37.0 Oncology Unit – Chemotherapy and Radiotherapy

37.1 Introduction

37.1.1 Description

The diagnosis, management and treatment of cancer may involve a combination of treatment plans to provide the most effective treatments. The following identified some of the methods that may be provided as part of an individual management plan or more commonly a combination of treatment therapies:

- Surgical intervention
- Chemotherapy
- Radiation Therapy
- Hormone Therapy.

The Chemotherapy Unit provides for the clinical treatment and management of patients undergoing Chemotherapy treatment for cancer. Chemotherapy is prescribed for the treatment of diseases, especially cancers using specific cytotoxic agents or drugs that are destructive to malignant cells and tissues.

Chemotherapy can be given by various routes:

- Intravenously – through a vein or artery e.g. PICC line, Central Venous Catheter, Portacaths
- Injection – Intramuscularly or Subcutaneously
- Intrathecal – into the central nervous system via the cerebrospinal fluid
- Intrapleural – into the chest cavity
- Intraperitoneal – into the abdominal cavity
- Intravesical – into the bladder
- Intralesional/Intratumoral – directly into the tumor
- Topically – either as a cream or lotion
- Orally.

Services that support and are linked with chemotherapy service may include:

- Physiotherapy (Lymphedema management)
- Occupational therapy
- Dietetic/Nutrition services
- Clinical Psychology
- Social work services
- Community and outreach cancer services
- Palliative Care
- Complementary therapies (e.g. relaxation, stress management and massage)
- Wig and prosthesis services.

The function of the Chemotherapy Unit may include:

- Chemotherapy Administration
- Administration of blood products and/or other supportive therapies
- Blood collection
- Clinical procedures and examination
- Patient and family education and support
- Clinical trial management
- Coordinating and making of appointments.

The Chemotherapy Unit may also be referred to as Medical Oncology Unit.

The purpose of the Radiotherapy Unit is to provide facilities and equipment for treatment of patients using radioactive rays. The Radiotherapy 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 Radiotherapy Unit should accommodate the equipment manufacturer's recommendations, as space requirements may vary from one machine to another and one manufacturer to another. Radiotherapy Unit may also be referred to as Radiation Oncology Unit.

37.2 Planning

37.2.1 Operational Models

Operational models of care for a service will influence the functional planning components for the unit. The role delineation of a hospital will determine the type and range of oncology services to be provided.

- Some of the common operational models for a Chemotherapy Unit includes:
- Hospital based unit – a unit within the hospital
- Satellite Unit – on a hospital campus but not in a hospital
- Stand-alone unit – positioned in a community setting
- Integrated Cancer Care
  - Outpatients (Ambulatory Care) Unit
  - Radiotherapy/Radiation Service
  - Diagnostic Service as part of Radiotherapy Unit.

The hours of operation for a Chemotherapy Unit will depend on the level of service being provided. Units commonly operate on a 5–7-day week basis, with 8–12 hour working days providing 2–3 sessions per day. Chemotherapy infusions may take 15 minutes to 12 hours or longer.

The Chemotherapy Unit is applicable to the following Operational Models:
- Hospital based unit – a unit within the hospital
- Satellite Unit – on a hospital campus but not in a hospital
- Stand-alone unit – positioned in a community setting
- Integrated Cancer Care
  - Outpatients (Ambulatory Care) Unit
  - Radiotherapy/Radiation Service
  - Diagnostic Service as part of Radiotherapy Unit.

The Radiotherapy Unit will typically operate from 8am to 6pm daily, week days; however, extended hours of operation may occur according to the unit operational policy.

The preferred model of care for Radiotherapy Unit is where cancer services are collocated and provided in a purpose-built facility. The benefits of this model are improved communications between all members of the team, resulting in optimal clinical management, efficiency and best outcomes for patients. Separation of planning and therapy is not recommended.

37.2.2 Planning Models

Following factors should be considered when planning a Chemotherapy Unit:
- The operational model chosen as part of the planning model
- Age and mix of the patient group
- Acuity of the proposed or current patient group
- Comorbidity of the patient group
- Rate of infectious diseases to be expected in the patient group.

The Radiotherapy Unit should generally be located on ground level due to the weight of the equipment and shielding requirements, for ease of installation and replacement of specialized equipment. It should be located with ready access for outpatients, including people with disabilities, ambulances, and for inpatients in wheelchairs, on beds or trolleys. If the Unit is located in a free-standing building, careful consideration must be given to covered links between the Center and the main hospital particularly for inpatients on beds/trolleys, goods and supplies, and access to other departments such as Medical Imaging or Pathology.

37.2.3 Functional Areas

The Chemotherapy Unit will consist of or have access to the following functional areas for all service delivery methods:

- Main Entry/Reception Area
- Interview Room
- Waiting
- Clinical Consultation room
- Procedure room
- Treatment Areas
- Isolation room/s
- Clean Utility/Medication room
- Dirty utility
- Pantry
- Staff Areas
- Support Areas
- Storage Areas
  - Clinical
  - Non clinical
  - Bulk items storage e.g. fluids, equipment including infusion/syringe pump storage
- Waste Disposal Room.

