

INTRODUCTION

Vision

- To become preferred healthcare provider for all.
- Partnership in caring and curing.
- Providing excellent medical care to customers

Mission

- To provide competitive, innovative and accessible medical care to the patients.
- To facilitate improving the health of patient by providing quality service through professionals that is affordable and delivered.

Bed Capacity : 250 **Bed Occupancy :** 219

Specialty: Advanced neurosciences & trauma center

Specialized Mother & child care unit

AIMS & OBJECTIVE

Aim- Prerequisite of establishing a radiation oncology department..

Objectives-
To provide prerequisite of radiation oncology department
Study of radiation oncology department in hospitals of Delhi/NCR

Methodology

Type of study: Descriptive

Location of study: Delhi/NCR

Duration of study: one month

Data collection tool: observation

Data analysis: MS Excel

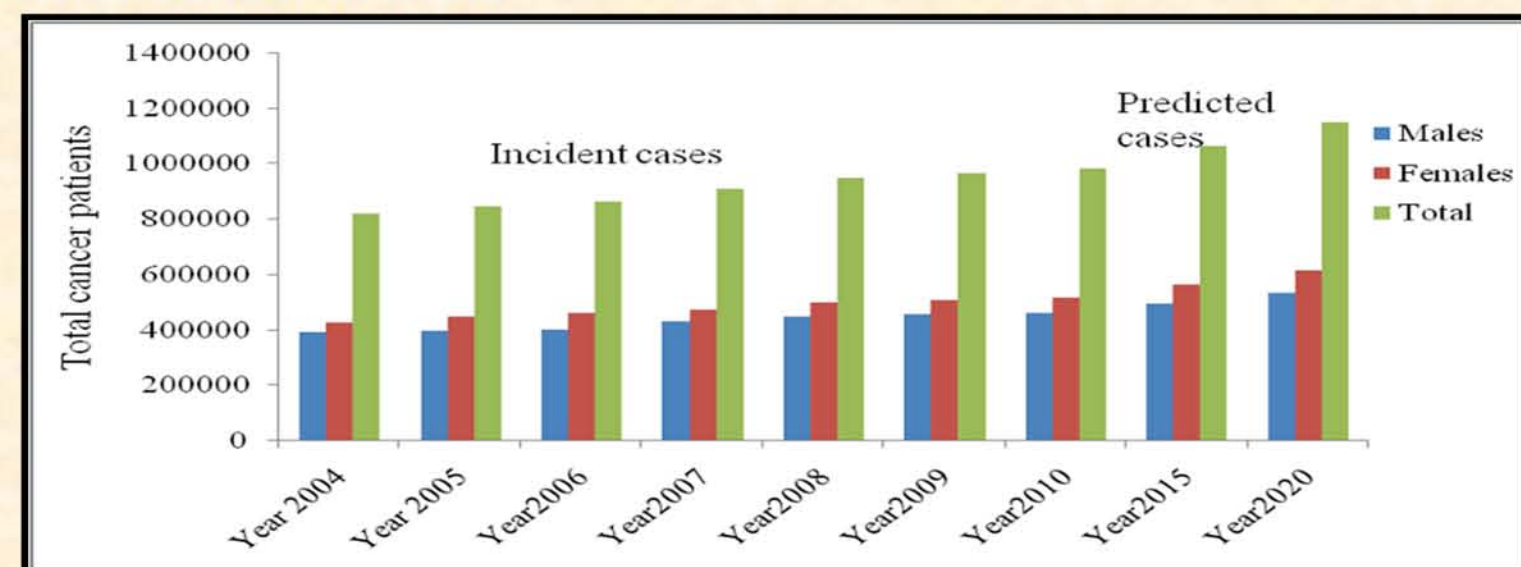
- Cancer is the one of the top causes of deaths in India after heart attack up to from 7th position in 2000.
- The ratio of oncologist to cancer patients is about 1:2000.

