

34.0 Radiation Oncology Unit

34.1 Introduction

34.1.1 Description

The purpose of the Radiation Oncology Unit is to provide facilities and equipment for treatment of patients using radioactive rays. The Radiation Oncology Unit may contain one or both electron beam therapy and radiation therapy. Although not recommended, a Simulation Room may be omitted in small linear accelerator facilities where other positioning geometry is provided.

Room sizes and specifications for a Radiation Oncology Unit should accommodate the equipment manufacturer's recommendations, as space requirements may vary from one machine to another and one manufacturer to another. Radiation Oncology may also be referred to as Radiotherapy or Radiation Therapy.

34.2 Planning

34.2.1 Functional Areas

The Radiation Oncology Unit may include the following Functional Areas:

- Reception, Waiting, administrative and records areas
- Patient treatment areas including Radiotherapy Bunkers, Treatment Planning, Simulation, Holding area, Patient Toilet
- Film processing and storage areas
- Support areas including Consult, Utilities, Cleaner's Room, Store, Disposal rooms
- Staff areas including Staff Station, Offices, Staff Change and Toilets.

SUPPORT AREAS

The following optional support areas may be required:

- Quality control area with illuminated X-ray viewing boxes
- Computer control area normally located adjacent to the Radiotherapy Room entry
- Dosimetry equipment area
- Hypothermia Room (may be combined with an Examination Room)
- Oncologist's Office (may be combined with Consultation Room)
- Physicist's Office (may be combined with Treatment Planning)
- Treatment Planning and Record Room.
- Provision shall be made for the following additional support areas for Linear Accelerator:
 - Mould Room with exhaust hood and hand basin
 - Block Room with storage (may be combined with the Mould Room).

34.2.2 Functional Relationships

The Radiation Oncology Unit should be located with ready access for ambulant patients and beds/trolleys. The Unit may be co-located with Medical Imaging Units. If intra-operative therapy is proposed, the Radiation Oncology Unit should be located close to the Operating Unit or with a direct link. A ground level location is preferred due to the weight of the equipment and shielding requirements, and for ease of installation and replacement.

34.3 Design

34.3.1 Building Service Requirements

CONSTRUCTION STANDARDS

The flooring for a Radiation Oncology Unit shall be adequate to meet the load requirements for equipment, patient, and personnel. Provision for cable ducts or conduits should be made in



the floors and ceilings as required. Ceiling mounted equipment should have properly designed rigid support structures located above the finished ceiling. The minimum recommended ceiling height is 3 metres. A lay-in type of ceiling should be considered for ease of installation, service, and remodelling.

RADIATION PROTECTION

Cobalt and linear accelerator rooms require radiation protection that may include concrete walls, floors and ceiling to a specified thickness. The radiation protection needs of the unit shall be assessed by an AERB consultant. This assessment is to specify the type, location, and amount of protection to be installed in accordance with final approved department layout and equipment selection. The radiation protection requirements shall be incorporated into the final plans and specifications.

34.4 Components of the Unit

34.4.1 Introduction

The Radiation Oncology Unit will contain Standard Components according to the Level of Service. Provide Standard Components to comply with details in the Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets and Room Layout Sheets.



34.5 Schedule of Accommodation

34.5.1 Radiation Oncology Unit Generic Schedule of Accommodation Schedule of Accommodation for a Radiation Oncology Unit for 2 & 4 Bunkers

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
AIRLOCK -- ENTRTY	yes				1 x 9	1 x 9	For stand alone units or direct entry
BAY – BEVERAGE - OPEN	yes				1 x 4	1 x 4	
WAITING	yes				1 x 30	1 x 50	
BAY - WHEELCHAIR	yes				1 x 4	1 x 6	1 trolley; 2-5 wheelchairs
TOILET – PUBLIC	yes				2 x 4	2 x 4	
TOILET – ACCESSIBLE	yes				1 x 5	1 x 5	
BAY – PUBLIC TELEPHONE	yes				1 x 4	1 x 4	
BAY – VENDING MACHINES	yes				1 x 5	1 x 5	
RECEPTION	yes				1 x 10	1 x 10	2 staff
OFFICE – 3 PERSON SHARED	yes				1 x 15	1 x 15	3 staff
STORE – FILES	yes similar				1 x 12	1 x 15	
STORE – PHOTOCOPY/STATIONERY					1 x 8	1 x 8	
MEETING ROOM SMALL	yes				1 x 12	1 x 12	Resource & education function
MEETING/INTERVIEW ROOM	yes				1 x 12	1 x 12	
VOLUNTEERS' ROOM	yes				1 x 12 optional	1 x 12 optional	