The Radiotherapy Unit may include the following Functional Areas or zones:

- Reception, Waiting, administrative and records areas
- Consult area
- Treatment Planning area including simulation
- Appliance area for molds with storage
- Medical physics
- Radiation treatment areas including Radiotherapy Bunkers and Brachytherapy suite with patient holding, waiting, change rooms and toilets
- Support areas including Consult, Utilities, Cleaner's Room, Store, Disposal rooms
- Staff areas including Staff Station, Offices, Staff Change and Toilets.

Reception/Waiting

The Reception area will provide for administrative tasks such as appointments as well as receiving and directing patients to the appropriate zone for consulting, treatment planning or radiotherapy treatment. The waiting area should accommodate a range of patients and visitors with accessible areas and conveniently located public and patient amenities. A child play area should be incorporated into the main waiting area.

Facilities for volunteers and transport staff may also be provided in this area.

Consult Area

The Consult area may accommodate multi-disciplinary teams for patient consultation, follow-up and case review. Patients are generally assessed weekly by a Radiation Oncologist throughout the course of their treatment and will be referred to other specialists and allied health personnel as required including Dieticians and Social Workers. The area may include Procedure rooms for minor procedures including endoscopic examinations, pleural taps and peritoneal drains. The Consult area should have access to blood collection rooms and patient toilets for specimen collection. Interview and conference rooms are required for patient and family education that may include computers for review of treatment programs.

The Consult area should be located with easy access for outpatients without entering radiation treatment zones.

Treatment Area

Treatment planning requirements include:

- Treatment planning rooms with computer workstations which may include including planning room for Brachytherapy where required by the service plan
- Simulator/CT suite
- Patient and visitor amenities (change cubicles, toilets, sub-waiting, trolley holding);
- Offices and workstations for radiation therapists, trainees and students;
- Offices for data checking and transfer in a quiet and discreet area.

Radiation Treatment Area

The radiation treatment zone includes:

- Bunkers with entry/exit maze
- Control areas
- Change cubicles and patient toilets which are required immediately adjacent to radiation treatment areas
- Sub-Waiting areas located conveniently to each bunker
- Support areas including patient bays, clean utility, dirty utility, staff station, preparation and storage areas.

Brachytherapy Treatment Areas

The Brachytherapy treatment room is used for delivery of a radiation source through a tube or applicator, implanted during surgery. The Brachytherapy room is similar to a radiation bunker and equipped as an operating room with services to provide for anesthesia. Support facilities required include:

- Induction room
- Scrub-up area
- Patient recovery bays
- Sterile stock area.

Appliance Areas

The Appliance area is provided for manufacturing of masks and molds for use in radiotherapy treatment and includes:

- Mold Fitting room accommodating a patient trolley and patient positioning accessories
- Mold Workshop/s; workshops require special exhaust for molten metal used to fabricate photons and electron shielding; foam cutters and vacuum formers will be used in this area to manufacture custom masks; a separate dirty/noisy workshop to accommodate machinery and drills may be required
- Storage for materials used to manufacture immobilization devices and heavy molds used to manufacture masks that are held in the unit or the duration of the patient's treatment.

Medical Physics/Biomedical Engineering

Medical Physics staff supervise the physical aspects of radiation treatment and radiation safety of staff, patients and visitors. Medical physicists provide scientific support for all treatment machines, simulators, CT, MRI and PET imaging, computer planning systems, brachytherapy sources and equipment as well as dosimetry, quality assurance and radiation safety.

Biomedical Engineering services may be provided in-house or by external contractors. The service provides maintenance and service support to an extensive range of treatment and non-treatment equipment in Radiation Oncology. Biomedical engineers work closely with Medical Physicists to provide regular calibration and compliance checks of all treatment delivery and diagnostic machines.

Facility requirements include:
- Offices and workstations for physicists, physics assistants, electronics biomedical engineers
- Physics laboratory to manufacture equipment not available commercially for patient treatment such as installation of rigid attachments for patient hoists, calibration jigs for physics, mask creation appliances
- Storage for Medical Physics equipment including bulky water tanks and phantoms;- technical support (IT office and work area/storage)
- Electronic/biomedical engineering workshop
- Dark room x-ray processor as required for machine commissioning and imaging of special.

Support Areas

The following optional support areas may be required:
- Quality control area with illuminated X-Ray viewing boxes
- Dosimetry equipment area
- Hypothermia Room (may be combined with an Examination Room).

37.2.4 Functional Relationships

It is not mandatory to co-locate Chemotherapy Unit with Radiotherapy Unit, as patients are unlikely to be at both units during the same visit except in the case of an Integrated Cancer Care Center.

Planning of a Chemotherapy Unit should address the following key issues:

External

- Ease of access to the unit where the majority of people will arrive by car on a daily basis.
- Separation of walking and stretcher/ambulance patient arrivals
- Safe access to the units storerooms for the delivery of bulk items e.g. Bulk fluids which may arrive or be stored on a palette requiring mechanical lifting, moving and storage
- Safe access for the delivery of food, clean linen, pharmacy, consumables, disposable items and the related removal of bulk cytotoxic chemotherapy waste and soiled linen etc.

