

43.0 Sterile Supply Unit (SSU)

43.1 Introduction

43.1.1 General

A Hospital must provide adequate facilities for cleaning, sterilization and storage of equipment and instruments to ensure the care and safety of patients, and the safety of staff, at all times.

The sterilization process may be carried out entirely or partially onsite, the latter relying on an external supply source to regularly restock the hospital sterile goods store/s. The scale of operation can be small or large, dependent upon the requirements of the serviced departments, for example, an Operating Unit requires the services of a Theatre Sterile Supply Unit (TSSU) or a full Central Sterile Supply Unit (CSSU), whereas an Acute Inpatient Unit requires only a basic sterile supply service.

43.2 Planning

43.2.1 Operational Models

The size and role of the sterile goods supply service shall be clearly defined in the Operational Policy Statement. Operational policies will be drafted on project specific basis by users and staff of the Sterile Supply Unit, the Operating unit and all other relevant staff associated with this service.

43.2.2 Functional Areas

The Central Sterile Supply Unit will include the following functional areas or zones:

- Receiving Area where soiled articles for recycling are received on trolleys from Units throughout the facility
- Decontamination Area where all articles are sorted, rinsed, ultrasonically cleaned or mechanically washed then mechanically dried; this area may also include cleaning of the delivery trolleys
- Packing Area (Clean Workroom) where the clean instruments, equipment and other articles are sorted, counted and packaged for sterilizing
- Sterilizing and Cooling Area where sterilizers are loaded, set into operation and unloaded following completion of the sterilizing cycle
- Dispatch Area where sterile stock is held prior to dispatch to Units in the facility; distribution trolleys may also be located in this area
- Administrative Areas including Offices or Workstations
- Staff Amenities which includes Staff Toilets, Change Rooms and Staff Rooms; these may also be shared with Operating Unit if convenient.

Administrative Areas

A separate room, or space within the Workroom, shall be provided for routine clerical/administrative procedures. The provision of a separate office will depend upon the size of the unit/department. An area for write-up and storage of stationery and files shall be provided.

Clean Workroom

The Clean Workroom will provide packing tables and equipment for assembly of cleaned and dry instruments into sets, wrapped and sealed ready for sterilization. The Clean Workroom shall be in a separate area to instrument preparation. Linen folding, where required, shall be carried out in a separate room, preferably the laundry. The air handling system shall be filtered or discharged direct to the outside to prevent lint build-up and related industrial and fire safety problems. High level supply and low level exhaust is the recommended airflow pattern, with localized high level extraction for heat removal only. Special attention shall be given to the height and depth of workbenches to allow staff to

work sitting or standing. Views to the outside are considered highly desirable. A handwashing basin shall be provided at the perimeter of the room to avoid water contamination of wrapped instrument sets.

Distribution

A distribution point, if required, shall be provided in the form of a staffed counter or stable door, or a pass through cupboard from the sterile store into an adjacent service corridor. No general access is allowed to the SSU.

Receiving and Decontamination Areas

The Receiving area will be used for return of used trolleys and instruments to the Unit for processing. The Decontamination area is where instruments are rinsed, ultrasonically cleaned if appropriate, washed/decontaminated through instrument processing equipment and dried. Special instruments may be hand washed in this area. Instruments may be tracked by using an instrument tracking system.

Staff Amenities

Showers, toilets and secure lockers for staff employed in this area shall be provided. These facilities shall be conveniently located and may be shared with the Operating Unit staff in cases where the Sterile Supply Department is attached to the Operating Unit. A lunch room can be a shared central facility outside the Sterile Supply Department. Access to a training room in close proximity to SSU for formal training activities is recommended. Facilities shall also be provided in the Change Room to store caps, overalls and footwear protection. 'Barrier' principles are observed when entering the unit.

Storage

A room shall be provided for the storage of processed sterile packs etc. Ventilation, humidity and temperature control is required. Supply air pressure shall be positive with respect to surrounding areas and the level of filtration shall equal or exceed that of the Operating Room. Storage cupboards shall be fitted with doors. A separate room shall be provided to store stock that is 'clean' but not sterile. Access to this room shall be provided from outside the unit for stocking, and from within the unit for drawing stock to process. Space shall also be provided for storing trolleys as required.

