Part B – Health Facility Briefing & Design

60 Day Surgery/Procedure Unit

iHFG

International Health Facility Guidelines

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60 Day Surgery/ Procedure Unit

1 Executive Summary

The Day Surgery Unit (FPU) refers to a Functional Planning Unit which covers the requirements of a Day Surgery/ Procedure Unit. Within a Day Surgery Unit, patients are received, prepared for a form of surgery or endoscopic procedures Then the patient recovers sufficiently to go home within the same day. Day is defined as any 24hour period from initial admission to discharge.

This FPU covers a self-contained Day Surgery Unit, whether it is within a hospital or in a separate building such as a Day Surgery Centre or a Polyclinic. For a Day Surgery Unit which is within a Hospital and is integrated with an Operating Unit (and possibly Endoscopy Unit), please see the separate Operating Unit FPU.

The Day Surgery Unit Guidelines describe the operational, functional and design requirements for a number of operational models such as Sameday Surgery and 23 Hour Surgery.

The Day Surgery Unit will have one or more Operating Rooms (sometimes referred to as Procedure Rooms), with provision to deliver anaesthesia and accommodation for the immediate post-operative recovery of patients. In stand-alone Day Surgery Units, which are not connected to an Operating Unit within a hospital, only minor, un-complicated surgery and procedures are performed as the facility lacks the usual support facilities for complex surgery or post-surgery patient inpatient care.

The Day Surgery Unit will have the required supporting facilities for staff changing, scrubbing and gowning before the operations. It will have the necessary supporting facilities such as sterile stock store, equipment stores and clean-up rooms.

Some of the provisions for the supporting areas are fixed and others may be parametric and depend on the number of operating rooms. For example, the number of recovery bays will depend on the number of operating rooms.

The Day Surgery Unit may be merged with an Endoscopy Unit to form a fully integrated unit, saving on size, resources and costs. The components of this Unit which may be shared with the Endoscopy Unit are noted.

The Functional Relationship Diagrams for the Day Surgery Unit indicate the ideal internal relationships between the key rooms, based on the flow of patients, staff and goods. There are 8 permutations of the planning model indicating the relationships between the key rooms within in this FPU, such as the Operating Room, Scrub Room, Sterile Stock room and Clean-up room. There is a particular air pressurisation regime applied to each of these permutations and indicated in this FPU.

Design Considerations address a range of important issues including Finishes, Accessibility, Acoustics, Safety and Security, Building Services, and Infection Control.

This FPU describes the minimum requirements for support spaces of a typical Day Surgery Unit at Role Delineation Levels 2 to 6. At RDL 5 & 6, Day Surgery Unit may only be within a hospital.

The typical Schedule of Accommodation (SOA) is provided using Standard Components (typical room templates) and quantities for the rooms. Optional specialised operating room types are also noted and can be selected separately. The SOA is presented for several different facility sizes and guide the designers to create their project-specific SOA's.

For each of the nominated room types within the SOA the code link to the corresponding Room Data Sheets (RDS) and Room Layout Sheets (RLS) has been provided. Readers may use those codes to access this information on the rooms in the section titled Standard Components on the website.

Further reading material is suggested at the end of this FPU but none are mandatory.

Users who wish to propose minor deviations from these guidelines should use the Non-Compliance Report (in Part A appendices) to briefly describe and record their reasoning based on models of care and unique circumstances. The responsible Health Authority may then consider the circumstances and accept such deviations.

2 Introduction

The Day Surgery/ Procedure Unit provides a safe and controlled environment for the operative care of patients undergoing surgical and endoscopic procedures under local or general anaesthesia and peri-operative care including pre-operative changing and preparation and post operative recovery within a day without admission to a hospital Inpatient Unit. Such a facility may be on a hospital campus, in a separate stand-alone building or merged with a polyclinic.

Day Surgery is sometimes referred to as Outpatient Surgery, Day Care Surgery or Minor Surgery, depending on the context of discussion. In the context of this FPU, the term Surgery has the same meaning as Procedure. In common language Surgery is regarded as more critical and risky than a Procedure.

The name “Day” Surgery does not necessarily imply that the unit only functions during daylight hours. The definition of Day is any period of 24 hours from admission to discharge. Therefore, there are no restrictions on the hours of operation within these Guidelines. Hours of operation are only subject to the local authority permissions for the business hours (if any).

Only minor, uncomplicated surgery and simple procedures may be performed in a Day Surgery unit as facilities and personnel required for a more complex, risky surgery will not be available within a Day Surgery Unit. The range of procedures that may be undertaken in a Day Surgery/ Procedures Unit may include (but are not limited to):

- Minor Surgical procedures, particularly ENT, Dental, Plastic Surgery, Ophthalmology, Epidermoid Cyst removal and similar
- Endoscopy - gastrointestinal, respiratory, urology
- Electroconvulsive Therapy (ECT) for mental health inpatients
- Day Medical Procedures including intravenous infusions and minor treatments.
- Orthopaedic, Hand, and Gynecology
- Cosmetic procedures such as hair transplant
- The full list of surgeries which may be carried out in a Day Surgery/ Procedure Unit will depend on the facility’s operational policy, availability of the necessary skilled staff and health authority local regulations. It will also depend on the ability to safely perform the surgery within the Unit without immediate support of a full Hospital’s resources.

3 Functional & Planning Considerations

Operational Models

The range of options for a Day Surgery/ Procedure Unit may include:

- A standalone center, fully self-contained
- A dedicated fully self-contained unit located within a hospital
- A Unit integrated with the Operating Unit with shared facilities in a hospital
- A Unit integrated with the Endoscopy Unit with shared facilities in a hospital or standalone
- A Unit within a Polyclinic
- A Unit collocated with a specialist clinical service such as Gastroenterology or Respiratory Medicine, within a hospital at RDL 4 and above or stand-alone.

If the Day Surgery Unit is integrated or collocated with other facility types mentioned above, various support services may be shared, as appropriate to minimise duplication.

Day Surgery services can be provided at RDL 2 to 6.

Model of Care

Up to 70% of all surgery may be performed as Day Surgery as opposed to Inpatient Surgery. Every surgical case performed as Day Surgery will save between 1 to 3 bed days as inpatient unit (IPU) beds will not be required for the patient. This will save costs within the healthcare system.

Models of care will affect the service plan and operational policies of a facility. Therefore, it is important to determine the model of care as one of the following:

- Day Surgery for same day patients who are discharged home before midnight.
- 23 Hour Surgery, as above but recovery may be overnight and discharge home sometime the following day. The entire process from admission to discharge must be completed in less than 24 hours.
- DOSA (Day of Surgery Admission) otherwise referred to as Sameday Surgery as above followed by transfer to an inpatient unit for extended recovery within a hospital. Therefore the DOSA unit can only exist as a unit on a hospital campus.

The above models of care are described in greater detail below.

Day Surgery

Day Surgery patients are usually organised to arrive very early (e.g. 6 am) with the aim of starting surgery at 7 am. Day Surgery patients will recover in the unit and go home before the evening. This means sufficient time should be set aside for the last patient's recovery. The last surgery, therefore, may be around 4 pm or earlier.

Patients change in private bed cubicles or change rooms in the pre-operative area of the attached Day Surgery facility. Dedicated change rooms are only optional if private bed cubicles with sufficient privacy are provided.