Internal

The internal planning of the Chemotherapy Unit should be planned by considering the units functional areas/zones. Cancer service delivery is supported by a multi-discipline team management approach.

Some of the critical relationships to be considered include:
- Staff work station requires an unobtrusive view of all patient treatment areas. The inclusion of decentralized staff areas may be considered in larger units that have multiple rooms or treatment spaces
- Clustering number of treatment spaces and/or individual cubicles
- Provision of working spaces for visiting multi-discipline team members
- Reception requires a clear view of entry and exit/egress points of the Unit
- Easy access from the waiting area to the patient treatment area for the convenient arrival and departure of patients and families

- Functional relationship of isolation rooms to the entry of the unit with access to outdoor views and space.

The Radiotherapy 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 Radiotherapy 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. There will also be a restriction on the type of departments located above the Radiation Oncology bunkers.

37.3 Design

37.3.1 General

The Chemotherapy Unit should be designed to provide:

- Ease of public access for people who may arrive either walking, using mobility equipment, families with children or on an Ambulance stretcher or patient trolley
- Ease of access to public parking for people who are often debilitated and who are undergoing a scheduled period of chemotherapy on a regular basis
- Ease of delivery of large amounts of fluids on palettes to the Unit on a regular basis
- Consideration to the type of floor finishes as staff movement to/from and between patients during chemotherapy treatments and review is constant e.g. cushioned vinyl as used in physical therapies areas.

Radiotherapy Units should be designed to avoid exposing patients, staff and visitors to risks such as injury or radiation hazard. The design of the unit should create a pleasant, reassuring atmosphere for patients whilst retaining the necessary functional requirements associated with clinical spaces and radiation treatment areas.

37.3.2 Patient Treatment Areas

In a Chemotherapy Unit, patients should be situated so that healthcare providers have direct or indirect visualization. This approach permits the monitoring of patient status under both routine and emergency circumstances. The preferred design is to allow a direct line of vision between the patient, carer and staff.

Clarification of the type and number of chemotherapy spaces to be provided e.g. cubical, screened areas and isolation room numbers.

37.3.3 Environmental Considerations

Natural Lighting

Natural light contributes to a sense of wellbeing of patients, staff, visitors and other users. The use of natural light should be maximized throughout a Chemotherapy Unit.

Natural light and a view to pleasant and interesting outdoor areas is of particular importance for people who spend long periods of time sitting and laying in a chemotherapy chair or bed. Every effort should be made to provide a view to all treatment areas either by locating treatment bays/cubicles/bedrooms adjacent to a window or enabling unobstructed sight lines through areas to an outdoor view.

Construction Standards

The flooring for a Radiotherapy Unit shall be adequate to meet the load requirements for equipment, patients 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 3meters. A lay-in type of ceiling should be considered for ease of installation and service.

The linear accelerator installation may require an opening in a wall and coordination of the entry door size to allow for future servicing of the equipment.

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 a certified physicist or appropriate state agency. 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.

Design of the bunker rooms may incorporate a maze entry to assist with radiation protection; a neutron door may also be required depending on the type of linear accelerator used.

Privacy

Confidentiality and privacy when requested for persons receiving treatment and the area design should be considered as a critical element during the design process. The Chemotherapy Unit should be designed to:

- Ensure confidentiality of personal discussions and medical records
- Provide an adequate number of rooms for discreet discussions and treatments to occur when required
- Enable sufficient space within each treatment space to permit curtains to be easily closed whenever required
- Appropriately locate windows and doors to enhance visual and acoustic privacy.

Acoustics

Many of the functions undertaken in the Chemotherapy Unit require consideration of acoustic privacy including:

- Family/case conference/interviews rooms
- Isolation of noisy areas such as waiting rooms from clinical areas e.g. clean and dirty utilities
- Staff discussions regarding confidential matters (meeting rooms)
- Noise sources may arise both within and from outside the dialysis unit and may include:
    - Sanitary facilities
    - Equipment
    - Other patients/clients
    - Staff activities
    - Traffic through the unit e.g. visitors, food, linen or other trolleys.

Solutions to be considered include:

- Selection of sound absorbing materials and finishes
- Use of sound isolating construction
- Planning to separate quiet areas from noisy areas
- Review of operational management and patient/client flows. This may include separate areas for patients with special needs
- Location of the unit.

Similarly in the Radiotherapy Unit, acoustic treatment will be required to all examination, consultation rooms and offices to ensure privacy for discussions with patients, families and staff.
Provide for the control of noise associated with machinery in the appliance fabrication workshop areas.

Lighting

Radiation bunkers and simulators will require dimmable lighting with adjustable lighting levels for patient comfort. All patient areas in the Unit will require lighting with clinical color rendering. General lighting in staff work areas should be even, sufficient for illumination of the work area and non-reflective. Refer also to Part C of these Guidelines.