43.2.3 *Functional Relationships*

The Sterile Supply Unit (SSU) should be located with direct or close access to the Operating Unit. In the event where Operating Unit and SSU are on different floors, sterile and dirty lifts will be required to run directly between the two units. SSU should also have ready access to Supply Unit and Linen Handling Unit for delivery of supplies. Access to the CSSU should be restricted to authorized personnel only.

Refer also the Functional Relationships Diagrams in this section.

43.3 Design

43.3.1 *General*

The planning of the facility must provide for separate clean and dirty working areas with a defined unidirectional workflow that prevents cross contamination of items being processed.

43.3.2 *Communications*

A telephone or intercom system should be installed within the Clean Workroom and/or Office to allow communication with outside personnel and departments, without breaching the 'clean barrier' regime.

43.3.3 *Finishes*

Floor finishes shall be easy to clean. Wet areas shall have a suitable non slip finish. Welded sheet vinyl, covered up the wall, is recommended. Wall finishes shall also be easy to clean, with special consideration for damage by trolleys. Windows, if provided, must be unable to be opened. The ceiling shall be of a flush type and sealed against the walls.

43.3.4 *Building Service Requirements*

Air Filtration

Where the Sterile Supply Unit is attached to an Operating Unit, ventilation shall be provided by a treated air supply, with compliant air-conditioning systems and HEPA filters.

Lighting

Light fittings shall be fully recessed and selected to prevent dust and insects from entering. Light levels shall be not less than 400 lux.

Signage

Door signs are required to provide instruction as to the closed nature of the department and the limited access points for services.

43.4 Components of the Unit

43.4.1 *Introduction*

The Central Sterile Supply Unit will consist of a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets.

43.4.2 *Non-Standard Components*

Provide the Non-Standard Components as identified in this section and in the Schedule of Accommodation, according to the Operational Policy and Functional Brief.

Receiving Area

Description and Function

A lobby shall be provided for return of used items and trolleys.

Location and Relationships

The Receiving Area should be located with ready access to Trolley Wash and Decontamination area.

Considerations

The Receiving Area will require:

- Smooth, impervious and easily cleanable surfaces to walls and ceiling
- Impervious and non-slip finishes to the floor
- Hot and cold water outlets
- Staff hand washing basin.

Trolley/Cart Wash

Description and Function

An area shall be provided for stripping, washing and disinfecting of trolleys and carts.

Location and Relationships

The Trolley Wash area should be located with ready access to Receiving Area.

Considerations

The trolley washing area will require:

- Smooth, impervious and easily cleanable surfaces to walls and ceiling
- Impervious and non-slip finishes to the floor
- Hot and cold water outlets.
- An automated trolley wash unit may be used.

Decontamination

Description and Function

The Decontamination area shall contain work space and equipment for sorting, decontamination and cleaning medical and surgical equipment, and for disposal of used/soiled material. It shall include hand-washing facilities. The Decontamination functions may also be provided in a Clean-Up Room. There will be a need to provide special types of cleaning equipment, dependent on the level of service, for example, ultrasonic cleaners, anesthetic tubing washers and dryers.

Location and Relationships

The Decontamination area should be located between the Receiving area and the Clean Workroom/Packing area.

Considerations

The Decontamination area will require the following finishes:

- Walls and ceiling that are smooth, impervious, and easily cleanable
- Floors that are impervious and non-slip.

Fittings and fixtures located in this area will include the following:

- Stainless steel deep bowl sinks with tubing manifolds (air and water) and additional water outlets for water pistols
- Stainless steel benches
- Instrument and tubing washers/decontaminators, according to service requirements
- Ultrasonic cleaner, according to service requirements
- Instrument and tubing dryers, according to service requirements
- Staff handwashing basin
- Exhaust air extraction over sinks and equipment doors.

Clean Workroom/Packing

Description and Function

The Clean Workroom/Packing area is where cleaned and dried instruments are removed from the decontaminating/drying equipment, sorted, assembled into sets and packaged, ready for sterilizing.