Patients who undergo Day Surgery under general anaesthesia will initially recover in Recovery Stage 1 just as Inpatient Surgery. After they wake up, they are transferred to Recovery Stage 2 which is in the style of a lounge for further recovery before they are discharged to go home.

For some minor procedures, the patient may not undergo general anaesthesia or may wake up immediately after surgery. These patients do not need to go through Stage 1 Recovery, they can go directly to Stage 2 Recovery.

Stage 1 Recovery is seen as an integral part of the interior of the Surgical zone, subject to the clinicians, staff and patients being changed.

However, Stage 2 Recovery is seen as being outside of the Surgical zone, replicating the functionality of an Inpatient Unit (IPU) but without individual bedrooms and ensuite bathrooms. Therefore, as an option, patients may change to their street clothes in Recovery Stage 2. Similarly, the staff working exclusively in Recovery Stage 2 may be subject to a different dress code, similar to an IPU.

Catheter Lab

If the Day Surgery Unit is located within a Hospital at RDL 4 to 6, it may be integrated with a Catheter Lab. All the patient management and staff amenities may be shared but sized for the requirements of both Units. Ideally the Catheter Lab (procedure rooms) should be located close to Stage 1 Recovery bays. Cather Labs serving walk-in patients are referred to as Day Cath.

Endoscopy

Endoscopy procedures may follow the same patient flows as Day Surgery. It is anticipated that over time many types of surgery will require a form of endoscopy. Therefore, surgical facilities need to gradually prepare themselves for every operating room to be regarded as an endoscopy theatre. With careful design it is not necessary to perform endoscopy in a separate unit. As long as the endoscopy rooms are discretely located at one end of the Day Surgery Unit, there should be no need to duplicate other facilities. Ideally the section of corridor which serves the Endoscopy procedure rooms should be separated by doors. However, these doors do not need to be lockable.

The typical Day Surgery patient flow diagram is shown below:

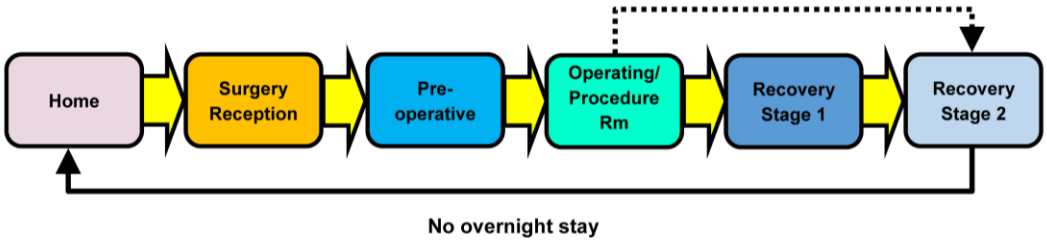


Figure 1: Day (or Outpatient) Surgery patient flow diagram

23-Hour Surgery

Under the above Day Surgery models, the Stage 2 Recovery facilities will be unused overnight. This is seen as a waste of resources and valuable investment, resulting in the introduction of 23 Hour Surgery. 23-Hour Surgery is very similar to Day Surgery with the exception that procedures can be scheduled at any time of the day as there is no operational time limit imposed on procedures.

The patient may be admitted at any time including in the late afternoon with a scheduled surgery at any time including late afternoon or evening. Therefore, the patient may recover in the Stage 1 Recovery then stay overnight (may consider a Private room as an optional for a Private sector) in the Stage 2 recovery which has been enhanced for overnight stay. The patient is then discharged the next morning prior to the arrival of other patients requiring day surgery. Additional overnight nursing personnel and suitable facilities for the patient's overnight stay (e.g., toilets, showers with reasonable privacy) must be provided.

Patient admission and discharge in this model must occur in a period of no more than 24 hours regardless of the starting and finishing time. The staffing and services attending to the patients must be equal to the daytime with no compromises.

The patient flow diagram for this model is shown below:

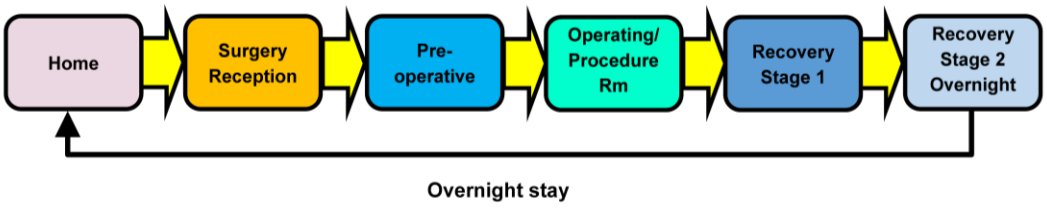


Figure 2: 23-Hour Surgery patient flow diagram

DOSA (Day of Surgery Admissions)

This model is only applicable to a Day Surgery/ Procedure Unit located within a hospital campus.

This model is a hybrid between Day Surgery and Inpatient Surgery. In this model the start of the process is similar to Day Surgery, with the patient arriving from home directly to the unit.

However, in this model there is no expectation for the patient to recover and go home the same day. The patient goes through the same process as Day Surgery. However, the patient may undergo more complex surgery than the typical Day Surgery. Then after Recovery Stage 1, the patient will be formally admitted to an inpatient bed for final recovery between 1 and 4 days.

Unlike Day Surgery, DOSA Surgery can continue into the late hours of the night (e.g. 10 pm). This process will save one bedday for each DOSA patient, which will save costs for the healthcare system. It also preserves one bedday for inpatient surgery cases or medical patients. DOSA is only an operational model with no additional facilities required beyond those already provided for Inpatient Surgery and Day Surgery.

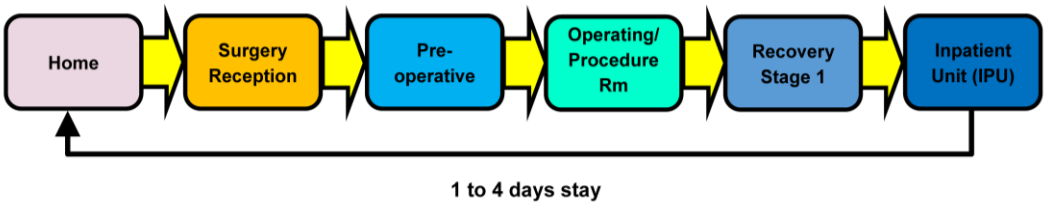


Figure 3: Same-day Surgery/ DOSA patient flow diagram

23 Hour Surgery

Under all of the above models, the Stage 2 Recovery facilities will be unused overnight. This is seen as a waste of resources and valuable investment, resulting in the introduction of 23 Hour Surgery in some countries. This model is similar to Day Surgery, but there is no limit on how late the surgery can take place. A patient may be admitted in late afternoon and undergo surgery as late as 10 pm. Then the patient will recover overnight in the Recovery Stage 2 facilities and be discharged the next morning before the new patients require this facility. Discharge can occur by around 7 am the following morning. This model requires the provision of toilets, showers and overnight nursing within the Recovery Stage 2 area. Also, the Recovery Stage 2 area should be provided with full beds or reclines which can be adjusted to full flat for overnight recovery.