Study of Radiation Oncology Department in Hospitals of Delhi/NCR

PARAMETERS	MAX Hospital , Patparganj	Asian Institute of Medical Sciences , Faridabad	Artemis Hospital, Gurgaon		Brachytherapy machine (Nucletron) · 18 channeled · Area monitor · Oxygen outlet · Ir192 isotope · transfer cables console room · Equipments of minor OT	Brachytherapy machine (Nucletron) 24 channeled Area monitor Oxygen outlet Ir192 isotope transfer cables Equip. of minor OT	Brachytherapy machine (Nucletron) 18 Channeled Ir192 isotope oxygen outlet transfer cables area monitor Console room
Location	Basement 3	Basement 2	Basement 1	Brachytherapy room			
Surrounding Departments	·RO room ·UPS LT room ·Security room ·IT	·Nuclear medicine ·HR ·Marketing ·IPD Billing ·IPD Pharmacy ·IT ·Laundry ·Staff canteen	·Nuclear medicine ·Ophthalmology department ·Dialysis ·CSSD ·Linen & laun-				
Mould Room	·Masks ,Water bath machine ,Vac. Lock Hotpot , Styrofoam cutter ,Laser , Head & neck rest	·Masks ,Water bath machine ,Vac. Lock , Styrofoam cutter ,Laser Head & neck rest	·Masks , water bath machine ,laser machine Head & neck rest	LINAC Room	·LINAC machine (Varian) width of Primary wall- 5-5.5 m Width of maze- 2-2.5 m Storage cart Stand for total skin therapy Oxygen outlet	·LINAC machine – (Varian) Storage cart Oxygen outlet	Linear accelerator machine – Elekta Width of maze 1m Width of primary wall 2- 2.5 m. Neutron door Storage cart Oxygen outlet
CT Simulator Room	- CT Machine (Siemens) - Laser lights - Oxygen Outlet - Crash cart			Total Patients Breakup	New cases-40-45 pt/ month Brachytherapy- 9-10 Pt/ month Teletherapy-45-50 pt/ day ·Palliative care-5-6 pt/day	New cases- 15-20 pt/ month Teletherapy -4-5pt/day Brachytherapy – 6-7 pt/ month	·New cases-20-25pt/ month Teletherapy- 30-35 pt/ day Brachytherapy – 10 pt/month