Location and Relationships

The Clean Workroom/Packing area will be located between the Decontamination area and the Sterilizing area, with a unidirectional workflow from contaminated to clean areas.

Considerations

Refer to Functional Areas above for inclusions in this room. Consideration should be given to ergonomics aspects of packing tables, adjustable height tables and equipment is recommended. Instruments in this area may be tracked by using an instrument tracking system.

Sterilizing and Cooling

Description and Function

The Sterilizing and Cooling Area provides accommodation for sterilizers and parking space for sterilizer and cooling trolleys. Following unloading of the sterilizer, packs should not be handled until cool. Specialized sterilizers such as ethylene oxide, require separate installation and accommodation. Low temperature specialized sterilizers require separate installation according to manufacturer's recommendations. The size of the area will be dependent on the number and type of sterilizers installed.

Location and Relationships

The Sterilizing and Cooling area should be located between the Sorting and Packing area and the Dispatch area. Special consideration shall be given to the location of the sterilizers. External access to a sterilizer duct is highly desirable so that repairs or routine maintenance do not interfere with the activities within the Workroom. A duct enclosure can also minimize heat build-up within the Workroom. An exhaust over the front of the sterilizer/s shall also be considered, to extract both heat (cabinet) and steam (opening door).

Considerations

An exhaust over the front of the sterilizer/s shall be considered, to extract both heat (cabinet) and steam (opening door).