The ideal arrangement for 23 hour surgery is to arrange Recovery Stage 2 as a small version of an Inpatient Unit with small but private cubicles with sliding glass front and individual ensuites. This, however is not mandatory and the traditional curtain cubicle bed bays with shared toilets and showers are also permissible.

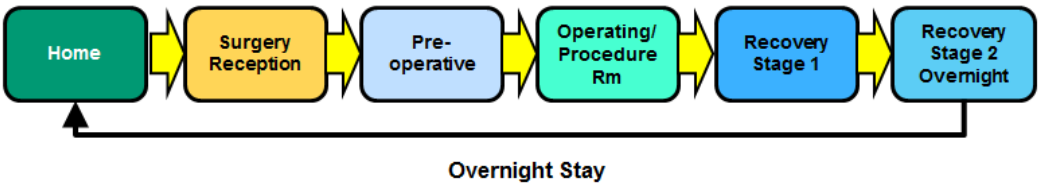


Figure 4: 23 Hour Surgery patient flow chart

4 Planning Models

The Day Surgery Unit must be located and arranged to prevent non-related traffic through the Unit.

The number of Operating Rooms and Recovery beds and the sizes of the service areas should be based on the service plan and expected surgical workload. The size, location, and configuration of the surgical suite and support services should reflect the projected case load, the operational model and planning model of the Unit.

A number of planning models and components which should be considered are explained below:

Single Corridor model

The single corridor model involves travel of all supplies (clean and used) as well as patients (pre and post-operative) in one main corridor. This option suits relatively compact facilities. It is considered suitable provided:

- The main corridor is sufficiently wide in order to permit the passage of goods and patients
- Handling of clean supplies and waste in sealed carts is carefully managed to avoid cross contamination

Racetrack (or Sterile Core) model

The Racetrack model allows for all the Operating rooms to be accessed from a corridor system which wraps around a group of operating rooms, usually in two rows, for patient transfers into and out of the operating rooms. The central area between the operating rooms is dedicated to the sterile

stock store with direct access to each of the operating rooms. This model is also referred to as the Sterile Core model.

This model can be more compact than the Single Corridor model and suits larger facilities. A Single Corridor Model can be later duplicated (mirrored) to become the Racetrack model so it is a good option for staging major expansions.

Dedicated Theatres with Fixed or Mobile Equipment

Generally, it is recommended that around 50% of the operating rooms be designated as General (non-specialised). These General theatres will provide flexibility for a wide range of operations. When necessary, specialised equipment can be brough in and used for specific surgeries. The balance of the operating rooms may be specialised for specific operations with fixed equipment to suit.

This category includes urology, orthopaedic, ophthalmology etc. This may be beneficial in larger Day Surgery Units where the case volume justifies specialisation; however, smaller Units may favour flexibility of Operating Room use. Fixed equipment used in specialised operating rooms can restrict the multifunctional use of the room.

TSSU / SSU

The Day Surgery Unit is a major user of sterile stock and therefore location of the sterilisation facilities and sterile stock store are of high importance.

There are two main options available for the supply of sterile stock to the Day Surgery Unit:

- A dedicated TSSU (Theatre Sterile Supply Unit or sometimes referred to as CSSD) serving only the Day Surgery Unit. This arrangement is the default when there is a stand-alone Day Surgery Unit.
- An SSU (Sterile Supply Unit) that serves the Operating Unit, Day Surgery Unit and other areas within a hospital campus.

TSSU is usually smaller than SSU. It should be directly attached to the Day Surgery Unit or embedded within the Day Surgery Unit. The TSSU sterile stock store can be merged with the Day Surgery Unit sterile stock store without the need for duplication.

The SSU may be attached to the Operating Suite and Day Surgery Unit for maximum operational efficiency. However, sometimes this arrangement will prevent a future expansion of the surgical components or may not fit into the building footprint. As an alternative, both SSU and TSSU may be on a separate floor and linked to it via dedicated clean and dirty lifts. Reference to dedicated lifts means that the same lifts cannot connect to other floors or be used for any other purpose. Such dedicated lifts will be regarded as vertical corridors or airlocks connecting two related FPU's and compatible functions.

In existing buildings with multiple restrictions where the Day Surgery Unit and TSSU or SSU cannot be directly linked via lifts, then transportation of instruments (sterilised or used) via service corridors of the hospital in hermetically sealed carts may be acceptable to the Health Authorities. However, this arrangement is not generally recommended and should not be used in new facilities.

The changing facilities for the staff working on the clean side of the TSSU or SSU (eg Sorting and Packing or Sterilising areas) can be shared with the Operating Unit or Day Surgery Unit. However, the staff working in the decontamination area of TSSU or SSU should have dedicated changing and toilet facilities or use the Operating Theatre facilities from the corridor outside the Unit and only after removing their PPE's and washing their hands in a room before existing the TSSU or SSU.

The surgical areas of the Day Surgery unit are very similar to the Operating Unit FPU, which may well have an integrated Day Surgery Function. The main difference is that facilities for receiving Inpatients are not required in a dedicated Day Surgery Unit. However, additional facilities for receiving ambulant patients such as reception and waiting are required.

It is typically assumed that a Day Surgery Centre is smaller than a hospital-based Operating Unit. This may be true for most facilities at the current time. However, the trend is to have larger Day Surgery facilities performing increasingly complex procedures. Therefore, over time any differences based on size will diminish.

Functional Areas

The Day Surgery/ Procedure Unit may consist of a number of Functional Areas/ Zones:

- Entry/ Reception including:
  - Reception and Waiting
  - Optional administrative offices such as the Day Surgery booking office
  - Consulting and Interview rooms
  - Storage for files, photocopier, and printers
  - Public amenities, toilets for waiting patients and relatives unless available nearby.
- Patient Pre-op Holding and Preparation including:
  - Pre-op holding bed bays or rooms
  - Staff Station
  - Change rooms and changed waiting areas (separate for males and females), optional if pre-op holding bays are provided
  - Patient toilets and lockers
- Operating Rooms area where procedures are carried out including:
  - Operating Rooms, general, specialty, hybrid, robotic, transplant etc
  - Anaesthetic Induction Rooms (optional)
  - Scrub up rooms
  - Exit Bays
- Support Areas including:
  - Bays for linen, mobile equipment
  - Blood store
  - Cleaners room
  - Clean-up room/s
  - Disposal room
  - Flash sterilizer (if locally permitted)
  - Pathology area for frozen sections
  - Anaesthetic supplies store
  - Drugs store
  - Equipment store/s, including mobile items, table accessories, loan equipment
  - Minor store for items such as small supplies, pre-sterile packs and minor electronics
  - Sterile stock store
  - None-sterile store
- Recovery Stage 1 and Stage 2 where patients are assisted through the process of recovering from the effects of anaesthetic including:
  - Patient bed bays, open and enclosed for Isolation
  - Bays for blanket warmer, linen, handwashing
  - Clean and Dirty Utilities
  - Support areas including utilities, storage for linen stock
  - Patient toilets
  - Patient showers, if 23 hour surgery is intended
  - Store for consumable items and equipment
  - Beverage bay or pantry for Recovery Stage 2
  - Optional Recovery Stage 3 (or discharge lounge)
- Staff Areas incorporating:
  - Change Rooms with showers, toilets and lockers
  - Staff Room
  - Meeting rooms
  - Offices and administrative space for clinical staff

Some of the above zones and components are further described and guidance is provided below:

Entry

A covered Entrance for dropping off and collection of patients after surgery shall be provided. The Entry may be a shared facility and shall include:

- Reception and information counter or desk
- Waiting areas that allow for the separation of paediatric and adult patients, if organized

Paediatric Services are provided.