PLANNING ZONE

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
SUB WAITING –	yes				1 x 20	1 x 20	1 wheelchair space
PATIENT BAY - HOLDING	yes				1 x 10	1 x 10	
PATIENT TOILET - ACCESSIBLE	yes				2 x 6	2 x 6	
PATIENT CHANGE - ACCESSIBLE	yes				2 x 4	2 x 4	includes lockers
RADIOTHERAPY SIMULATOR ROOM	yes				1 x 50	1 x 50	
CONTROL ROOM	yes				1 x 14	1 x 16	
DARK ROOM	yes				1 x 6 optional	1 x 6 optional	
XRAY VIEWING/VIRTUAL SIMULATION	yes				1 x 9	1 x 14	PACS may be used
BAY – RESUSCITATION TROLLEY	yes				1 x 2	1 x 2	
OFFICE – WORKSTATION PLANNING	yes				8 x 6	12 x 6	Multiple workstations in open plan may be provided



ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
OFFICE – MANAGER, RADIATION THERAPY	yes				1 x 12	1 x 12	Qty per staffing establishment
OFFICE – RADIATION THERAPY EDUCATOR	yes				1 x 9	2 x 9	Qty per staffing establishment
OFFICE – R.T HEAD OF PLANNING	yes				1 x 9	1 x 9	Qty per staffing establishment
OFFICE – R.T HEAD OF TREATMENT	yes				1 x 9	1 x 9	Qty per staffing establishment
OFFICE – RADIATION THERAPISTS SIGN ON/WORK AREA	yes				1 x 12	1 x 12	Qty per staffing establishment
OFFICE - WORKSTATION – BOOKING CLERK	yes				1 x 6	2 x 6	Qty per staffing establishment
EQUIPMENT STORE	yes				1 x 9	1 x 12	
STAFF TOILET	yes				2 x 3	2 x 3	

APPLIANCE AREA

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
MOULD ROOM – FITTING	yes				1 x 10	1 x 10	
MOULD ROOM – WORKSHOP	yes				1 x 20	1 x 20	May be noisy
CLEAN-UP	yes				1 x 9	1 x 9	
STORE – GENERAL	yes				1 x 9	1 x 9	

MEDICAL PHYSICS

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
OFFICE – CHIEF PHYSICIST	yes				1 x 12	1 x 12	
OFFICE - WORKSTATION - PHYSICIST	yes				1 x 6	1 x 6	Qty per staffing establishment
PHYSICS LABORATORY	yes				1 x 25	1 x 40	
STORE – EQUIPMENT, PHYSICS	yes				1 x 12	1 x 20	
WORKSHOP - BIOMEDICAL	yes				1 x 40	1 x 50	
OFFICE - WORKSTATION BIOMEDICAL	yes				1 x 6	1 x 6	Qty per staffing establishment

RADIATION TREATMENT

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
SUB WAITING	yes				1 x 20	1 x 20	
CHANGE CUBICLES	yes				2 x 2	4 x 2	
CHANGE CUBICLE – ACCESSIBLE	yes				1 x 5	2 x 2	
PATIENT TOILET	yes				2 x 3	4 x 3	



ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
INTERVIEW ROOM	yes				1 x 9	2 x 9	Can be used for private waiting
BUNKER WAITING	yes				2 x 2	4 x 2	
RADIOTHERAPY BUNKER (LINEAR ACCELERATOR)	yes				2 x 150	4 x 150	See note 1 below
RADIOTHERAPY BUNKER CONTROL ROOM	yes				2 x 20	4 x 20	
OFFICE – SINGLE RADIOTHERAPY	yes				1 x 9	1 x 9	Deputy chief in large centres
WORKSTATIONS – SENIOR RADIOTHERAPISTS	yes				2 x 6	4 x 6	
BAY – WHEELCHAIR PARK	yes				3 x 4	5 x 4	
BAY - LINEN TROLLEY	yes				1 x 2	1 x 2	
STORE – EQUIPMENT	yes				1 x 10	1 x 12	

NOTE 1: 150m2 spatial allocation for one Linear Accelerator bunker includes maze and radiation shielding wall, bunker size depends on equipment selected and radiation shielding recommendation from AERB consultant.