43.5 Schedule of Accommodation

Typical Sterile Supply Unit with 2 and 4 sterilisers

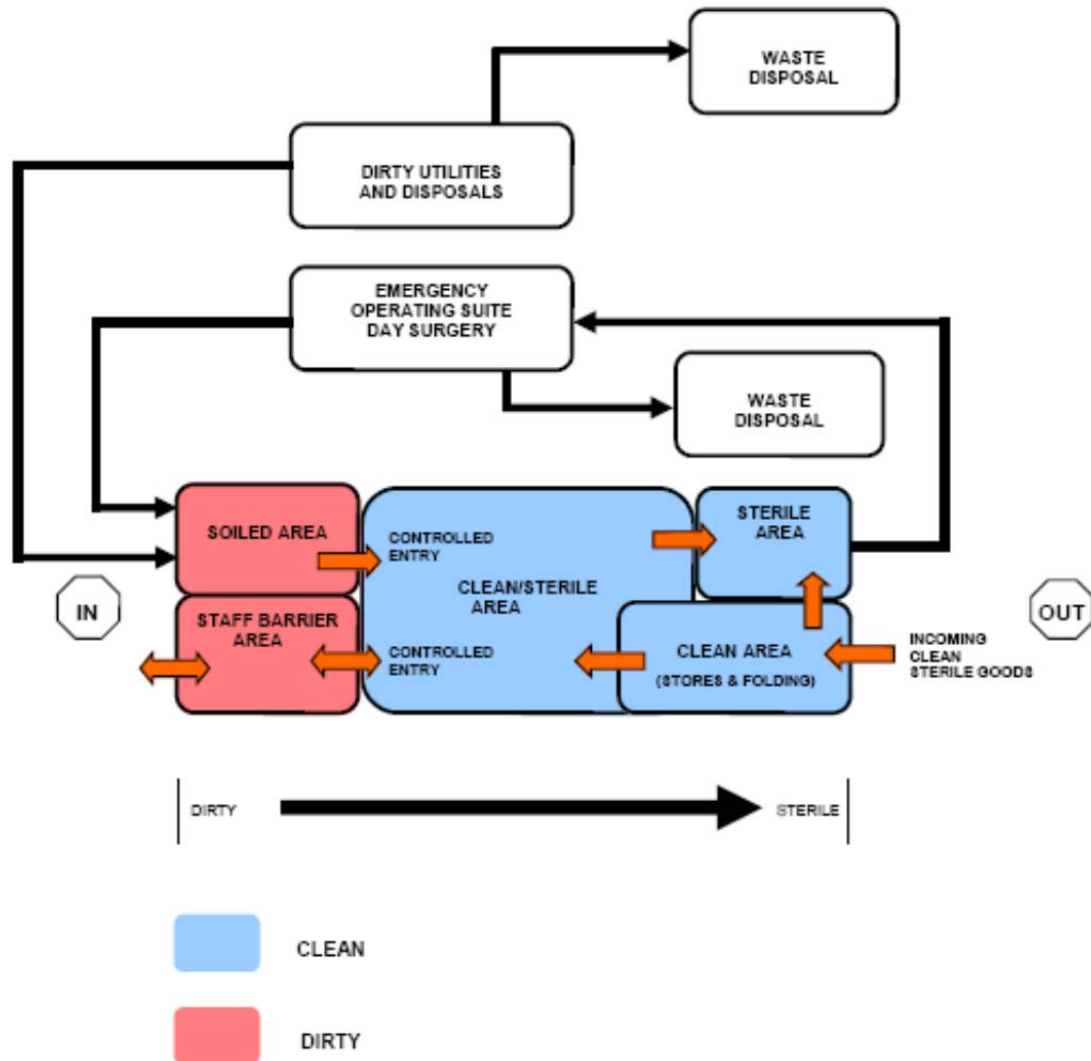
ROOM/SPACE	Standard Component				2 Sterilizers Qty x m ²				4 Sterilizers Qty x m ²		Remarks
Entry/Reception											
Reception Clerical	RECL-15-SJ RECL-15-SJ				1	x	9	1	x	12	
Store – Photocopy/Stationery	STPS-8-SJ				1	x	8	1	x	8	
Sterile Supply Areas											
Cleaner's Room	CLRM-5-SJ				1	x	5	1	x	5	Within Unit
Disposal Room	DISP-8-SJ				1	x	10	1	x	10	Access to external corridor
Goods Receipt – Non Sterile Stock					1	x	15	1	x	25	
Receiving Area – Used Items					1	x	20	1	x	35	Return of used items
Trolley Park					1	x	60	1	x	120	Depends on operational policy
Trolley Wash					1	x	20	1	x	30	May use automated trolley wash unit
Decontaminating/Instrument Washing/Trolley Stripping					1	x	60	1	x	170	
Instrument Sorting/Assembly/Packing					1	x	110	1	x	220	Check
Sterilising – High Temperature					1	x	60	1	x	120	4 sterilisers with expansion space for additional 2 sterilisers, includes plant
Sterilising – Low Temperature					1	x	16	1	x	30	Free standing; includes peracetic acid/ plasma types
Cooling Area					1	x	50	1	x	120	
Store – Chemical					1	x	6	1	x	6	Chemicals used in decontamination
Store – Sterile Stock	STSS-20-SJ				1	x	65	1	x	125	Adjust to 10m ² per OR; May be located in Operating Unit
Store – General	STGN-12-SJ STGN-20-SJ				1	x	12	1	x	20	Bulk goods receipt, de-cartoning; Linen
Store - Loan Set Equipment Receiving/Dispatching	STGN-8-SJ STGN-12-SJ				1	x	9	1	x	12	For loaned instrument sets from supplies
Staff Areas											
Change – Staff (Male/Female)	CHST-12-SJ CHST-20-SJ				2	x	20	2	x	30	Toilet, Shower, Lockers
Meeting Room	MEET-L-15-SJ MEET-L-30-SJ				1	x	20	1	x	30	Meetings, staff training
Office – Manager	OFF-S9-SJ				1	x	9	1	x	12	
Staff Room					2	x	15	2	x	20	Could be shared with adjacent OR, may be combined in smaller Units
Net Department Total							634			1210	
Circulation %							20			20	
Grand Total							760.8			1452	