- Convenient access to wheelchair storage
- Convenient access to public toilet facilities

In stand-alone Day Surgery buildings, it is desirable to separate the external building entry from the Day Surgery Reception area with a public lobby.

Ambulance Access

A discreet pick-up point, preferably under cover, shall be provided for the transfer of patients to and from the Day Surgery/ Procedure Unit.

Car Parking

Adequate car parking facilities with convenient access needs to be provided.

Day Surgery Reception and Waiting

Day Surgery or 23 Hour Surgery Unit will have a separate Reception and Waing area which is not considered as part of the Surgical zone and is not subject to the same dress code. It will be similar to the reception and waiting area of an Outpatient Unit. Therefore, those arriving at this Reception/ Waiting area are in street clothes. They may arrive on foot or on a wheelchair.

The Reception area receives the pre-booked patients and guides them through the Day Surgery processes such as checking the booking and payment system (if any), pre-operative consultation and control of access to the pre-operative area.

The Day Surgery waiting areas with access to amenities should be provided for family groups waiting for patients in surgery. The Reception/ Waiting area should be located to avoid conflict with the surgical or recovery areas.

Once administrative and consultation processes are completed, the patient will be guided to the Day Surgery Pre-operative area.

Clinical Records

A secure room or cupboard shall be provided with provision for storage, recording and retrieval of clinical records. If Day Surgery Unit is part of, or attached to, a hospital, the general clinical records facility might be used in lieu of a dedicated and separate room.

Pre-operative (Pre-op) Holding – Day Surgery and 23 Hour Surgery

After attendance at the Reception/ Waiting, Day Surgery or 23 Hour Surgery patients are directed to the Pre-op Holding area. The purpose of this area is for patients to change into theatre gowns and wait a short time until they are transferred to the Surgical zone of the Operating Unit. If necessary, a patient relative or carer may accompany the patient and give assistance with changing.

The Pre-op Holding area is a series of bed bays separated by privacy curtains with access to toilets and monitored by a staff station. Alternatively, instead of bed bays, bedrooms with solid walls and glazed front and ensuite bathrooms can be considered.

In the Pre-op Holding area there is no need for separate change rooms as the Pre-op bed bay or bedroom is regarded as the equivalent of a temporary inpatient bedroom and changing is undertaken within the bed bay or bedroom. In the case of paediatrics, it is common and desirable for parents to accompany the patient. In the same area, if appropriate sedation (not anaesthesia) can also be administered to the patient.

Patients are generally transferred from this point on beds/ trolleys to the Surgical zone of the Unit through a connecting door or corridor. This process will not require a bed/trolley exchange. Once the bed/ trolley is passed on to the surgical zone, the patient will be in the care of the staff in the surgical zone.

A Preparation Room may be required for patients undergoing certain procedures such as Endoscopy or Ophthalmology.

In short, the Pre-op Holding area can be seen as a temporary and more compact version of an Inpatient Unit. In this area, the patient is completely prepared, then transferred to the surgical zone of the Unit. After the Stage 2 recovery (separately explained in this FPU), the patients can also return back to the Reception/ Waiting area via the Pre-op/ Holding area, if the planning geometry requires

it. Alternatively, they can by-pass the Pre-op/ Holding area and change back to the street clothes within a separate change room or within Recovery Stage 2, then exit via a corridor to the Reception/ Waiting area.

Operating/ Procedure Room/s

The Operating (or Procedure) rooms are designed and set up to perform any type of surgical procedure on the patient. The procedures may be highly invasive, minimally invasive, sterile or non-sterile. The design may vary slightly according to the intended procedure. It is recommended that designers minimise the degree of specialisation as far as practical. A very high level of specialisation can lead to inefficiency in surgical throughput due to the number of useable operating rooms and functional restrictions imposed by highly specialised operating rooms, such as fixed equipment.

Under this definition, a Procedure room includes a Catheter Lab, Endoscopy procedure room etc.

The Standard Components provided in these Guidelines include general and specialised operating rooms of a variety of sizes. The designers and operators should decide on the allocation of general vs specialised theatres.

In recent times there has been a trend for operators requesting increasingly large operating rooms. It should be noted that beyond the sizes recommended in these Guidelines, the technical functionality of the rooms may not increase but in fact it may become a serious challenge. Operating rooms require laminar flow (turbulent-free) air supply via terminal HEPA filters (absolute filters) directly over the operating table to envelope the patient. The minimum ceiling height of the operating room is 3000mm and there is a need for 20 air changes per hour. Air must be extracted at the low and high level at the 4 corners of the room, with part of the air exhausted and part recirculated back through the HEPA filters.

This means a very large volume of air with a specific flow to maintain the laminar flow. In extremely large operating rooms this may become very difficult to achieve or control. So, designers should not automatically assume that operating rooms larger than those provided in the Standard Components are necessarily better.

On the other hand, operating rooms which are too small create a crowded and chaotic environment which can result in errors. Small operating rooms are common in older facilities which remain operational. In future refurbishments of such facilities compliance with the minimum sizes recommended in these Guidelines would be appropriate. Minimum operating rooms sizes, suitable for most procedures including the use of general anaesthesia is 42m^2. Operating rooms used exclusively for minor operations/ procedures without the use of general anaesthesia may be as small as 36m^2, however, 42m^2 is recommended for greater flexibility. Minimum dimension shall be no less than 5m^2.

Most, if not all service connections accessed by surgeons and anaesthetists are suspended from the ceiling on double articulated arms and booms. The intention is to keep the operating room free of cables, tubes etc. Furthermore, with the current operating room sizes, there is a trend to install monitors on pendants rather than on walls, which may be close to 4 meters away from the surgeon. In short, in most modern operating rooms the walls are largely blank with few, if any service outlets or monitors installed.

Modular OR

Recent decades have seen the rise in the promotion and use of a type of operating theatre construction commonly referred to as “Modular OR”, or “Modular Theatre”. This is a different concept to modular buildings or modular prefabricated pods. It mostly refers to factory-made wall panels which may be constructed from pre-finished metal sheets, HPL panels or other robust material. The same is also offered for operating room ceilings. These are typically fixed to a steel framework and joined by gaskets. Other than these panels, the design of the operating room is similar to conventional practice and standards.

Under these Guidelines, there is no requirement or preference for this definition of Modular OR or Modular Theatre. If such construction complies with the requirements of these Guidelines (Parts B, C and D), they are most welcome and can be used. However, for maximum clarity, they are not considered mandatory or preferred to conventional operating theatre construction such as those indicated in the Standard Components of these Guidelines. The greatest concern is the use of gaskets for joining numerous individual panels. The conventional construction will utilise impact resistant gypsum sheets or equal, finished with scrubbable paint (such as epoxy paint) or fully

welded sheet vinyl or similar to achieve a monolithic finish without any joints. The same applies to ceilings where a monolithic gypsum or similar flush-set sheeting with scrubbable paint finish would be most preferred. If service access to the ceiling is required, it should be provided via hermetically sealed proprietary access hatches.