Interior Decor

Interior decor includes furnishings, style, color, textures and ambience, influenced by perception and culture. The décor of the Chemotherapy Unit should be of a standard that meets the expectations of people using the services and make every effort to reduce an institutional atmosphere. Cleaning, infection control, fire safety and patient care requirements and the patients' perception of a professional inviting environment should always be considered. Suggestions to achieve this balance include the following:

- Use of design features such as colors and artworks to distract the sight from clinical areas
- Inclusion of soft furnishings that act as a design feature such as screening, lounges in waiting areas and window treatments
- Elimination of corridors through good design wherever possible
- Inclusion of corridors at the minimum required widths to meet the service needs e.g. wide corridors are a feature that potentiates institutional environments
- Provision of a beverage bay for people to use while waiting
- Background music through a piped system or a centralized unit
- Television systems with head set access at the treatment cubicles
  Some of the above features can also be considered for the Radiotherapy Unit.

37.3.4 Space Standards and Components

Accessibility – External

There should be a weatherproof vehicle drop-off zone with easy access for less-mobile patients and wheelchair bound patients. Consideration should be given to the separation of ambulant and non-ambulant patient arrivals to enhance privacy of ambulance and or stretcher patients frequenting the service.

Access and Mobility

Within workshop and appliance room areas, the number of doors should be kept to a minimum to facilitate the movement of equipment; double doors will be provided to all workshop areas. All patient areas should be designed for access by wheelchairs. Refer also to Part C of these Guidelines for additional information.

Safety and Security

Security measures may include:
- Emergency 'stop' buttons in treatment bunkers and control rooms
- Controlled access to equipment storage areas to protect sensitive equipment
- Controlled staff access after-hours
- CCTV camera surveillance of bunkers, access and exit points
- Fixed and personal duress alarms.

Ergonomics

Heights and depths of benches and workstations in the radiation treatment area need to allow staff to efficiently work from standing and seated positions. The emergency stop button should be placed within easy reach of attending staff.

37.3.5 Safety and Security

Equipment, furniture, fittings and the facility itself should be designed and constructed to ensure that users are not exposed to avoidable risks or injury. The service is more likely to be located in an area away from the inpatient units and isolated after-hours.

A high standard of safety and security can be achieved by careful configuration of spaces and zones to include:

- Control access/egress to and from the Unit
- Optimize visual observation for staff
- Use of CCTV to entry and communication systems enable contact after normal work hours
- Similar functions shall be co-located for ease of staff management
- Emergency 'stop' buttons in treatment bunkers and control rooms
- Controlled access to equipment storage areas to protect sensitive equipment
- Controlled staff access after-hours
- CCTV camera surveillance of bunkers, access and exit points
- Fixed and personal duress alarms.

Access to public areas shall be considered with care so that the safety and security of staff areas within the Unit are not compromised.

Refer also to Part C of these Guidelines.

37.3.6 Finishes

Floor and ceiling finishes shall be selected to suit the function of the space and promote a pleasant environment for patients, family, carers, visitors and staff.

The following factors shall be considered:

- Aesthetic appearance
- Acoustic properties
- Durability
- Ease of cleaning
- Meeting infection control standards
- Floor type finishes
- Movement of equipment.

All surface finishes are to be washable including walls and ceilings. Floor surfaces should be impervious, easy to clean, sealed and coved at the edges.

Refer also to Part C of these Guidelines.

37.3.7 Fixtures and Fittings

Equipment such as the linear accelerator and control equipment must be installed to the manufacturer's specifications and recommendations, in particular:

- Space requirements may vary according to equipment selection
- Doors will need to be sized to allow passage of equipment
- Structural assessment will be required for equipment weight loads
- Adequate space will be required for maintenance of major equipment ensuring adequate access to cabinets and control units.

Safety shower and eye wash or eye/face wash equipment must be readily accessible where cytotoxic drugs are dispensed and administered.

Refer to Part C of these Guidelines and Standard Components of individual rooms for information related to fixtures and fittings.

37.3.8 Building Service Requirements

Communications and Information Technology

It is vital to provide reliable and effective Technology/Communications service for efficient operation of the Unit. The following items relating to Technology/Communication to support the planning, design and the current and future expansion of the Unit and support the development of technical and operational guidelines lines supported by written procedures and processes.

Examples are as follows:
- Bar coding for supplies, x-rays and records
- Data entry (e.g. scripts and investigative requests)
- Email
- Access to picture archiving communications systems (PACS)
- Paging systems
- Electronic medical records and medical record storage systems
- Point of clinical care
- Patient Administration System (PAS)
- BMS System for drug fridges
- Videoconferencing, teleconferencing/telemedicine
- Wireless technology considerations Duress alarm systems – fixed and mobile units
- Communications rooms and server requirements.

Nurse Call and Emergency Call facilities shall be provided in all patient areas (e.g. Bed/chair spaces, toilets and bathrooms) and clinical areas in order for patients and staff to request for urgent assistance. The individual call buttons shall alert to distributed identified ceiling -mounted annunciators and also to a central module situated at or adjacent to the Staff Station /s. The alert to staff members should be done in a discreet manner.

Provision of Duress Alarm System is required for the safety of staff members who may at times face threats imposed by clients/visitors. Call buttons will be required at all reception/staff station areas and consultation/treatment areas where a staff may have to spend time with a client in isolation or alone. The combination of fixed and mobile duress units should be considered as part of the safety review during planning for the unit.

Inclusion of medical gases (oxygen and suction) units of one per two chairs should be provided.

