alongside mammograms for better breast health assessment.

4. Colposcopy:

- During our visit, we were introduced to the colposcopy procedure, which involves the use of a specialized magnifying instrument (colposcope) to examine the cervix in detail.
- This diagnostic technique is essential for detecting cervical abnormalities, including inflammation, genital warts, and noncancerous growths.
- The colposcope and its functionality were demonstrated and explained, highlighting its role in early detection and precise diagnosis of cervical conditions.

5. Thermoplastic Mould Room:

- The visit to the Thermoplastic Mould Room provided valuable insights into the creation and use of custom-fitted thermoplastic masks for patient immobilization during radiation therapy.
- We observed the process of heating low-temperature thermoplastic sheets (60-70°C), moulding them to the patient's body, and using them to ensure precise and reproducible positioning in each session.

- Each patient receives a unique mould, but in cases of shortages, previously used moulds are softened and reshaped for reuse. Headrests are universally used to enhance stability.
- This visit highlighted the critical role of immobilization in radiation accuracy, patient comfort, and treatment efficiency in oncology.

6. Radiotherapy Department:

- Radiotherapy is a crucial treatment modality in cancer care, either as a standalone therapy or in combination with surgery and chemotherapy.
- We first visited the External Beam Radiotherapy (EBRT) Room, where radiation is delivered from outside the body.
- The room is designed with an L-shaped entry to ensure radiation safety.
- Historically, Cobalt-60 was used as a radiation source, but with advancements in technology, Linear Accelerators (LINACs) have replaced it, making Cobalt-60 obsolete.
- While entering, we observed a patient preparing for the procedure, appropriately dressed and fitted with thermoplastic moulds to ensure precise positioning during radiation therapy.
- Advanced radiotherapy techniques such as Intensity-Modulated Radiation Therapy (IMRT) and Image-Guided Radiation Therapy (IGRT) are available at Harshamitra Hospital, enhancing treatment precision and effectiveness.

7. X-ray Room:

- We also visited the X-ray room, where diagnostic imaging is performed. Previously, lead was used for radiation shielding due to its high atomic number and density, but it is now less common due to its weight and other limitations.
- The X-ray machine operates at a high radiation level (10^6 units) to capture images. The radiation passes through the body onto a cassette, which records the image on an imaging plate. Contrast dyes are also used to highlight structures like the ureters and oesophagus, making it easier to detect abnormalities.

8. Brachy Therapy:

- Brachy Therapy is an advanced form of internal radiation therapy, where radioactive sources such as seeds, ribbons, or capsules are placed directly inside or near the tumour. This highly

targeted approach enhances the precision of radiation delivery while minimizing exposure to surrounding healthy tissues. Recently, Harshamitra Cancer Super Speciality Hospital launched Trichy's first 24-channel Brachytherapy system, marking a significant milestone in regional cancer care.

- This treatment method is particularly effective in managing cancers such as breast cancer and cervical cancer. It can be used as a standalone treatment or in conjunction with surgery, external beam radiation therapy, or chemotherapy. In some cases, brachytherapy is performed post-surgery to eliminate residual cancer cells.
- During our visit, we observed a cervical cancer patient undergoing brachytherapy through a real-time monitoring system. The treatment process involved the use of Iridium-192, a radioactive isotope implanted directly into the tumour for precise radiation delivery. The hospital employs Gamma MedPlusiX, a state-of-the-art brachytherapy machine, ensuring optimal therapeutic outcomes. To maintain strict safety protocols, the therapy room is equipped with high-resolution cameras for continuous patient monitoring, and a computerized system ensures proper room sealing and controlled radiation exposure, preventing accidental leaks.

Cancer Awareness Lecture:

At the end of our visit, we attended an insightful lecture by Dr. P Sasipriya Govindaraj M.B.B.S., M.D. DMRT., Chief Radiation Oncologist.

The session focused on:

- Types of cancers (breast, cervical, oral, prostate, colon, ovary and skin)
- Cancer prevention strategies.
- The latest advancements in oncology treatment.
- The significance of medical research in improving patient outcomes.

Acknowledgment

- We sincerely extend our deepest gratitude to our esteemed Head of the Department for his visionary leadership and unwavering support in organizing this invaluable hospital visit. His dedication to our academic excellence and commitment to providing us with enriching learning experiences are truly commendable.