Endoscopy Unit

Refer to separate FPU - Endoscopy Unit for requirements.

Dental Surgery

A conventional outpatient dental practice is commonly referred to as Dental Surgery. But this is not the subject of this FPU.

For outpatient dental treatment, please refer to the separate Dental Surgery FPU within these Guidelines. This section refers to complex dental surgery which is performed in an operating room rather than in a dental treatment room.

In an operating room intended for Dental Surgery, in addition to the standard operating room equipment and services, items considered essential for dental procedures are as follows:

- One compressed dental air outlet situated close to the service panels for medical gases, suction and electrical outlets, with the provision of a regulated bottle of appropriate compressed air as emergency backup or secondary use
- Facilities for dental X-ray.

Scrub Bay

Scrub facilities shall be located adjacent to the Operating Rooms. Scrub Bays require sufficient enclosure to ensure the mechanical ventilation system can extract the air and create a relative negative pressure. This is to contain the floating micro-droplets of water and minimise the spread of contaminants potentially floating in the air.

Scrub bays do not require a door to the corridor and can be arranged in a semi-enclosed bay. However, there must be a door access to the operating room. Scrub bays created directly inside the operating rooms are strictly prohibited. Open scrub troughs along the main operating theatre corridors are not considered desirable. In the case of dedicated Endoscopy Rooms, an additional hand wash facility may be provided inside the room.

The door from the scrub bay to the operating room may be dedicated and direct. It should incorporate features so that opening the door in either direction does not require touching the door or door handle. Alternatively, surgeons and nurses can use the main doors to the operating room as long as electric doors are provided with knee, elbow, gesture or similar activation pads.

Direct doors from scrub rooms to the operating rooms should ideally be light doors, opening both ways by light pressure either with the elbow or the hip. This allows the surgeons and nurses to enter the operating rooms backwards without touching the door or door handle.

Optionally, a window may be provided between the scrub bay and the operating room. This allows the surgeons to observe the way the room is being set up for the next case.

Recovery Stage 1

Following surgery patients are recovered in the Stage 1 Recovery (also known as PACU). Patients in Stage 1 recovery are under general anaesthesia. They can be moved out once they awake and are assessed by the clinical staff to be in a fit state to be transferred to the next stage of recovery. It should be noted that eventually almost all patients will awake in the Stage 1 Recovery and some may ask to use a toilet. Therefore, it is essential to provide toilets in Stage 1 Recovery (as well as Stages 2) for patients who are able to use them.

The required ratio of beds in Stage 1 Recovery is 2:1 per General Operating/ Procedure room and 1.5:1 per Day Surgery Operating/Procedure room. If the same operating rooms are used for both Inpatient Surgery and Day Surgery, then the higher ratio of 2:1 should be used.

Recovery Stage 1 is regarded as part of the surgical zone. Only staff who have changed in the pass-through change rooms can enter the Recovery Stage 1.

Recovery Stage 1 applies to patients who undergo general anaesthesia. Day Surgery patients who may have an operation under local anaesthesia or may come out of the operating room already awake, may be transferred directly to the Recovery Stage 2, by-passing Recovery Stage 1.

The staff working in Recovery Stage 1 will be under the same dress code as the operating theatres as this area is regarded as part of the surgical zone.

Recovery Stage 2

Day Surgery patients, after they awake from general anaesthesia will progress from Recovery Stage 1 to Recovery Stage 2. Alternatively, they, may be taken directly to Recovery Stage 2 following some procedures requiring minimal sedation or local anaesthetics. In Recovery Stage 2 patients will have regained consciousness following a procedure but still require observation and management. They will be conscious but may prefer to sleep, eat, drink or read.

Recovery Stage 2 may be provided as bed bays or recliner bays or a combination of both. The beds or recliners may be in curtain cubicles or in private rooms with glass or curtain front. The recommended minimum ratio of beds/ recliners in Recovery Stage 2 is 2 per Operating/ Procedure room. However, a higher ratio of 3 per Operating/ Procedure room is recommended as it allows for a rapid turnover for procedures that take 15 minutes or less.

Based on the operational policy of each facility, Recovery Stage 2 may be regarded as an internal part of the Operating Unit (and part of the surgical zone). Under this policy, nurses and doctors will be under the operating theatre dress code and those who have changed in the pass-through staff change rooms may enter and work in this area. Under this policy, patients may not change back to street clothes within this area.

Alternatively, Recovery Stage 2 may be regarded in the same manner as a temporary Inpatient Unit (or Day Ward) and regarded as outside the surgical zone. Staff working in this area may have the same dress code as an Inpatient Unit and may not enter the surgical zone. Under this policy, patients may be allowed to change back to street clothes as they wait for discharge.

If Recovery Stage 2 is regarded as the equivalent of a temporary Inpatient Unit (or Day Ward), it may be located adjacent Stage 1 Recovery for convenient patient movement. Alternatively, it may be placed remotely from Stage 1 Recovery in a suitable location within the facility linked by a restricted travel corridor.

In the 23 hour surgery model, Recovery Stage 2 can be re-purposed for overnight stay of patients. The enhancements required include additional privacy, access to toilets, showers and overnight nursing care.

Recovery Stage 3 (or Discharge Lounge)

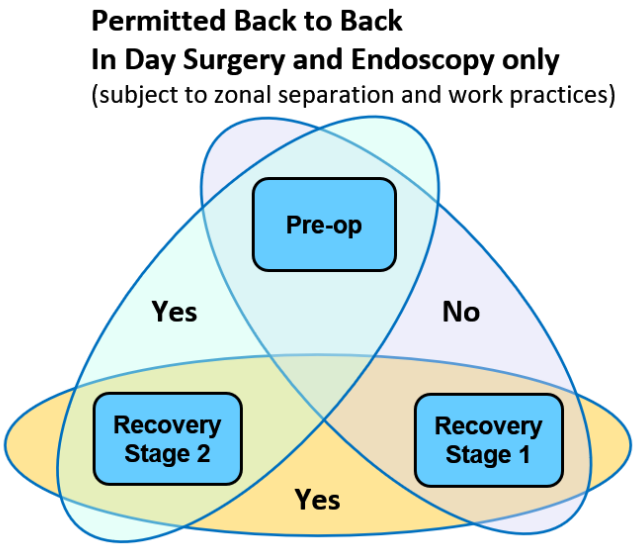
Recovery Stage 3 is an optional lounge area, where patients have already recovered and dressed in street clothes, awaiting collection by relatives, friends or the facility's transportation service.

Patients in Recovery Stage 3 (or Discharge Lounge) will be in comfortable recliners or lounge chairs. The recommended ratio of chairs in Recovery Stage 3 is 3 per Operating/ Procedure room.

Recovery Stage 3 is not considered as part of the surgical zone and therefore the staff and patients are not subject to the dress code of the surgical zone. Recovery Stage 3 can be located remote from the Day Surgery Unit. For example, it may be a lounge off the main entrance and closer to the vehicle pickup area. If a remote location is chosen, then the necessary provisions for the patients such as toilets and a staff station should be provided separately.