BRACHYTHERAPY SUITE

ROOM/ SPACE	Standard Component					4 Bunkers Qty x m2	Remarks
BRACHYTHERAPY BUNKER	yes similar					1 x 130	Assumes permanent seed implantation; similar to Radiotherapy bunker
RADIOTHERAPY BUNKER CONTROL ROOM	yes					1 x 10	
SCRUB-UP	yes					1 x 6	
ANAESTHETIC INDUCTION ROOM	yes					1 x 15	Optional
PATIENT BAY – RECOVERY	yes					2 x 9	
HOT LAB - SEED STORE & LOADING	yes					1 x 9	

PATIENT OBSERVATION & NURSING CARE

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
STAFF STATION	yes				1 x 12	1 x 18	
MEETING/INTERVIEW ROOM	yes				1 x 12	1 x 12	
PATIENT BAY – HOLDING (MALE/FEMALE)	yes				2 x 9	4 x 9	
BAY – HANDWASH – TYPE B	yes				1 x 1	1 x 1	
BAY – P.P.E	yes				1 x 2	1 x 2	
PATIENT SHOWER	yes				2 x 4	4 x 4	



ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
BAY – LINEN TROLLEY	yes				1 x 2	1 x 2	
BAY - RESUSCITATION TROLLEY	yes				1 x 2	1 x 2	
OFFICE – SINGLE PERSON NURSE MANAGER	yes				1 x 9	1 x 9	
CLEAN UTILITY	yes				1 x 12	1 x 14	
DIRTY UTILITY	yes				1 x 12	1 x 14	
DISPOSAL ROOM	yes				1 x 8	1 x 8	May be combined with Dirty Utility
CLEANER'S ROOM	yes				1 x 5	1 x 5	
CONSULT/EXAM ROOMS	yes				4 x 14	8 x 14	Qty according to service plan
PROCEDURE ROOM	yes				1 x 20	1 x 20	
CLEAN-UP	yes				1 x 10	1 x 15	Include endoscope cleaning
OFFICE – WRITE-UP – SHARED	yes				1 x 12	2 x 12	Clinical reviews
SPECIMEN COLLECTION ROOM	yes				1 x 9	1 x 9	
PATIENT TOILET	yes				2 x 3	2 x 3	for specimen collection
CLINIC WAITING	yes				2 x 10	2 x 25	

GENERAL STAFF AREAS

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
OFFICE - WORKSTATION DATA MANAGERS					3 x 6	6 x 6	
STORE – FILES					1 x 10	1 x 20	
OFFICE – SINGLE PERSON CLINICAL TRIALS MONITOR					1 x 9	1 x 9	
OFFICE – SINGLE PERSON BIOSTATISTICIAN					1 x 9	1 x 9	
OFFICE - WORKSTATION NURSE COORDINATOR					1 x 6	1 x 6	
OFFICE – SINGLE PERSON TEACHING FELLOW					1 x 9 optional	1 x 9 optional	
OFFICE - SHARED					1 x 12 optional	1 x 14 optional	
OFFICE – CLINICAL DIRECTOR					1 x 12	1 x 12	
OFFICE – DEPUTY DIRECTOR					1 x 9	1 x 9	
OFFICE – RADIATION ONCOLOGIST					1 x 9	1 x 12	
OFFICE - WORKSTATION					1 x 12	2 x 12	For administration staff
OFFICE – SHARED					1 x 12	1 x 12	2 staff
OFFICE - WORKSTATION MEDICAL TYPISTS					1 x 6	2 x 6	



ROOM/ SPACE	Standard Component				2 Bunkers Qty x m2	4 Bunkers Qty x m2	Remarks
OFFICE – SINGLE PERSON DATA MANAGERS	yes				1 x 2 optional	1 x 2 optional	
OFFICE – SINGLE PERSON I.T MANAGER	yes				1 x 2 optional	1 x 2 optional	
OFFICE – SINGLE PERSON MANAGER QUALITY ASSURANCE	yes				1 x 9	1 x 9	QA Manager
OFFICE – SHARED ALLIED HEALTH	yes				1 x 12	1 x 12	
MEETING – MEDIUM/LARGE	yes				1 x 20	2 x 20	
STAFF ROOM	yes				1 x 30	1 x 40	
STAFF PROPERTY	yes				1 x 6	1 x 12	
STAFF TOILET	yes				2 x 3	4 x 3	
STAFF SHOWER	yes				2 x 3	2 x 3	
CLEANER’S ROOM	yes				1 x 5	1 x 5	
OFFICE - WORKSTATION CANCER CARE COORDINATOR	yes				1 x 6	2 x 6	
OFFICE – SINGLE PERSON	yes				1 x 9	1 x 9	
OFFICE - WORKSTATION SPECIALIST CANCER NURSES	yes				1 x 6	2 x 6	
OFFICE - WORKSTATION PALLIATIVE CARE	yes				1 x 6	2 x 6	
DICOUNTED CIRCULATION					35%	35%	