Communications and information systems installed in the unit may include:
- Voice/data outlets
- Telephone and video conferencing capacity
- PACS imaging system, electronic records and radiotherapy information management systems
- Patient/nurse, emergency call system and duress call as required
- CCTV for patient viewing, treatment delivery computers and intercoms to allow the radiation therapist to monitor and communicate with the patient from the control area during treatment.

Mechanical Services

General air-conditioning needs to cool equipment but outlets should not be placed directly over partially undressed patients on beds or trolleys. The temperature of the unit should be maintained within a comfortable range not exceeding 25 degrees C for optimal operating efficiency and patient comfort.

Air condition systems should be designed with consideration to the following:

- Appropriate air exchanges and exhaust for chemicals and dust in the appliance workshop
- Sufficient cooling for heat generating equipment in radiotherapy treatment, computer equipment rooms.

Smoke detectors in radiation treatment and simulator rooms must be of the type not sensitive to radiation (i.e. photoelectric) and require special consideration.

Infection Control

Infectious patients and immune-suppressed patients may be sharing the same treatment space at the different times of the same day. The design of all aspects for the Unit should take into consideration the need to ensure a high level of infection control in all aspects of clinical and non-clinical practice.

Isolation room/s numbers should be reviewed as part of the planning aspects of the project relevant to the proposed service needs.

Hand washing facilities for staff within the Unit should be readily available. Where a hand wash basin is provided, there shall also be liquid soap and disposable paper towels provided and PPE equipment.

For further details relating to the Infection control refer to Part D of these Guidelines.

37.4 Components of the Unit

37.4.1 Introduction

The 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.

37.5 Schedule of Accommodation

Typical Oncology - Chemotherapy with 12, 24 and 30 treatment spaces

ROOM/ SPACE	Standard Component	12 spaces Qty x m²			24 spaces Qty x m²			30 spaces Qty x m²			Remarks
Entry/ Reception											
Airlock Entry	AIRLE-10-SJ	1	x	10	1	x	10	1	x	10	Covered entry for stand-alone Unit
Reception/ Clerical	RECL-15-SJ Similar	1	x	9	1	x	12	1	x	15	Size dependent on staffing Numbers and activities
Waiting	WAIT-20-SJ Similar	2	x	10	2	x	15	2	x	20	Separate Female areas
Waiting- Family	WAIT-10-SJ Similar	1	x	10	1	x	15	1	x	20	May include a child Play Area
Store- Photocopy/Stationery	STPS-8-SJ	1	x	8	1	x	8	1	x	8	
Store- Files	STFS-10-SJ	1	x	10	1	x	10	1	x	10	Depends on operational policies
Toilet- Accessible	WCAC-SJ	1	x	6	1	x	6	1	x	6	
Toilet- Public	WCPU-3-SJ	2	x	4	2	x	4	2	x	4	
Consult Room	CONS-SJ	1	x	14	3	x	14	4	x	14	For counselling, interviews and education
Patient Areas: Treatment											
Treatment Bay - Chemotherapy	TRMT-CHE-SJ	9	x	9	20	x	9	23	x	9	Group of 10 chair bays
Treatment Bed Bay - Chemotherapy	TRMT-CHE-SJ	2	x	9	3	x	9	4	x	9	Group of 4 bed bays
Isolation Room	1 BR-IS-N-SJ	1	x	28	1	x	28	3	x	28	Depending on service needs
Ensuite- Standard	ENS-ST-SJ	1	x	5	2	x	5	3	x	5	
Staff Station / Clean Utility	SSCU-SJ Similar	2	x	9	2	x	14	2	x	20	overlooking groups of chair & bed bays
Toile - Accessible	WCAC-SJ	1	x	6	1	x	6	2	x	6	
Toilet - Patient	WCPT-SJ	2	x	4	2	x	4	3	x	4	Separate Male and Female
Support Areas											
Bay - Beverage	BBEV-ENC-SJ	1	x	5	1	x	5	1	x	5	
Bay - Emergency Shower	BES-SJ	1	x	1	1	x	1	1	x	1	
Bay - Handwashing, Type B	BHWS-B-SJ	3	x	1	6	x	1	8	x	1	1 per 4 bays
Bay - Linen	BLIN-SJ	1	x	2	1	x	2	2	x	2	
Bay - Resuscitation Trolley	BRES-SJ	1	x	1.5	1	x	1.5	1	x	1.5	
Cytotoxic Room	CYT-SJ Similar	1	x	10	1	x	15	1	x	20	
Cleaner's Room	CLRM-5-SJ	1	x	5	1	x	5	1	x	5	
Dirty Utility	DTUR-12-SJ Similar	1	x	12	1	x	14	1	x	14	
Disposal Room	DISP-8-SJ	1	x	8	1	x	8	1	x	8	
Store - Equipment	STEQ-16-SJ Similar	1	x	16	1	x	20	1	x	25	
Store - General	STGN-8-SJ Similar	1	x	10	1	x	12	1	x	15	
Staff Areas											
Meeting Room	MEET-L-15-SJ Similar	shared			1	x	15	1	x	20	
Office - Unit Manager	OFF-S9-SJ	1	x	9	1	x	9	1	x	9	
Office - 2 Person Shared	OFF-2P-SJ				2	x	12	2	x	12	Nursing/ Medical/ Allied Health use
Change - Staff (Male/Female)	CHST-12-SJ	2	x	12	2	x	12	2	x	15	Toilet, Shower, Lockers
Staff Room	SRM-15-SJ Similar	1	x	15	1	x	20	1	x	25	