Back-to-Back Recovery Areas

Recovery Areas which are used for Day Surgery patients including Endoscopy and Catheter Lab (but not Inpatient Surgery or DOSA or 23 hour surgery) may be co-located back-to-back for greater operational efficiency. The diagram below indicates the type of back-to-back recovery areas which are allowed (or not). When the recovery areas are co-located, a reasonable zonal separation is required between those who are un-conscious and those who are conscious but without physical separation. This can be managed operationally.



Flash Sterilising Facilities

A limited number of Flash Sterilisers may be located in the unit. However, the use of this method of sterilising should be restricted to situations where a single instrument has been dropped in mid-operation and there is no sterile duplicate available. Flash sterilising is not suitable for processing of cannulated, complex instruments, suction and other tubing, textiles, paper or liquids. The utilisation of a Flash Steriliser should be carefully considered and applied according to the Operational Policies of the facilities. Permission to use Flash Sterilisers should be checked with the Health Authority before installation and use. Some Health Authorities permit only a limited number of Flash Sterilisers as their regular use may be regarded as an operational risk.

Storage

Adequate Store room/s for equipment and supplies used in the Day Surgery Unit shall be provided including sterile stock, consumables, anaesthetic supplies, drugs and equipment such as operating table accessories, mobile microscopes and other mobile equipment. Sterile stock storage should be provided at the minimum rate of 10 to 12 m^2 per Operating Room. Equipment storage should be provided at a rate of 10 to 11 m^2 per Operating Room.

Note:

- Equipment Store Rooms do not necessarily require doors.
- Store Rooms are best designed in an elongated rectangular shape to allow easy front access to all items.
- The design of the Unit should allow for ease of access to the storage areas for delivery of consumables..

Mobile Equipment Bays shall be provided for equipment such as portable X-ray equipment, stretchers, patient transportation trolleys, warming devices, and other mobile equipment. Mobile Equipment Bays shall comply with Standard Components and distributed for easy access. Equipment Bays are best designed as elongated rectangular shapes and may be combined for space efficiency.

Non-sterile store is a special use storage facility intended for receiving manufactured, pre-sterile items and consumables such as catheters, sutures, single use linen, masks, gloves etc.

These items arrive in boxes which are not regarded as clean (and therefore the name Non-sterile store). The contents are removed and transferred to the appropriate store room within the Operating Unit. The boxes are discarded outside the unit without entering into the unit. Therefore the Non-sterile store will have a door to the outside and a door to the inside of the unit. Those delivering the boxes of goods may not enter the Operating Unit except just inside the entrance to the Non-sterile store.

Administration

Offices and workstations will be required for senior staff managing the various zones of the unit to undertake administrative functions, or to facilitate educational and research activities. Offices and workstations may be located within a discreet zone remote from the surgery areas.

If the offices are located within the surgical zone of the Day Surgery Unit, all staff using these facilities will be subject to the surgical dress code and must already be changed into the theatre gowns in the main pass-through change rooms.

If the offices are located outside the surgical zone, the staff may not freely enter the surgical zone unless they change in the main pass-through change rooms.

Staff Change Rooms

Separate Male and Female Change Rooms shall be provided for nurses, doctors and technicians working within the Day Surgery Unit. The change rooms serving the surgical zone should be in the pass-through style with a separate entrance from outside the Unit and exit directly into the Unit.

The Unit interior zone after these pass-through change rooms is referred to as the surgical zone (or clean zone) and staff will be free to move to their designated workplace including the Operating Rooms, Sterile Stock store and Recovery Stage 1.

The Change Rooms should contain adequate lockers, showers, toilets (but not urinals), handbasins and space for donning surgical attire and booting.

In highly restricted buildings and refurbishment of old buildings where a pass-through design may not be possible a single entry/exit point for each change room may be provided. However, access to the Change room should be via an air lock or corridor with one door to the outside and one door to the inside of the Operating Unit. Therefore, the pass-through is achieved via the air lock or corridor rather than the change room.

Another alternative is to place the entrance to the Change Rooms just inside the main entrance to the Day Surgery, before the Reception. This will put the staff entrance under the observation of the Reception area, which may be regarded as a security feature preventing un-authorized persons from following doctors and nurses into the Change Rooms.

Notes:

- It is desirable but not mandatory to increase the number of change room facilities for female change rooms by approximately 30%.
- The use of urinals in existing facilities are permitted, however for new facilities they are discouraged.
- Warm air hand dryers shall be avoided.
- Lockers may be full height, half lockers or quarter lockers.
- Space should be set aside for used gown bins, shelves for new gowns and racks for boots.
- Staff Change rooms may not be shared with Patient Change rooms.

5 Functional Relationships

A Functional Relationship can be defined as the correlation between various areas of activity whose services work together closely to promote the safe delivery of services that are efficient in terms of management, cost and human resources.

External Relationships

The Day Surgery/ Procedure Unit will have functional relationships with the following units:

- Pre- Admission Clinic (part of Outpatient Clinics)
- Main Entrance Unit
- Laboratory Unit
- Endoscopy Unit (if present)
- Cath Lab (if present)
- Inpatient Unit (if used as part of a DOSA operational model)
- Clinical Records Unit
- Administration Unit
- Sterile Supply Unit (SSU) or TSSU

Internal Relationships

Internally, the Operating Unit will be arranged in functional zones. The entrance to the unit will provide access control at the Reception and all other access points such as Change Rooms, Non-sterile store, disposal room etc.

For internal relationships refer to the Functional Relationship Diagrams below.

Functional Relationship Diagrams

The relationships between the various components within a Day Surgery Unit are best described by functional relationships diagrams. The requirements for infection control and patient management result in a number of planning 'models' that have proved successful through numerous built examples and many years of practice. Most plans are a variation of one of these 'models'.

A plan substantially based on one of the diagrams and permutations provided within this FPU is 'deemed to satisfy' the requirements of these Guidelines. A plan that is significantly different to these diagrams and permutations should be carefully examined against all the individual requirements of these Guidelines, to determine if it is acceptable. It should be noted that some older practices from decades past are no longer regarded as appropriate and should not be automatically followed.

In reviewing and using the enclosed Day Surgery Unit flow diagrams, designers should carefully consider a number of issues:

- Each flow diagram represents a method of managing the patient and staff access, clean/dirty activities, air pressurization etc.
- The diagrams are different but each one addresses the issues involved in a satisfactory manner. All options shown are regarded as acceptable.
- Each option may suit a different management mode or building configuration or structural grid. Some options are more suitable for a regular structural grid than others.
- Designers are strongly cautioned against creating hybrid options by combining features of various permutations of the diagrams provided. This may result in wrong clean/ dirty flows or other unacceptable features. If in doubt, designers should seek advice from specialist Operating Room consultants and Infection Control nurses to interpret the requirements of this FPU.

The functional relationship diagrams below show a base linear configuration. This model can be stretched to create the number of Operating Rooms desired. The support facilities required also grow with the number of Operating Rooms.

Each module includes the configuration of:

- Operating Rooms
- Optional Anaesthetic Induction Rooms
- Scrub Rooms
- Sterile Stock Store / Set-up Room
- Clean-up Room
- Optional Flash Sterilising Bay

The optimal internal relationships are demonstrated in the diagrams below:

- Arrows indicate the direction of flow
- Adjacencies of rooms indicate the desired relationships
- Separate entrances to the Unit for staff, services and patients
- Control of access for all persons and patients entering
- Staff Station located for best observation

Stand-alone Day Surgery Unit Functional Relations

It should be noted that the diagrams below indicate an integrated surgery unit which reflects a Day Surgery Unity back to back with an Operating Unit. If the Day Surgery Unit is totally stand-alone without a hospital based Operating Unit, the only reduction in the requirements is the Inpatient entrance, reception and holding bays. All other requirements will apply.

