

**Internship at
Bhagwan Mahaveer Cancer Hospital, Jaipur**

By

Kanika Arora

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The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer Airport
Jaipur-302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: www.iihmr.edu.in

1.0 Introduction

BhagwanMahaveer Cancer Hospital and Research Centre, Jaipur (BMCHRC) came into existence in the year 1997 with initial bed strength of 50 beds as a beginning. But gradually picked up with fast developments with regards to infrastructure, installation of latest modern equipment's, facility of OTs and 5 bedded ICU. Similarly, Surgical Oncology, Medical Oncology, Radiation Oncology, Radiology, Pathology, Blood Bank Departments were also equipped and well defined comprehensive state-of-art care facilities with bed strength of 150 were made available to the patients under one roof at BMCHRC.

At present with the construction of separate 9 floor IPD block (PhepKanwar Kothari Memorial IPD), the bed strength has been further raised to 200 within no time in the interest of patient care being imparted here and have consistently achieved significant progress.

Under the constant supervision and guidance from the members of the management especially Chairman, Managing Trustee and Sr Vice Chairperson, this hospital has made a land mark in delivering cancer care services to the afflicted population of the nothern part of the country.

Vision

To make BhagwanMahaveer Cancer Hospital and Research Centre (BMCHRC) comprehensive world class Cancer treatment centre with cutting edge technology.

Jaipur, the state capital of Rajasthan is the largest populated city in this region known for its art, culture and more. Though, there are quite good number of Government as well as private health care centers to cater to the needs of the suffering community, but still was lacking in specialized center which could take care of cancer patients. Ever since, various developments were initiated by the public as well as private sector to improvise the health care, but failed to establish a cancer care center in the state which was a dire need. As a consequence due to lack of proper infrastructure and treatment facilities, patients had to go out of Jaipur i.e. to Delhi, Mumbai, Vellore and other places for treatment which of co33urse is not in reach of many patients who had to give up in need of treatment.

In the year 1992 on the auspicious occasion of MahaveerJayanti, an idea of establishing Cancer hospital in the city was explore amongst the august gathering of enlightened citizens of Jaipur in the presence of the then Chief Minister of Rajasthan and a draft proposal was submitted to the Government. A piece of land measuring 22166 sq.yards was allotted on a token price of Rs.1/-only and Shri N.R.Kothari, Chairman, K.G.Kothari Memorial Trust was asked to take up this project under his stewardship to fulfill the long awaited need of establishing separate cancer hospital in the city to benefit thousands of peoplein Rajasthan suffering from this dreadful ailment.

Though, the initial construction was started and some of the infrastructure was erected with the available funds from donations, but in the year 1995, fresh donations were almost negligible and it was not possible to move forward without sufficient funds. At this juncture, a team of trustees led by Shri VidyaVinodji Kala, Shri VimalChandjiSurana approached Shri N. R. Kothari with an appeal to extend his support and boost the project. Considering the social motive behind the project i.e. serving the suffering community specially cancer patients, K. G. Kothari Memorial Trust decided to take up BhagwanMahaveer Cancer Hospital and Research Centre, at Jaipur with the aim to make available the world class cancer care center with cutting edge technology so as to eliminate the problem of cancer in this part of the country.

Mission:

The MISSION was to create a comprehensive tertiary care center for cancer treatment where patients are served with world class facilities.

The ultimate PHILOSOPHY behind this project is to keep in pace with modern advancements so as to update the treatment facilities with time in providing best possible treatment to the cancer patients irrespective of caste, creed and nationality. The ultimate goal is to make this hospital one of its kinds not only in Rajasthan but finest amongst all the centers in north India.

“To control & eliminate the problem of Cancer & to alleviate the suffering of cancer patients in the Country.”

Quality Assurance Department

Quality Management Department focuses broadly on the four core principles for quality assurance in the institution. They are as follows:

1. Patient (customer)
2. Hospital delivery systems (systems and processes)
3. Analysis and problem identification (performance measurement)
4. Team work

Quality Policy

BMCHRC provides total health care to its patients, with the highest levels of skill, professionalism and ethical practice, leading to their effective care and treatment at affordable costs. BMCHRC is committed to Continued Quality Improvement.

Quality department brings forward the innovative ideas for the patient safety & quality services, feasibility study, planning, implementing & control process.