- We also express our heartfelt appreciation to our respected Professors for their guidance, encouragement, and relentless efforts in shaping our academic journey. Their mentorship continues to inspire us to strive for excellence in our field. We thank Bharathidasan University Administration for allowing us for the visit and for providing us with transportation facilities.
- Furthermore, we extend our profound gratitude to the Managing Director and the distinguished medical team at Harshamitra Super Speciality Cancer Hospital for their exceptional hospitality and willingness to share their expertise. Their dedication to medical excellence and compassionate care is truly admirable. We are deeply grateful for the opportunity to explore the facility, engage in meaningful discussions, and attend the insightful awareness lecture that broadened our understanding of oncology. This experience has been immensely educational and inspiring, and we sincerely thank them for their time, generosity, and efforts in making it possible.

Conclusion:

The visit to Harshamitra Cancer Super Speciality Hospital was an enlightening experience that provided us with in-depth knowledge about oncological healthcare. Observing the hospital's structured patient care, advanced treatment methods, and dedicated medical staff was truly inspiring. We appreciate the hospital's commitment to patient well-being and innovative medical practices.

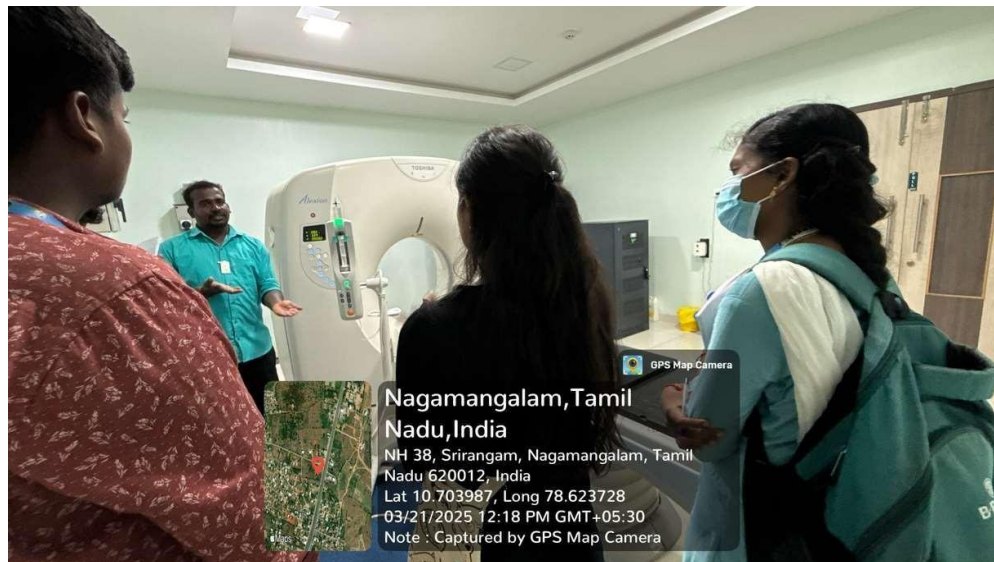
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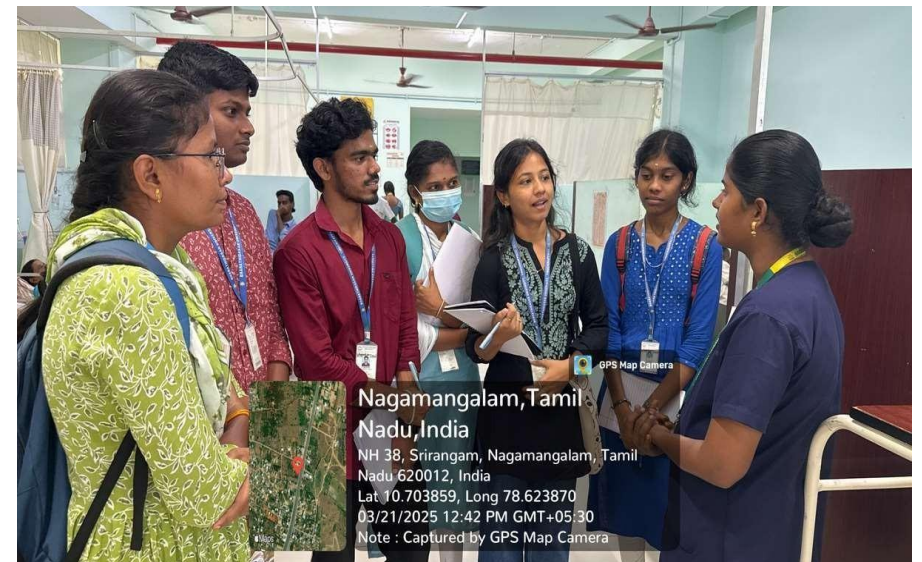
1. Harshamitra Super Speciality Hospital