Also note that the Blue dotted lines and arrows refer to external relationships where the unit is located on a hospital campus as a stand-alone or integrated unit. These are not required when the Day Surgery unit is stand-alone and independent of a hospital.

Day Surgery Unit Single Corridor Model

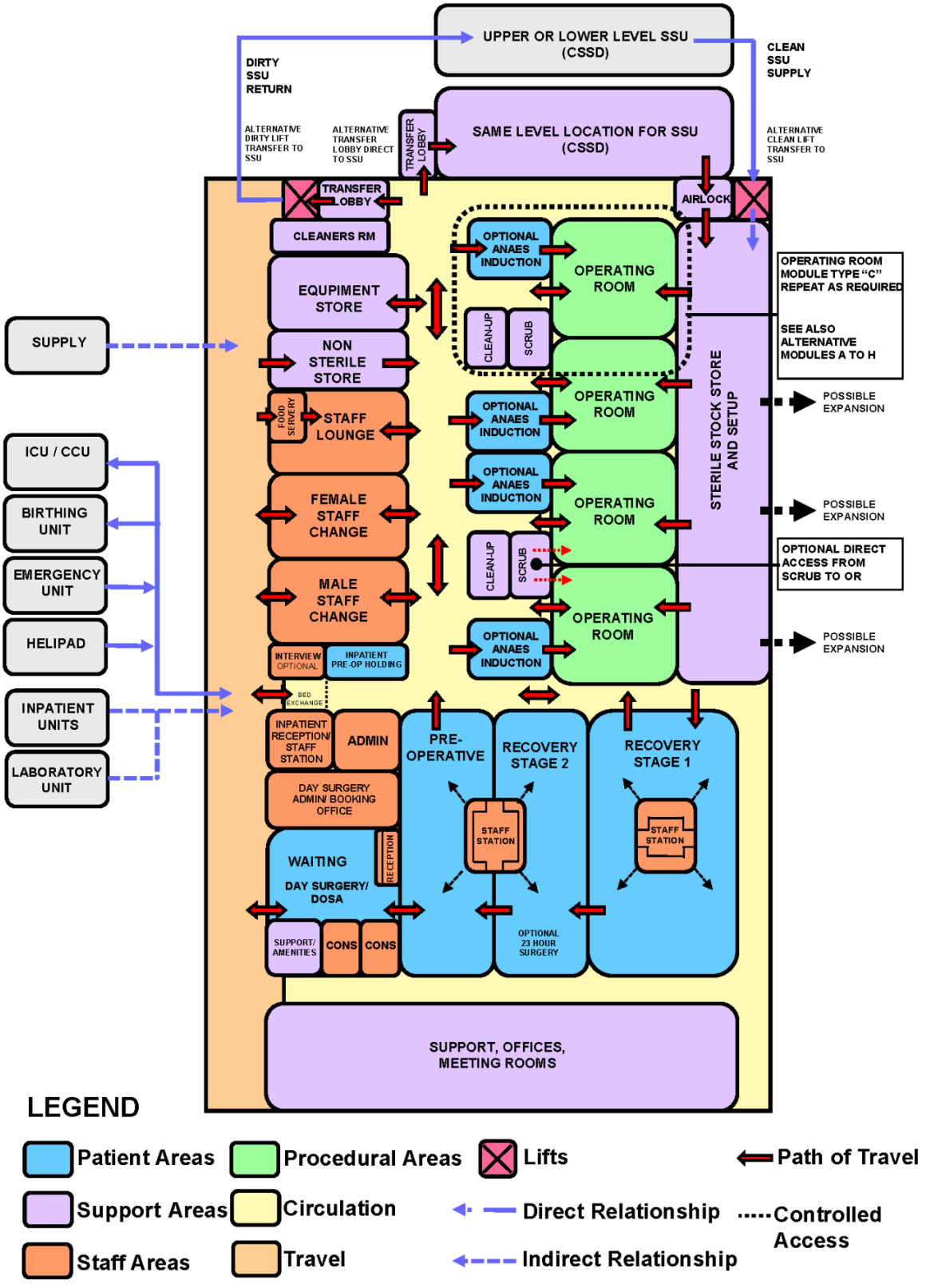


Figure 5 Functional Relationship Diagram: Operating Unit – Single Corridor Model

Day Surgery Unit Racetrack (or Dual Corridor) Model

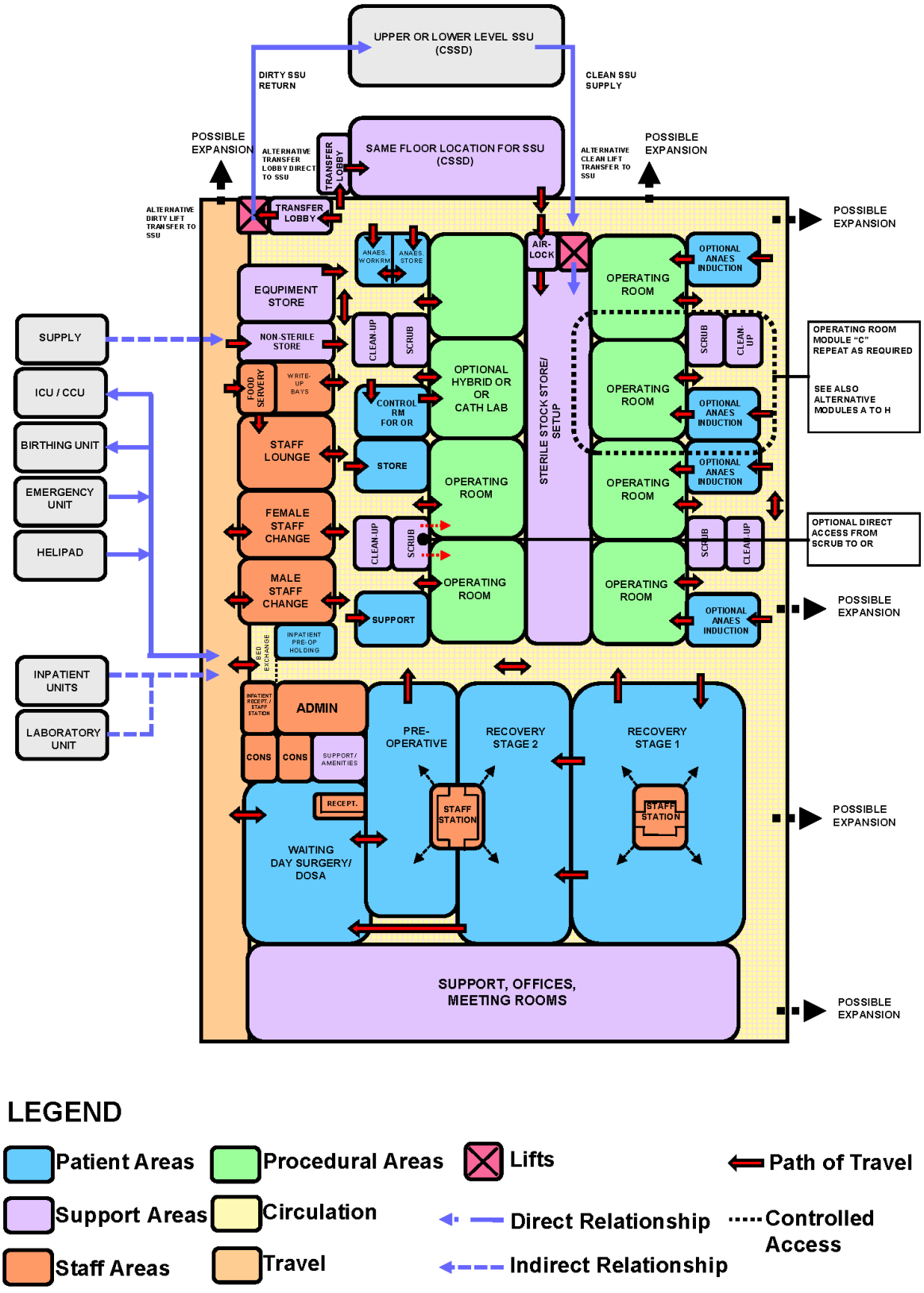
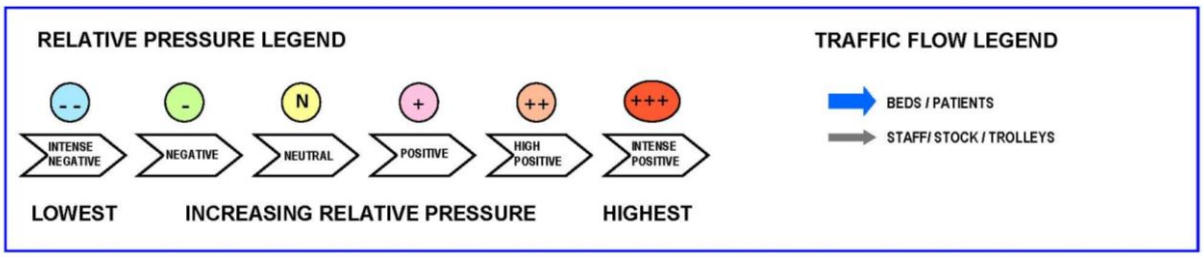