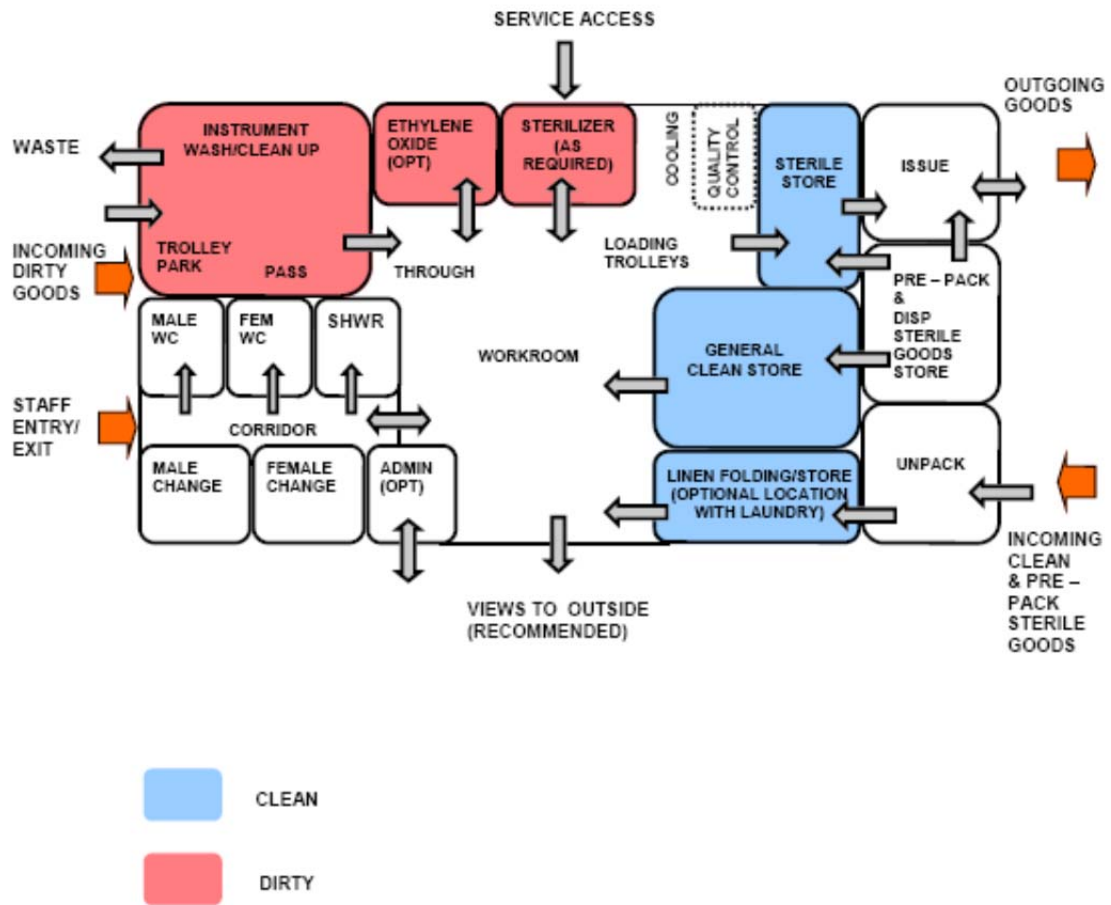
Notes:

- 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.