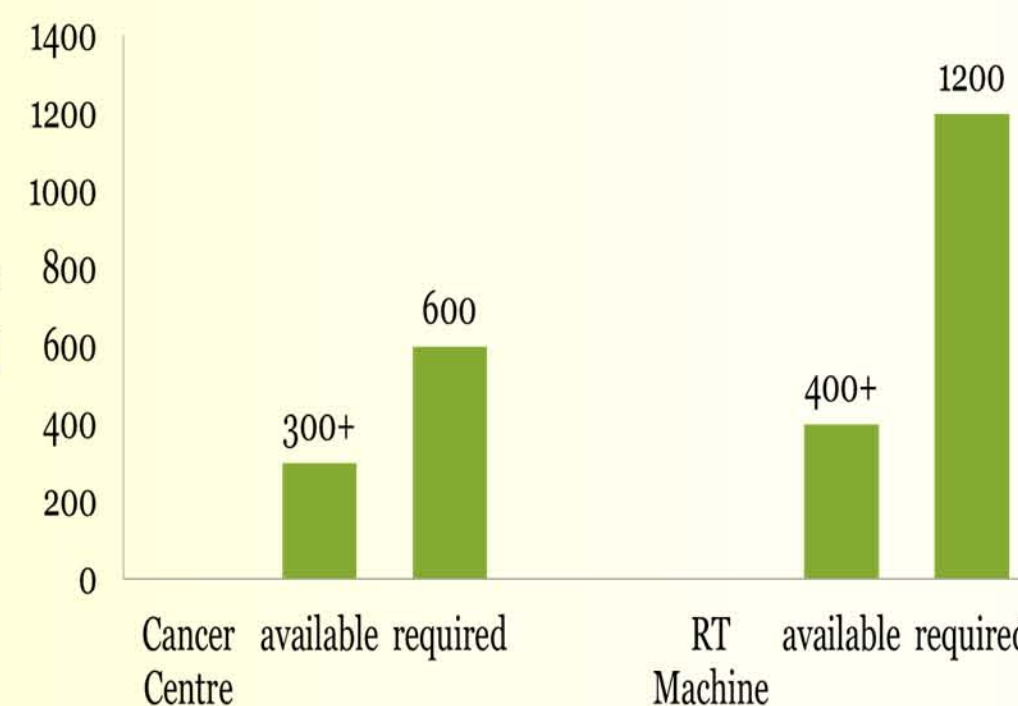
Global Burden of Cancer in India



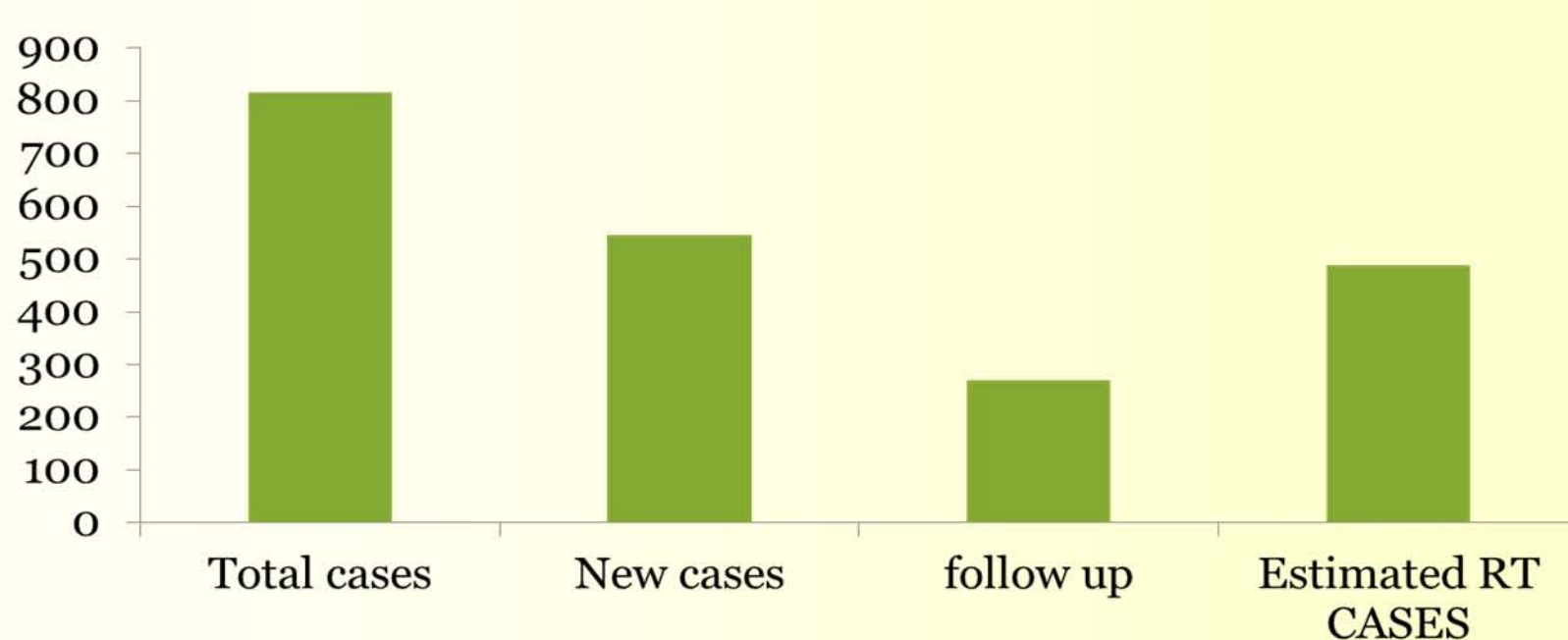
*Source— Indian council of medical research

NEED FOR THE STUDY

- More than 60% of the newly diagnosed cases will require radiotherapy for there treatment.
- There are only 300+ cancer centers in India while as 600 more required to meet the demand.
- There are 400 radiotherapy machines are available & 1200 more are required to cover the cancer population adequately.



Last 6 month data analysis of oncology department of Paras Hospital



GUIDELINE FOR RADIATION ONCOLOGY DEPARTMENT

Guidelines for External Beam Radiation Therapy

Linear accelerator (LINAC), machine which is used for external beam therapy is close to the associated facilities such as mould room, treatment planning system room, simulator room, minor operation theater, physicist room, radiation oncologist room, patient waiting area.

- Distance from source of radiation therapy to skin should be greater than 5 cm .
- It should be mounted isocentrically with SAD of 80 cm or 100 cm

Guideline for Simulation Room

- All the walls of examination room are 23 cm thick.
- Service door & double leaf door are lined with 2 mm lead shield.

Bunker

- Bunkers should consist of the entrance (with a neutron door), a maze, a primary and a secondary barrier.
- Ideally room that adjoins the bunker room should be of minimal use except for console room.
- Air exchanges within bunker room should be at least 6 times/hr.

Neutron Door

- Neutrons doors should contain a 12 cm panel of boranated polyethylene which is a good neutron absorber .