ROOM/ SPACE	Standard Component	12 spaces Qty x m²	24 spaces Qty x m²	30 spaces Qty x m²	Remarks
Net Department Total		380.5	609.5	788.5	
Circulation %		35	35	35	
Grand Total		513.7	822.8	1064.5	

Oncology - Radiotherapy with 2 and 4 bunkers

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m²			4 Bunkers Qty x m²			Remarks
Entry/ Reception											
Airlock - Entry	AIRLE-10-SJ				1	x	10	1	x	10	For stand-alone units or direct
Waiting	WAIT-30-SJ				2	x	15	2	x	25	Separate for Male/Female areas
Reception/ Clerical	RECL-15-SJ				1	x	10	1	x	10	2 staff
Bay Wheelchair	BWC-SJ				1	x	4	1	x	6	1 trolley; 2-5 wheelchairs
Store - Files	STFS-10-SJ				1	x	10	1	x	15	
Store- Photocopy / Stationery	STPS-8-SJ				1		8	1		8	
Meeting Room	MEET-L-15-SJ Similar					x		1	x	12	Resource and education function
Interview Room- Family	INTF-SJ				1	x	12	1	x	12	
Toilet- Accessible	WCAC-SJ				1	x	6	1	x	6	
Toilet - Public	WCPU-3-SJ				2	x	4	2	x	4	Separate Male/Female areas
Volunteers Workroom	VWR-20-SJ				1	x	20	1	x	20	Optional
Clinic Area											
Consult Room	CONS-SJ				2	x	14	4	x	14	
Treatment Room	TRMT-SJ				1	x	14	1	x	14	
Patient Bay - Holding/ Recovery	PBTR-H-10-SJ Similar				2	x	9	4	x	9	
Bay- Handwashing, Type B	BHWS-B-SJ				1	x	1	2	x	1	For Bed Bays
Bay - Linen	BLIN-SJ				1	x	2	1	x	2	
Bay - Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Staff Station/ Clean Utility	SSCU-SJ				1	x	15	1	x	15	
Dirty Utility - Sub	DTUR-S-SJ				1	x	8	1	x	8	
Toilet - Patient	WCPT-SJ				1	x	4	1	x	4	
Treatment Planning											
Radiotherapy Treatment Planning	RAD-TRP-SJ				1	x	40	1	x	60	Qty per staffing establishment
Waiting	WAIT-10-SJ				2	x	10	2	x	20	1 wheelchair space; separate areas for Male/Female
Patient Bay - Holding	PBTR-H-10-				2	x	10	4	x	10	Separate for Male/Female areas
Office - Chief Radiographer	OFF-S9-SJ Similar				1	x	12	1	x	12	
Office – Single Person	OFF-S9-SJ				3	x	9	3	x	9	To staff specialist as per service plan
Office – 2 Person Shared	OFF-2P-SJ				1	x	12	1	x	12	As per service plan
Office – Workstation	OFF-WS-SJ				1	x	5.5	2	x	5.5	To staff specialist, qty per staffing establishment
Physics Laboratory	PHLAB-SJ					x	24	1	x	40	
Store - General	STGN-6-SJ					x	10	1	x	20	
Store – Equipment (Physics)	STEQ-10-SJ STEQ-16-SJ				1	x	10	1	x	20	
Radiotherapy Simulator Room	RAD-SIM-SJ				1	x	44	1	x	44	
Simulator Control Room	RAD-BCTR-SJ				1	x	17	2	x	17	1 room shared between Simulator rooms
Toilet - Accessible	WCAC-SJ				2	x	6	2	x	6	Separate Male/female patients
Change Cubicle - Accessible	CHPT-D-SJ				2	x	4	2	x	4	