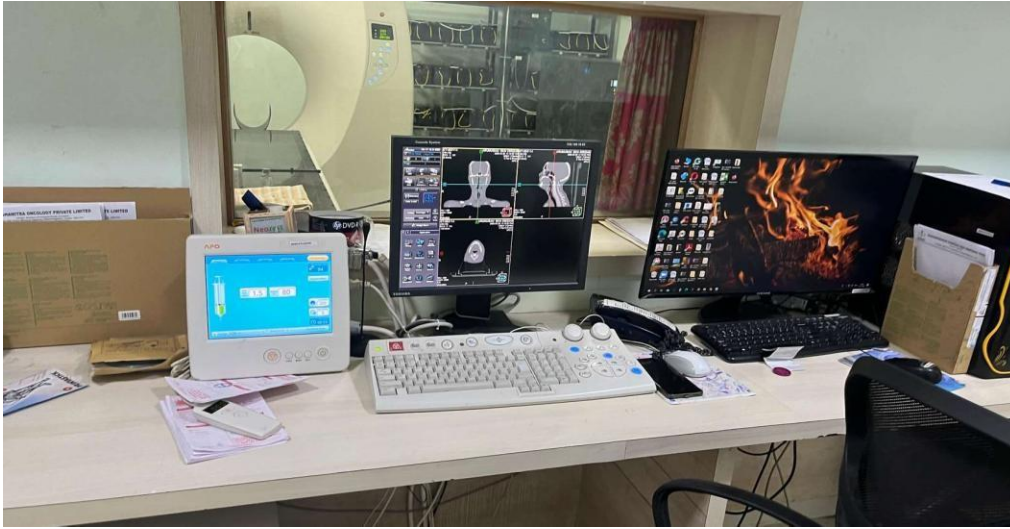
2. General ward



3. CT Scan Facility



4. Inpatient Ward



5. CT Scan Image Analyzing Room



6. Ultra Sound and Physiotherapy Room



7. Hemodialysis Unit

 HARSHAMITRA Super Speciality Cancer Centre & Research Institute (P)Ltd.,				
Yellow	Red	Blue	White	Green
- Human Tissues - Organs, Body Parts - Items Contaminated with blood and body fluids (Like cotton, Gauze) - Discarded blood and blood products - Discarded Medicines - Cytotoxic drugs along with glass (or) Plastics, Ampoules, Vials etc. - Silver X-Ray film developing liquid, discarded formalin, infected secretions, aspirated body fluids - Liquids from laboratories and floor washing, cleaning.	- Infected - plastic - Tubings - Bottles - IV Tubes - Catheters - Urine Bags	- Glass ware - Broken Ampoules - Empty Vials - Metallic body implant	- Needles - Syrings with fixed - Needles - Scalpel - Blades	General Waste
- ശരീര ഭാഗങ്ങൾ - ഓർഗനുകൾ, ശരീര ഭാഗങ്ങൾ - മലിനമായ രക്തം, ശരീര ദ്രവങ്ങൾ (കോട്ടൺ, ഗ്യാസ്) - രക്തം, രക്ത ഉല്പന്നങ്ങൾ - തള്ളിയ മരുന്നുകൾ - സൈറ്റോടോക്സിക് മരുന്നുകൾ കൂടാതെ ഗ്ലാസ് (അല്ലെങ്കിൽ) പ്ലാസ്റ്റിക്, അമ്പൂൾ, വിയൽ മുതലായവ - സിൽവർ X-റേ ഫിലിം വികസിപ്പിക്കുന്ന ദ്രവം, തള്ളിയ ഫോർമലിൻ, കൈകൾ, ശരീര ദ്രവങ്ങൾ - ലബോറട്ടറിയിൽ നിന്നും വാഷിംഗ് ലിക്വിഡ്	- കൈകൾ, പ്ലാസ്റ്റിക് - ട്യൂബിംഗ് - ബോട്ടിൾ - IV ട്യൂബ് - കാതറൈസ് - യൂറിൻ ബാഗ്	- ഗ്ലാസ് വെയർ - തകർന്ന അമ്പൂൾ - വിയൽ - മെറ്റാലിക് ബോഡി ഇംപ്ലാന്റ്	- നീഡിൾ - ഫിക്സ്ഡ് സിറിംഗ് - നീഡിൾ - സ്കാൽപ്പൽ - ബ്ലേഡ്	ജനറൽ വാഷ്

8. Waste Management Chart



9. Mammogram



10. Emergency Medicines



11. LINAC (External Radiotherapy)



12. Emergency Ventilator Room



13. Cancer Awareness Lecture



14. Brachy Therapy



15. During Travel



16. Our Team with the Executive Director of Harshamitra Super Speciality Cancer Hospital