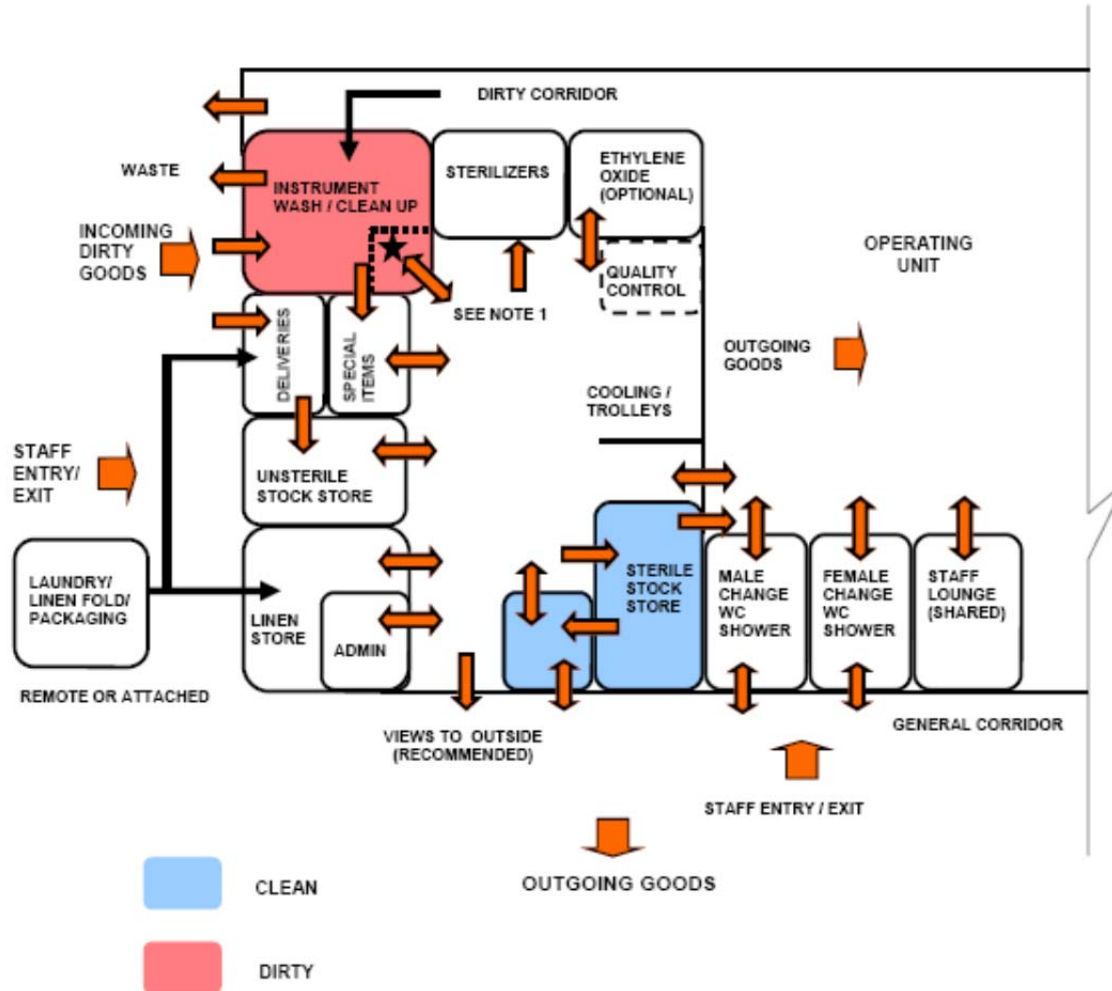
43.6 Functional Relationship Diagram





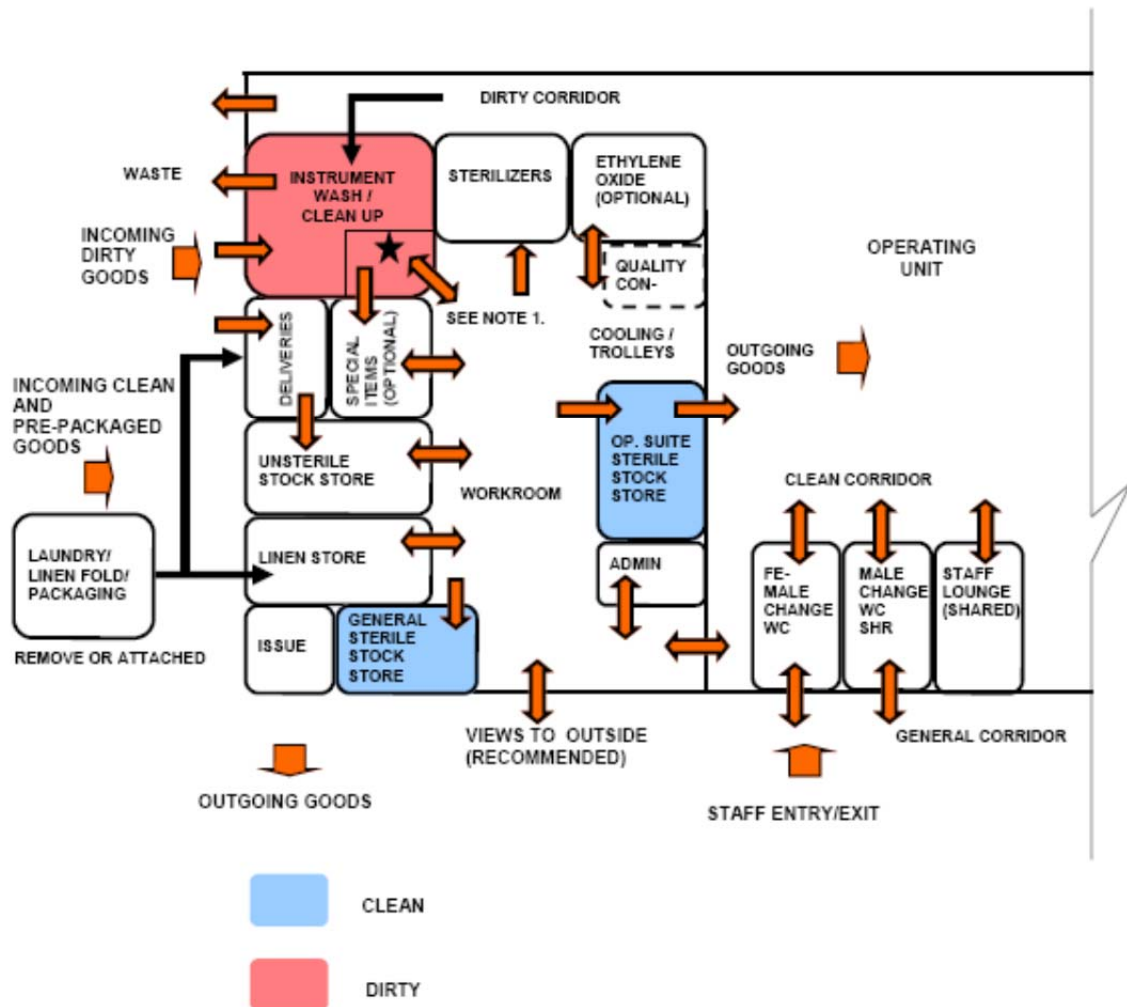
NOTE 1 DIRECT ACCESS (OTHER THAN PASS THROUGH) BETWEEN INSTRUMENT WASH AND THE WORKROOM SHOULD BE RESTRICTED OTHER THAN IN SMALL FACILITIES WHERE DUPLICATION OF STAFF FOR BOTH "CLEAN" AND "DIRTY" AREAS IS NOT POSSIBLE

★ BARRIER ENTRY (SRUC - UP, GOWN, ETC PRIOR TO RE - ENTRY)