Milestones:

- Allotment of land for BhagwanMahaveer Cancer Hospital and research center on October 20th 1992.
- BhoomiPujan by Hon'ble Vice –President of India Shri Bhairon Singh Shekhawat on 23rd October, 1992.
- Inauguration of Preliminary Services at BMCHRC 23rd October 1997
- Inauguration of Acharya HastiBhawan by Hon'ble Chief Minister of Rajasthan Shri Ashok Gehlot 28th January, 2001
- CT scan and ColourDopler inaugurated by Medical & Health Minister Shri B.D. Kala on 9th June 2003.
- Linear Accelerator inaugurated by Hon'ble Vice –President of India Shri Bhairon Singh Shekhawat on 25th March 2005.
- Phepkanwar Kothari Bhawan (Foundation Stone by Hon'ble Vice –President of India Shri Bhairon Singh Shekhawat on 23rd October, 2005.
- Nursing College Inaugurated on 12th May, 2006.
- I.M.R.T. and KesariBhawan Inaugurated by Hon'ble Vice –President of India Shri Bhairon Singh Shekhawat on 23rd October 2008.
- Inauguration of PET CT & GAMA Camera by Hon'ble Chief Minister of Rajasthan Shri Ashok Gehlot on 23rd October, 2010.

- Second Varian Linear Accelerator inaugurated by Shri S.K. Shrivastav, Head of Department, Radiation Therapy, Tata Memorial Center on 30th July 2011.
- Pain and Palliative Ward Started 4th June 2012.
- Inauguration of Advanced Operation Theatre & Surgical I.C.U. by Hon'ble Chief Minister of Rajasthan Shri Ashok Gehlot on 4th September, 2012 Phepkanwar Kothari Bhawan (Inauguration by Hon'ble Chief Minister of Rajasthan Shri Ashok Gehlot on 29th August, 2013).

Facilities

BMCHRC provides various facilities and services. Besides professional care and support, hospital management is taking care of patients' inner comfort as well. Small greenery center while entering hospital stimulates inner calmness and relaxation. At hospital, patients have access to library and internet. The library is constantly enriching and is open 6 days a week.

Diagnostic Service

Radio Diagnosis Department

- 16 SLICE CT Scan (With Latest Technology)
- Mammography (To Diagnose breast Cancer)
- Color Doppler - 3
- Digital X-ray – 1
- OPG
- Colposcopy

Pathology Department

- Hematology
- Biochemistry
- Cytology
- Histopathology
- Microbiology
- Serum Marker Studies
- IHC Marker
- Clinical Pathology

Treatment Facilities

- Radiation Oncology Department
- Two Linear Accelerators (First in Rajasthan with technology of Rapid Arc, IGRT, IMRT and 3DCRT)
- Breakey therapy
- Cobalt

Nuclear Medicine Department

- PET CT 16 SLICE (First in Rajasthan)

- Gamma Camera (For Bone Scanning)
- Radio Iodine Therapy (First & Only in Rajasthan only for Thyroid Cancer Patients)

Medical Oncology Department

- Day Care Ward (40 Bedded for Chemotherapy Patients)
- MICU

Surgical Oncology Department

- Operation Theatres
- 1 Integrated OT
- 3 Modular OT's
- 2 Other OT's
- 1 Endoscopy Theatre
- 14 bedded I.C.U

Department of Anesthesia & Palliative Care

- Home Care Facility provide by Palliative care to terminally ill patients

Blood Bank

- 24 hour available (all fractions of Blood)

Clinical Research Department

Pharmacy

- 24 hour available & Medicine are available at reasonable rates

Preventive Oncology

- Mobile Unit - available for rural areas
- Nursing College (MSc, BSc & GNM Courses)
- Nursing Hostel
- Supportive facility
- Dietary Facilities
- Physiotherapy Facilities
- Newly Constructed IPD Block (9 story 200 Bedded)

Floor wise Facilities Arrangements-

Basement (old Wing)

- Pathology
- Blood bank

Basement (New Wing)

- CSSD
- Laundry
- Maintenance (Biomedical/ Electric etc..)

- Medical gases
- Housekeeping

Ground floor

Clinical-

- Nuclear medicine
- Radiation Oncology
- Day Care
- Dental Dept

Non Clinical

- Reception
- Trust Office & Liaison Office
- PRO Office
- IPD Billing
- EPABX
- Canteen/ Cafeteria

Outside Area

- Pharmacy
- Bhojnalya
- Parking
- Bank

1st Floor (Old Wing)

- OPD (Medical/ Surgical)
- Radiology
- Internal Medicine
- Cancer Care
- Administration
- OPD Registration & OPD Billing
- Medical ICU
- Endoscopy
- OT
- PAC
- Emergency
- BPL Counter

1st Floor (New Wing)

- Gynaecology
- Physiotherapy
- Ward
- New Cancer Care
- Emergency
- MCU
- Palliative care