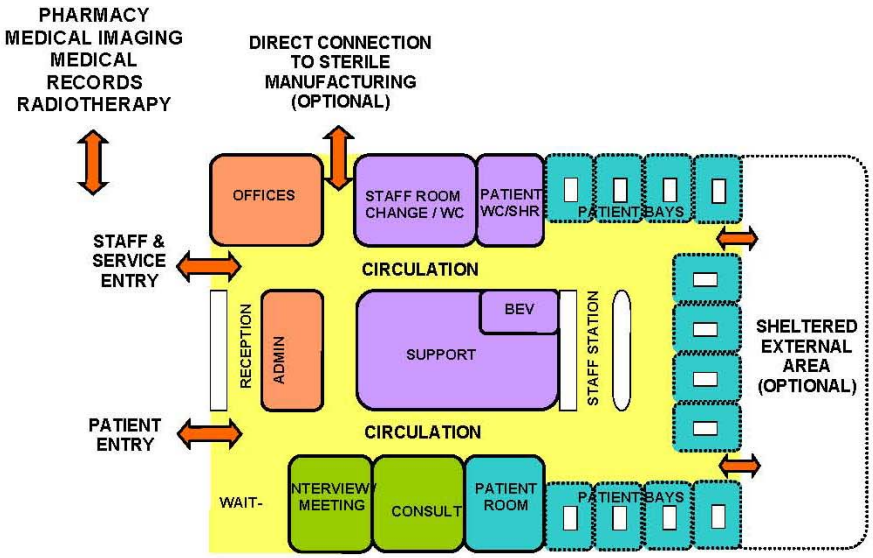
ROOM/ SPACE	Standard Component				2 Bunkers Qty x m²			4 Bunkers Qty x m²			Remarks
Mould Room -	MLD-WS-SJ				1	x	30	1	x	30	Includes workshop and fitting areas
Toilet - Patient	WCPT-SJ					x		1	x	4	
Toilet - Staff	WCST-SJ				2	x	3	2	x	3	Separate Male/Female areas
Clean-Up Room	CLUP-7-SJ				1	x	10	1	x	10	
Patient Bays - Paediatric Preparation/ Recovery	PBTR-H-10-SJ Similar				1	x	10	1	x	20	
Bay -Handwashing, Type B	BHWS-B-SJ				1	x	1	2	x	1	
Bay – Resuscitation Trolley	BRES-SJ				1	x	1.5	1	x	1.5	
Dark Room					1	x	6	1	x	6	Optional
Workshop – Biomedical	WS-BM-SJ				1	x	40	1	x	50	
X-ray Viewing and Reporting	XRRR-SJ				1	x	12	1	x	12	PACS may be used
Radiation Treatment											
Bunker Waiting	WAIT-10-SJ Similar				2	x	3	4	x	3	Separate Male/Female areas
Bay – Linen Trolley	BLIN-SJ				1	x	2	1	x	2	
Bay – Wheelchair Park,	BWC-SJ				1	x	4	2	x	4	
Change Cubicle - Patient	CHPT-SJ				2	x	2	4	x	2	Separate Male/Female areas
Change Cubicle - Accessible	CHPT-D-SJ				2	x	4	2	x	4	Separate Male/Female areas
Interview Room	INTF-SJ					x		4	x	12	1 per bunker
Radiotherapy Bunker Room	RAD-BUNK-SJ				2	x	150	4	x	150	150m2 spatial allocation for one linear accelerator bunker includes maze &
Radiotherapy Bunker Control Room	RAD-BCTR-SJ				2	x	17	4	x	17	
Office - 3 Person Shared	OFF-3P-SJ					x		1	x	15	Shared between 4 bunkers
Store - Equipment	STEQ-10-SJ				1	x	10	1	x	14	
Toilet - Patient	WCPT-SJ				2	x	4	4	x	4	Separate Male/Female areas
Brachytherapy Suite (Optional)											
Staff Station/ Clean Utility	SSCU-SJ							1	x	9	
Waiting - Sub								1	x	5	
Patient Bays - Holding/ Recovery	PBTR-H-10-SJ Similar							1	x	10	Separate Male/Female areas; for patient recovery
Bay - Handwashing, Type B	BHWS-B-SJ							1	x	1	
Bay - Linen	BLIN-SJ							1	x	2	
Bay – PPE (Personal Protective Equipment)	BPPE-SJ							1	x	1.5	
Bay - Resuscitation Trolley	BRES-SJ							1	x	1.5	
Toilet - Patient	WCPT-SJ							1	x	4	
Change - Staff (Male/Female)	CHST-12-SJ Similar							2	x	10	
Brachytherapy Treatment Planning	RAD-TRP-SJ							1	x	58	
Scrub Up	SCRB-6-SJ							1	x	6	
Operating Room - Minor	ORMS-SJ							1	x	36	
Store - Sterile Stock	STSS-12-SJ							1	x	7	Adjacent to Minor OT
CT Scanning - Procedure Room	CTPR-SJ							1	x	45	
CT Scanning - Control Room	CTCR-SJ							1	x	10	
Airlock	AIRL-6-SJ							1	x	6	To sterile areas
Change Cubicle - Accessible	CHPT-D-SJ							1	x	5	
Toilet - Patient	WCPT-SJ							1	x	4	
Clean-up/ Dirty Utility - Sub	CLUP-7-SJ/							1	x	9	
Bay - Linen	BLIN-SJ							1	x	2	
Store - General	STGN-8-SJ Similar							1	x	10	

ROOM/ SPACE	Standard Component				2 Bunkers Qty x m²			4 Bunkers Qty x m²			Remarks
Cleaner's Room	CLRM-5-SJ							1	x	5.5	
Brachytherapy Control Room								1	x	17	
Staff Areas											
Toilet - Staff	WCST-SJ				2	x	3	4	x	3	
Office – Single Person	OFF-S12-SJ				1	x	12	1	x	12	
Office- Single Person	OFF-S9-SJ				3	x	9	5	x	9	
Office – 2 Person Shared	OFF-2P-SJ				1	x	2	2	x	2	
Staff Room	SRM-25-SJ				1	x	20	1	x	30	
Shower - Staff	SHST-SJ				2	x	3	2	x	3	Separate Male/Female areas
Property Bay - Staff	PROP-3-SJ				1	x	3	1	x	3	Separate Male/Female areas
Meeting Room	MEET-L-30-				1	x	20	1	x	40	
Shared Support Areas											
Cleaner's Room	CLRM-5-SJ				1	x	5	1	x	5	
Store - General	STGN-20-SJ				1	x	20	1	x	20	
Store - Equipment	STEQ-16-SJ Similar				1	x	15	1	x	15.	
Disposal Room	DISP-8-SJ				1	x	10	1	x	10	
Expansion Areas											
Radiotherapy Bunker/ Control Shell Areas	RAD-BCTR-SJ							2	x	180	Allow for Shell area for 2 x Bunkers, Control, Change rooms, Waiting
Net Department Total							1109.5			2452.5	
Circulation %							35			35	
Grand Total							1497.8			3310.9	