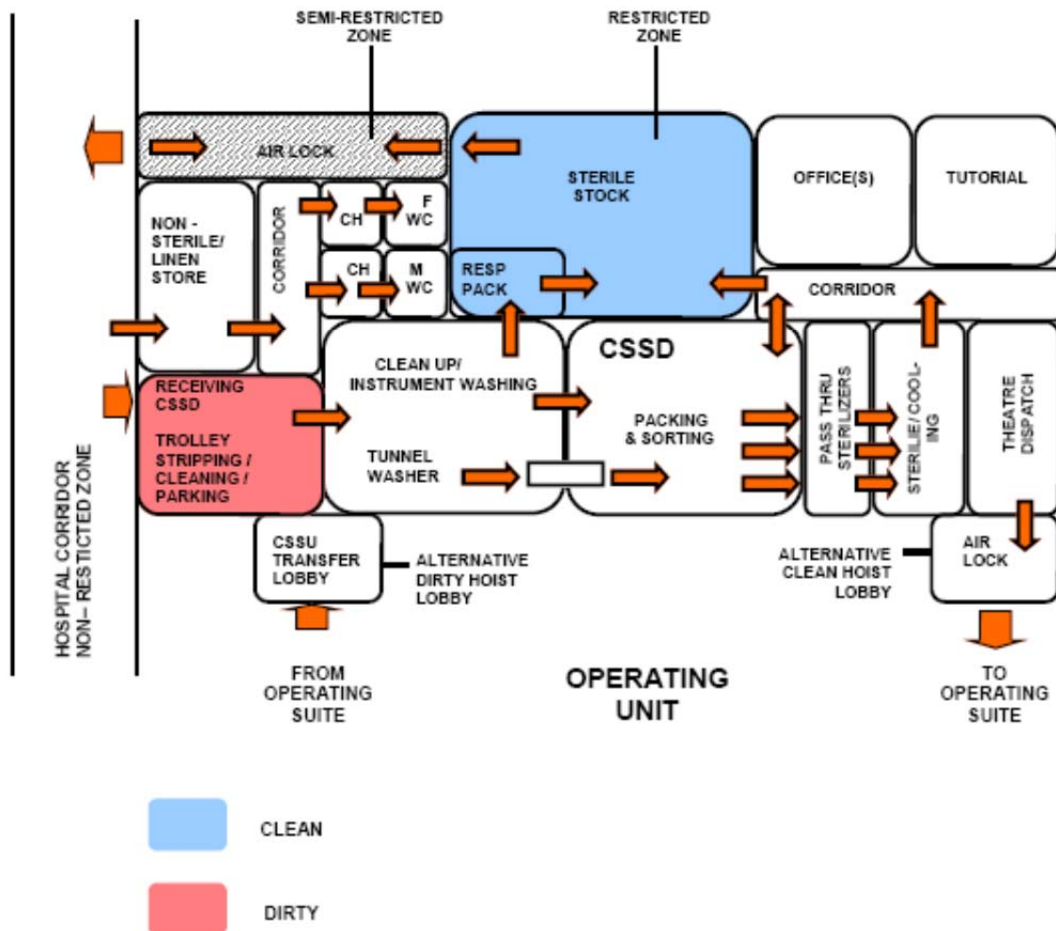
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NOTE 1 ONLY THE MOST IMPORTANT FUNCTIONS ARE SHOWN FOR CLARITY

NOTE 2 CSSU MAY BE CONNECTED TO OPERATING SUITE VIA CLEAN/DIRTY HOISTS
CSSU TRANSFER LOBBY MAY BE REPLACED WITH DIRTY HOIST LOBBY
THEATRE DISPATCH AIR-LOCK MAY BE REPLACED WITH CLEAN HOIST LOBBY



43.7 Further Reading

- Australasian Health Infrastructure Alliance (Aus.). '*Australasian Health Facility Guidelines*'. Retrieved from website: www.healthfacilityguidelines.com.au 2014
- Australasian Health Facility Guidelines (Aus.). '*Part B – Health Facility Briefing and Planning 190 Sterile Supply Unit*' Revision 4' 2010. Retrieved from website: http://healthfacilityguidelines.com.au/AusHFG_Documents/Guidelines/AusHFG%20Part%20B%20Health%20Facility%20Briefing%20and%20Planning%20%2000190%20Sterile%20Supply%20Unit.pdf 2014
- Department of Health (DH) (UK). '*Health Briefing Note 13 Sterile Services Department*' 2004. Retrieved from website: <http://www.wales.nhs.uk/sites3/Documents/254/HBN13321412x1992.pdf> 2014
- National Coordinating Committee on Therapeutic Goods (NCCTG) (Aus.). '*Standard for the Operation of Sterile Supply/Services in Health Care Facilities*' 1995. Retrieved from website: <http://www.tga.gov.au/index.htm> 2014
- Standards Australia (Aus.). AS/NZS 4187 Cleaning, Disinfecting and Sterilizing Reusable Medical and Surgical Instruments and Equipment, and Maintenance of Associated Environments in Health Care Facilities' 2003. Retrieved from website: <http://www.saiglobal.com/PDFTemp/Previews/OSH/as/as4000/4100/4187.pdf> 2014
- The Facility Guidelines Institute (US). '*Guidelines for Design and Construction of Health Care Facilities*' 2010 Edition. Retrieved from website: www.fgiguidelines.org 2014.