2nd Floor-

- New OT Complex
- Surgical ICU
- Ward II
- Pediatric Ward
- Patient Waiting Area

3rd Floor-

- Ward III (For General / BPL Patients)
- Deputy Nursing Superintendent

4th Floor

- Ward 4
- Discharge Section

5th Floor

- Department of Clinical Trials & Research
- Hospital Library
- HR
- Accounts
- Purchase
- MIS

6th Floor

- Semi Private Ward
- Super Deluxe Ward

7th Floor

- Deluxe Ward
- Super Deluxe Ward

A Block

- Residential Block

Specialties**Medical Oncology**

The department of Medical Oncology is engaged in active treatment of patients suffering from acute lymphoblast leukaemia, acute myeloid leukaemia, Hodgkin and Non-Hodgkin lymphoma, multiple myeloma, breast cancer, lung cancer, ovarian cancer, colorectal cancer, hepato-biliary and pancreatic cancer, esophageal cancer, prostatic, urinary bladder, and kidney cancer.

The department, in collaboration with radiation oncology, is engaged in concurrent chemo radiation of head and neck cancer, cervix cancer, lung cancer etc.

The Medical oncology department is also engaged in the treatment of hematological disorders such as myelodysplasia, aplastic anemia etc. With the establishment of state-of-the-art blood bank facilities we are soon going to start high-dose chemotherapy with autologous bone marrow transplantation in cases of leukemia, lymphoma, myeloma and solid tumours with poor prognosis.

Scope of Services-

- Now patients are being given chemotherapy in day case which is convenient to the patient. Our day care centre has 40 beds and is open from 9.00 am till 9.00 p.m.

The day care concept has been encouragingly welcomed by the patients as they are obviously benefitted as below:

- More convenient, as patients can return home the same day. It is less stressful particularly for children.
- Perception of being sick is reduced.
- Separate Paediatric oncology department.
- Clinical trial facilities – Phase I, Phase II, Phase III studies are being conducted.
- Isolation ward for neutropenia patients.
- Emergency services are available round the clock.

Internal Medicine The Department of Medicine provides a broad range of services for patients at the BMCHRC. The department meets the needs of –

- Patients with acute complications including infections, pulmonary complications, cardiovascular disease and metabolic disorders.
- Inpatient consultation service for management of medical illnesses of patients undergoing surgery, radiotherapy and chemotherapy.
- Complex surgical patients too are attended at our clinic where potential medical risk factors for surgery can be identified and their risk for surgery is estimated.
- Out patient consultations are also provided to patients who have medical illnesses such as diabetes or heart disease that require specialized management during their course of cancer treatment.
- Referral consultations to the intensive care unit and to the step down units.

On an average 15000 consultations are carried out annually by the department.

The department of medicine conducts the following specialty clinics:

1. Cancer thrombosis clinic: All deep vein thrombosis and pulmonary embolism patients are registered, worked up, treated and followed up.
2. Cardiomyopathy Clinic: Patients diagnosed with cardiac dysfunction following chemotherapy and radiotherapy is registered and are offered long term treatment.

The medicine department offers following services:

1. Echocardiography: A state of the art 3-D echocardiography machine is available for transthoracic, trans esophageal echocardiography. Annually about 5000 echocardiography's are carried out. In addition it has a portable unit to conduct emergency bedside 2D echo in the intensive care unit.
2. Pulmonary Function Testing laboratory: On an average about 2000 PFTs are carried out annually The main patient load being pre and post op Lung cancer patients, follow up of patients who have received Bleomycin, breast cancer patients receiving radiotherapy
3. Electrocardiography: About 16,000 ECGs are carried out each year.

Surgical oncology

Department of surgical oncology became functional from November 1998. The department has a team of well qualified, experienced surgical oncologists. Operation Theatre staff is well trained and experienced to assist all types of major & supra major surgeries.

Operation Theatre complex consists of four ultramodern and sophisticated seamless modular theatres developed by Karl Storz Germany, first of its kind in Rajasthan.

ORI is the latest operating theatre concept with fully integrated for Laparoscopic surgeries (Minimally Invasive) routine surgeries.

ORI have 3 LCD H.D. touch screens for viewing the procedure. One wall mounted LCD screen and camera for live audio and video conferencing & recording for further references and teaching purposes.

Centre specializes in:-

Head and Neck Oncology

Breast Oncology

Thoracic Oncology

Gastro Intestinal Oncology

Genito Urinary Oncology

Gynec-Oncology

Bone and Soft Tissue Oncology

Minimally invasive surgery (MIS)

Colostomy clinic

Dietician

Physiotherapy

Acute pain service

Palliative care services

Radiation Oncology

The department has the distinction of starting of the first linear accelerator facility in Rajasthan. At present it has the state of art radiation treatment facilities and well trained faculty to manage this ultra modern Department.