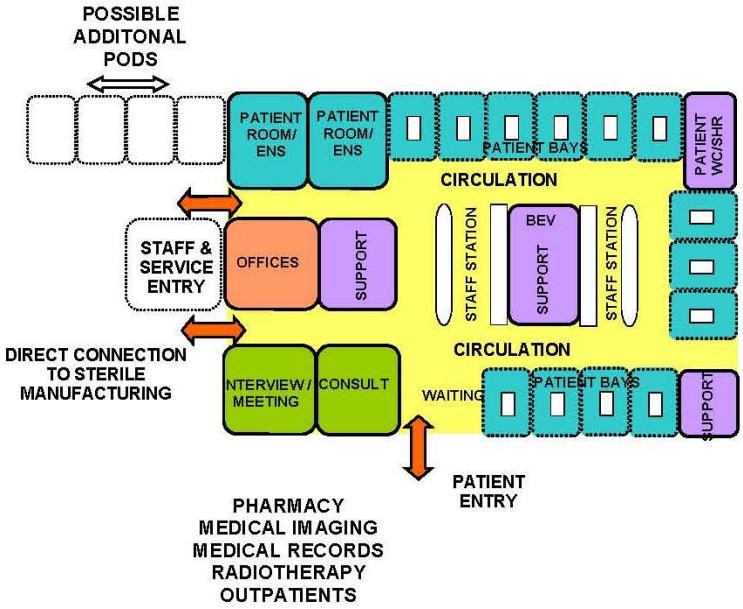
Notes:

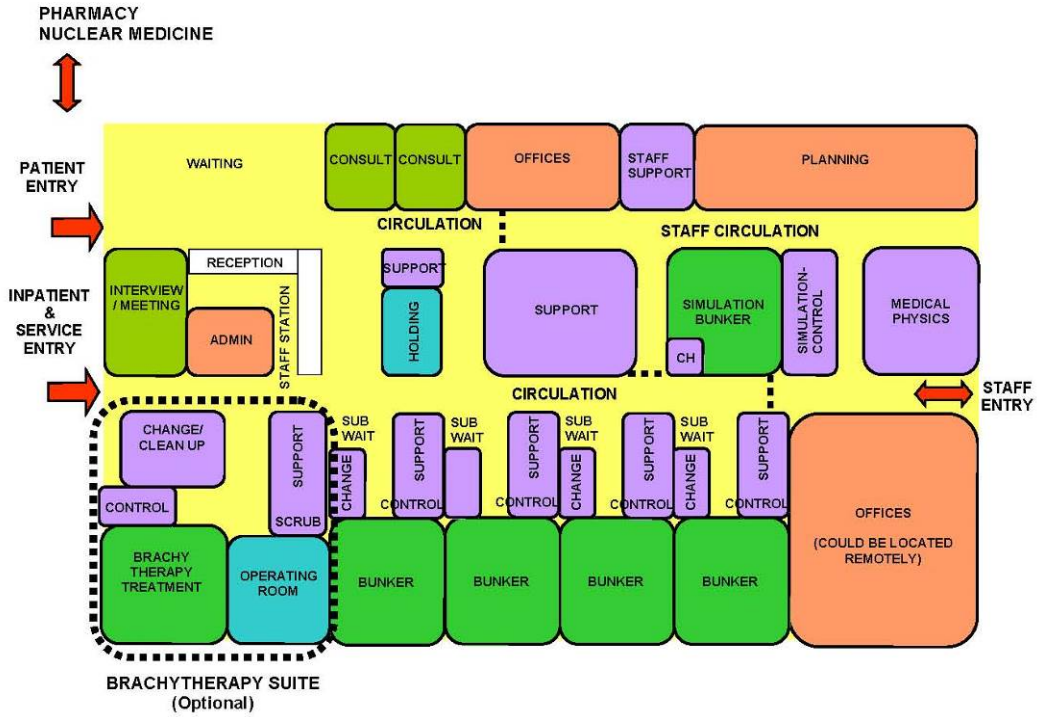
- *Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU*
- *Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation*
- *Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the Service Plan and the Operational 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; Executives and Managers may be responsible for more than one area but should have only one office assigned within the campus*
- *Staff and support rooms may be shared between Functional Planning Units dependent on location and accessibility to each unit and may provide scope to reduce duplication of facilities.*

37.6 Functional Relationship Diagram



ALTERNATE





37.7 Further Reading

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