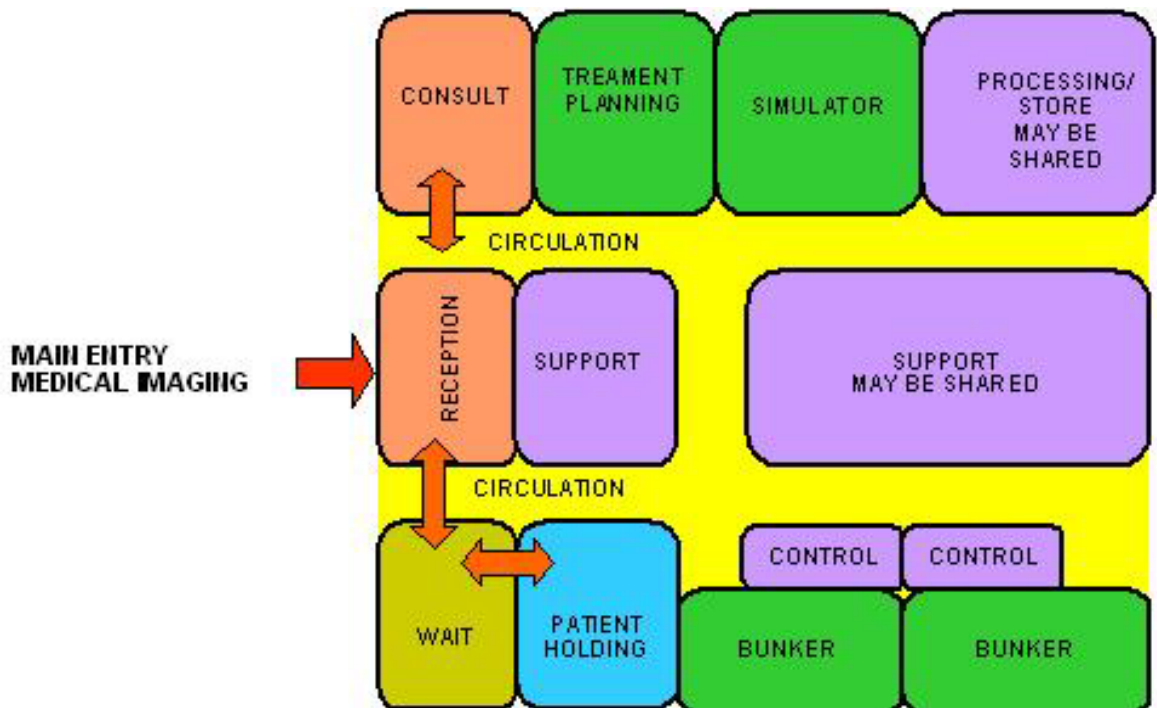
Please note the following:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU.
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation.
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the service plan and the policies of the Unit.
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit.
- Office areas are to be provided according to the Unit role delineation and staffing establishment.
- Staff and support rooms may be shared between Functional Planning Units dependant on location and accessibility to each unit and may provide scope to reduce duplication of facilities.



34.6 Functional Relationship Diagram

34.6.1 Radiation Oncology Unit Functional Relationship Diagram



34.7 References and Further Reading

- Australasian Health Facility Guidelines. (AusHFG Version 3.0), 2009; refer to website www.healthfacilitydesign.com.au
- Guidelines for Design and Construction of Health Care Facilities; The Facility Guidelines Institute, 2010 Edition.
- Design Guidelines for Hospitals and Day Procedure Centres, Department of Human Services Victoria, 2005



The Indian Health Facility Guidelines recommends the use of **HFBS** “**Health Facility Briefing System**” to edit all room data sheet information for your project.

HFBS provides edit access to all HFG India standard rooms, departments, and more than 40 report templates.

HFBS Health Facility Briefing System



Briefing Module

The Health Facility Briefing System (HFBS) has numerous modules available via annual subscription. It suits healthcare Architects, Medical Planners, Equipment Planners Project Managers and Health Authorities.

Use the HFBS Briefing Module to quickly drag in health facility departments or pre-configured room templates from the HFG standard, edit the room features such as finishes, furniture, fittings, fixtures, medical equipment, engineering services. The system can print or download as PDF more than 100 custom reports including room data sheets, schedules, and more...

To learn more about the HFBS web-based Healthcare Briefing and Design Software and to obtain editable versions of the “Standard Components” including Room Data Sheets (RDS) and Room Layout Sheets (RLS) offered on the HFG website, signup for HFBS using the link below.

Get Started Now:
hfbs.healthdesign.com.au

- ✓ HFG India Room Data Sheets and Departments are instantly editable in the HFBS software available online in the HFBS India Domain.
- ✓ You can access hundreds of report templates to print your HFG India room data in HFBS.
- ✓ HFBS has a onetime free 3 day trial available to all new users – signup for the HFBS India Domain today.

Get Started Now:
hfbs.healthdesign.com.au



HFBS

Health Facility Briefing System

hfbsinfo.com | techsupport@healthdesign.com.au