The treatment facilities include:

1. High energy Linear Accelerator (Clinac IX) with 3DCRT, IMRT, IGRT and Rapid Arc facilities – to deliver very precise treatment in less than five minutes.
2. High energy Linear Accelerator with 3DCRT & IMRT technologies – To deliver highly conformal Radiation Therapy.
3. Ultra-modern computerized treatment planning systems.
4. Dedicated PET CT scanner and CT scanner for radiation therapy planning. MRI fusion facility is also available.
5. HDR Brachytherapy machine to treat mainly gynecological, esophageal, head & neck, breast & soft tissue malignancies with CT compatible applicators.
6. Well-equipped mold room to cast customized immobilization devices for each patient for precise treatment delivery.
7. Tele cobalt machine

Nearly 200 odd patients receive treatment in radiation oncology department per day. Thorough pretreatment and post treatment counseling is done for each patient. In house dietician takes care of all the dietary problems faced by the patients undergoing radiation therapy.

Hematology Oncology

Hematology is the study of blood, the blood-forming organs, and blood diseases. Hematology includes the study of etiology, diagnosis, treatment, prognosis, and prevention of blood diseases

Haematologist is a person who is expertise in the following diseases:

- Chronic leukemias- Chronic myeloid leukemia (CML), Essential thrombocytosis (ET), Myelofibrosis, Chronic lymphoid leukemia (CLL).
- Acute leukemias-Acute lymphoblastic leukemia (ALL), Acute Myeloid Leukemia(AML).
- Lymphomas- Hodgkins lymphoma, Non hodgkins lymphomas (NHL).
- Plasma cell dyscrasias - Myeloma, Amyloidosis.
- Anaemias- Nutritional, Autoimmune hemolytic anaemias, Anaemia of chronic disease.
- Thalassemias, Sickle cell disease.
- Thrombocytopenias- ITP, Platelet disorders.
- Leucopenia, Leucocytosis, Eosinophilia.
- Pancytopenia, Aplastic anaemia, Myelodysplastic syndrome (MDS).
- Polycythemia, Thrombocytosis.
- Bleeding disorders- Haemophilias, Von willebrand disease (VWD), others.
- Thrombotic disorders- Deep vein thrombosis (DVT), Cortical vein thrombosis (CVT), Pulmonary thromboembolism (PTE), and Abdominal vessel thrombosis.
- Disseminated intravascular coagulation (DIC).
- Pregnancy complications-Thrombocytopenia, Recurrent, pregnancy loss, Antiphospholipid antibody syndrome (APLA), Protein C & Protein S deficiency.

Gynecologic Oncology

Female patients can avail the following services in this department which is headed by senior specialized gynecologic oncologist.

Preventive services for all female genital cancers. This includes gynecological examination, Pap smear, Colposcopy, Hysteroscopy etc..

Treatment of all gynecological cancers in all age groups, specialized services for younger ladies in the form of Ovarian and hormonal function conservation wherever applicable.

Follow up and further screening for all treated patients.

Anesthesiology-

Anesthesiologist seeks to encompass the entire Perioperative experience from Perioperative evaluation to intra operative regional or general anesthesia to post anesthesia care unit (PACU).

Our hospital having ultra-modern operation theater well equipped with advanced anesthesia work station, non-invasive and invasive monitors, infusion pumps, fiber optic bronchoscope for difficult intubation, body warmer it keep patient warm while prolong surgeries. Key works of the department:

- Preoperative assessment and Perioperative of patient for anesthesia.
- Conducting all major and supramajor cancer
- Monitoring maintenance of normal physiology during Perioperative period.
- Management of acute post-operative pain with the help of PCA pump, epidural infusion, nerve blocks, continuous I.V. Infusion.
- Management and teaching of cardiopulmonary resuscitation.
- Supervision & Teaching at both medical paramedical personnel involved in Perioperative period.
- Conducting teaching programs for senior residents and paramedics and providing fully encouraging academic environment for research activities.

The department of critical care includes state of the art medical and surgical critical care units governed by department of anesthesiology.

Surgical Intensive care unit (SICU)

OT are supported by SICU well designed for proper patient care. The surgical critical care unit has 16 fully equipped beds. SICU has infusion pumps, PCA pumps for post operative pain management, DVT pump for DVT prophylaxis. Aim is early recovery of patient by providing good pain relief, early respiratory physiotherapy, and early ambulation

Medical Intensive care unit (MICU)

Our medical ICU is fully equipped with 5 beds. We are having modern ventilators Bipap ventilator, invasive and noninvasive monitors.