Guideline for Internal Beam Radiation Therapy (brachytherapy)

It should be categorized in to-

- low dose rate (LDR; 0.4-2 Gy/h),
- Medium dose rate (MDR; 2-12 Gy/ h
- High dose rate (HDR; >12 Gy/h)

Guidelines for Radiation Leakage

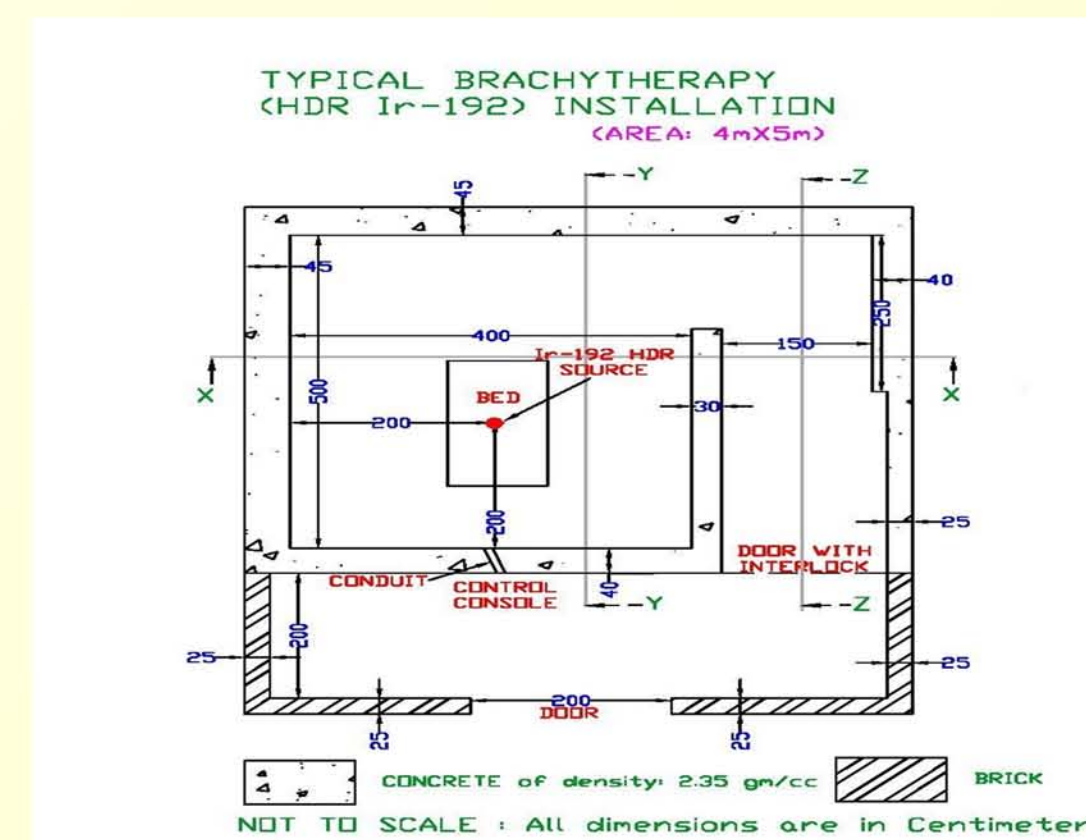
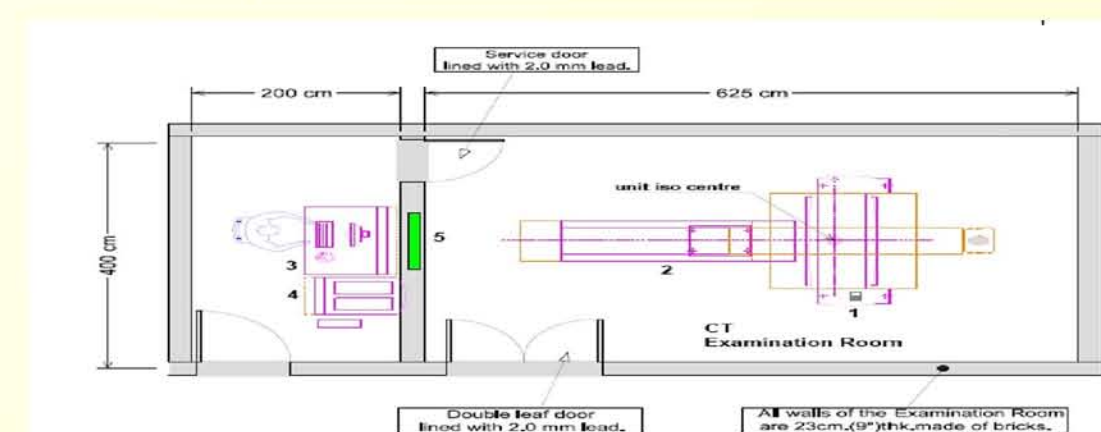
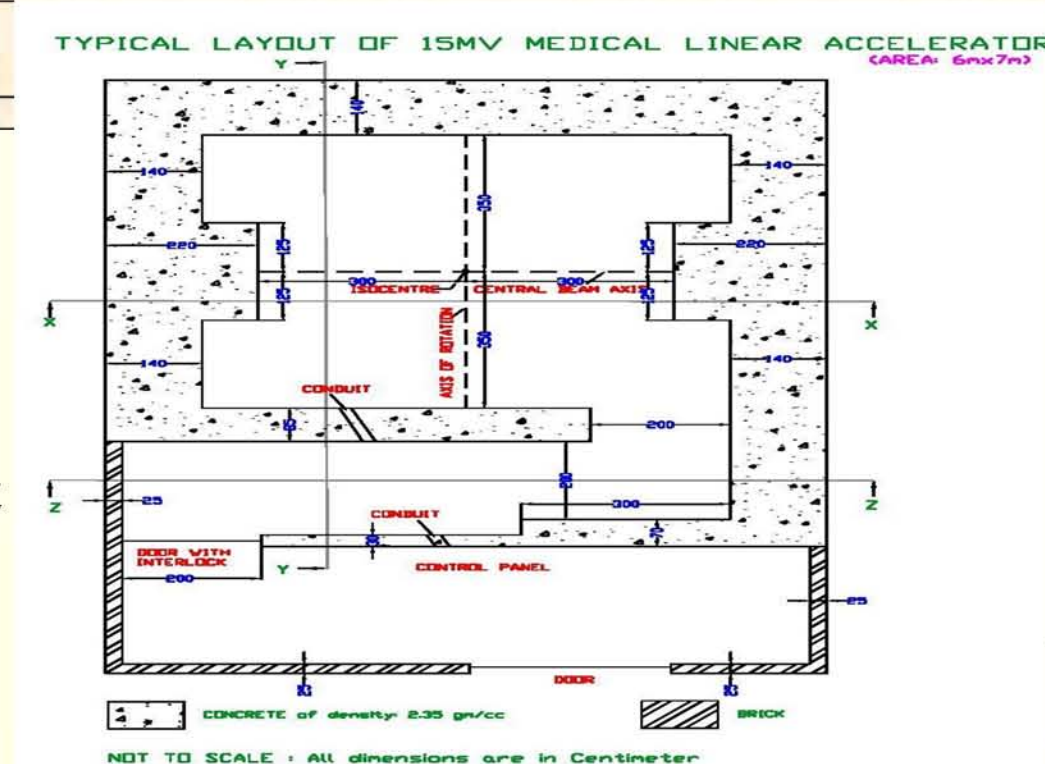
- High Voltage Protection
- Anti collision system
- Emergency cut-offs.
- Interlocks & indicators

Radiation protection signs

Tri-Foil sign for Radioactive packages.

Warning sign to put on the radiation installation

High level sources sign



Procurement of instruments -

- Personnel Monitoring Badges & pocket dosimeters from the agency recognized by AERB.
- Appropriate Monitoring of equipment (survey meter, contamination monitor, gamma zone monitor)
- Procurement of other associated equipments- TPS, CT- simulator, Beam modifier , Moulds, QA tools.
- Authorization from RSD ,AERB for procurement of sources.

Radiation protection gadgets

- Radiation monitors and sensors.
 - Radiation survey meters
 - Radiation detectors
- *Source: Atomic Energy Regulatory Board Guidelines

Guidelines for Installation:

- Sitting of the installation** Place where occupancy is the mini.

- Shielding** - The entry shall be of indirect type.

Appropriate Safety interlocks & lights

Zone monitor—Near entrance .

Patient monitoring - Closed circuit TV system, Two-way com-

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TREATMENT PACKAGE	INCLUDE	EXCLUDE
	Mould	Investigations
	CT Scan	Medicines , consumables , dressings
	Radiation planning ,sitting	Hospitalization