It provides sophisticated care to seriously ill cancer patients involving a multidisciplinary team of oncologists' physicians, physiotherapist nutritionist, and psychologist and well experienced critical care nurses.

Preventive Oncology

Since 1999 to December 2013 BMCHRC has organized total 872 Camps screening 142775 patients out of which 6464 suspected cases were referred for further diagnostic workup.

In the larger interest of community camp teams comprising of General Physician, Oncologist, Gynecologist, ENT Specialist, Radiographer, Paramedical & Nursing Staff dedicate their services at the door steps of needy and deserving patients.

In the Preventive Oncology Department NurgisDutt Memorial Mobile Van and Mammography Mobile Van – which are equipped with Mammography, X-ray Machine, Dark room, Laboratory procedures Room, air conditioner and Genset have proved their worth for early detection of breast cancer and lung cancer etc..

Mammography Mobile Van is also equipped with the hardware and software of telemedicine with the help of which X-ray and Mammographies performed at distance remote areas can be sent to and studied by radiologist at BMCHRC, Jaipur and his observations can be reported back at the distant camp site.

Publishes year wise the summary and detailed data's about the camps, so that they can be made useful to the policy makers program managers, NGO's and other Charitable institutions in planning such activities. BPL and Poor new Cancer Patients diagnosed at various camps Special campaigns for youths in colleges, clubs, factories etc., where effective cancer awareness development is done.

Palliative Care / Home Care Services

The World Health Organization defines palliative care as care which focuses on patients with life-threatening diseases. Palliative care improves the quality of life of patients and families who face life-threatening illness, by providing pain and symptom relief, spiritual and psychosocial support from diagnosis throughout the course of illness. Palliative care is often referred to as supportive care or symptom control. If the patient's cancer cannot be treated, then the palliative care focus shifts to end-of-life care. Palliative care includes:

- Treatment of pain and other physical symptoms, such as fatigue, nausea, constipation, poor sleep, loss of appetite and weight loss
- Treatment of emotional symptoms, such as depression and anxiety
- End of life care

Day Care services:

Day care services provided include paracentesis, intravenous titration of analgesics, lymphoedema management and transcutaneous nerve stimulation and counseling.

Home Care services:

A dedicated and professionally qualified trained interdisciplinary team consisting of doctor, nurses and counselor provide home care to the patient with advanced cancer. The team visits the patient at home and provides medical, psycho social and emotional support. Weekly visits and follow-up are also done.

Telemedicine

"BMCHRC has partnered with TeleChikitsa, a telemedicine company to bring an opportunity to consult some of the leading researchers in the field of Oncology or any other specialty.

TeleChikitsa enables you to schedule and talk to the top American doctors in their fields right from the comfort of their telemedicine suite installed in BhagwaanMahaveer Hospital. You also have a choice to continue the follow up treatment with your own physician or physicians at BMCHRC.

TeleChikitsa, provides peace of mind by making sure that the treatment plan you are following is correct and if it needs to be modified, it can be done well in time to achieve optimal results. TeleChikitsa offers full service consults as well as second opinions for your radiology and pathology tests.

Ostomy Clinic

BhagwanMahaveer Cancer Hospital, Jaipur provides ostomy care for all types of ostomies. It trains patients and their attendants in ostomy care. It also provides the required counseling to the patients.

Procedure:

- 1.Theostomy patient must be referred by the surgeon for ostomy care.
- 2.The patient must get registered at the OPD Counter of BMCHRC for ostomy care. The registration will be free.
- 3.Clinic will provide free care services as per the instructions of the treating surgeon.
- 4.The services are available to both BMCHRC patients and patients from other hospitals.

Nuclear Medicine

Nuclear medicine specialists use safe, painless, and cost-effective techniques to image the body and treat disease. Nuclear medicine imaging procedures often identify abnormalities very early in the progress of a disease, long before many medical problems are apparent with other diagnostic tests.

Nuclear medicine uses very small amounts of radioactive materials (radiopharmaceuticals) to diagnose and treat disease. In imaging, the radiopharmaceuticals are detected by special types of cameras that work with computers to provide very precise pictures about the area of the body being imaged. In treatment, the radiopharmaceuticals go directly to the organ being treated. The amount of radiation in a typical nuclear imaging procedure is comparable with that received during a diagnostic x-ray, and the amount received in a typical treatment procedure is kept within safe limits.

About PET-CT

PET scans are commonly used to investigate the following Human Conditions. :

Cancer

Heart

Epilepsy

Alzheimer's

Medical