Figure 6 Functional Relationship Diagram: Operating Unit – Dual Corridor Model

Operating Room Modules and Air Pressurisation Diagrams

The zone marked as Operating Room Modules in the above diagrams can have multiple permutations shown in this section. These permutations defined the relationship between the most important rooms serving the Operating Room. The Module Options A to E show the required relationships between the rooms and the relative air pressurisation required. Each module represents ideal relationships and maintains the correct and acceptable flows.

Air pressurisation and traffic flows have been graded from the lowest pressure to the highest pressure according to the legend below. The common corridors linking the various rooms inside the surgery zone are regarded as having Neutral Pressure designated as (N). Pressurisation less than N are designated as (-) and (- -). Pressurisation more than (N) are designated as (+) or (++).



Modules A to H

Modules A to H are shown overleaf. It should be noted that Module C is shown by default in the main Functional Relationship Diagrams for Single Corridor and Racetrack (Dual Corridor) options above. This is due to the relative popularity of Module C.

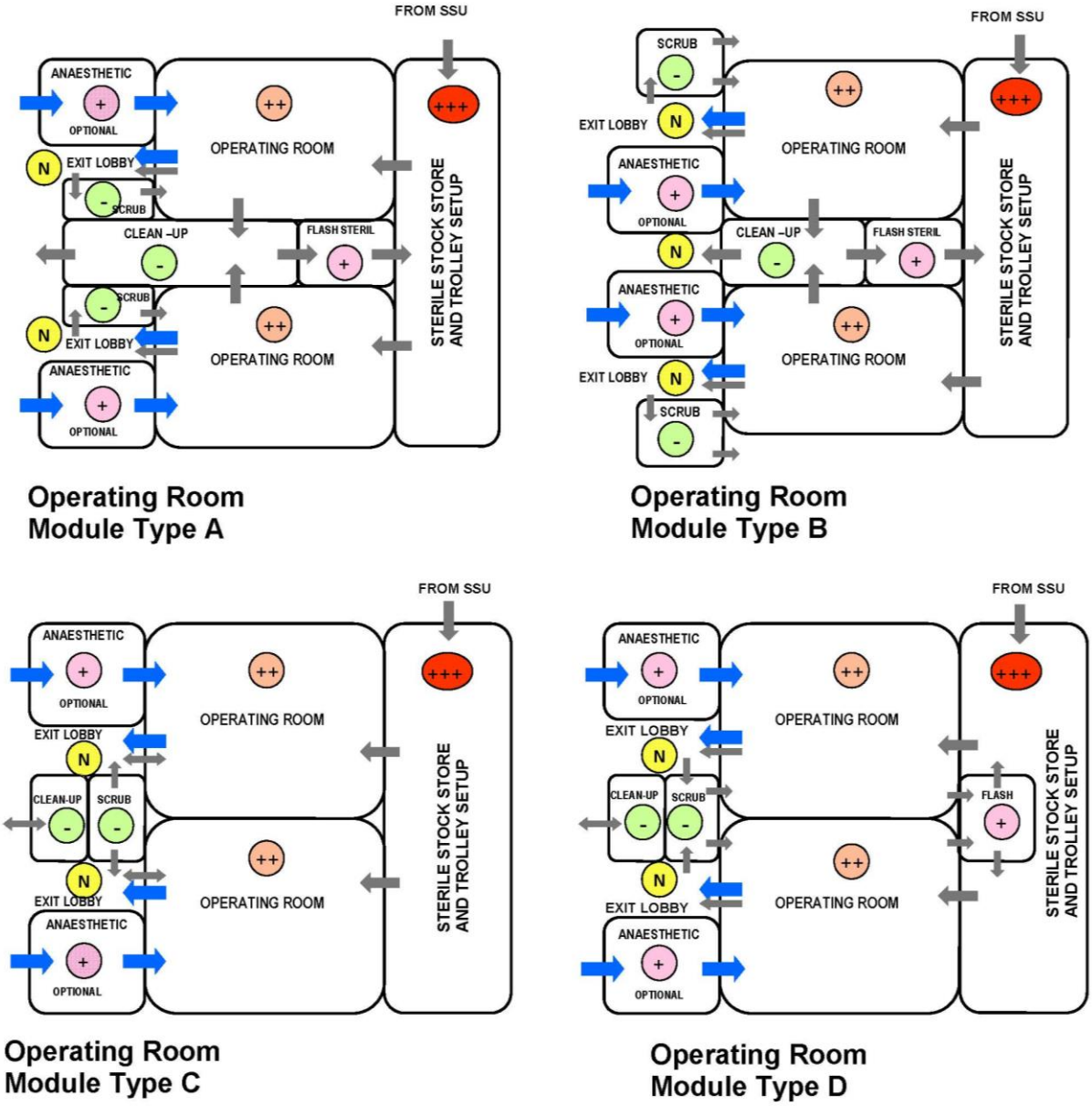


Figure 7 Air Pressurisation Diagrams: Operating Theatres – Modules A to D

Module Types E to H

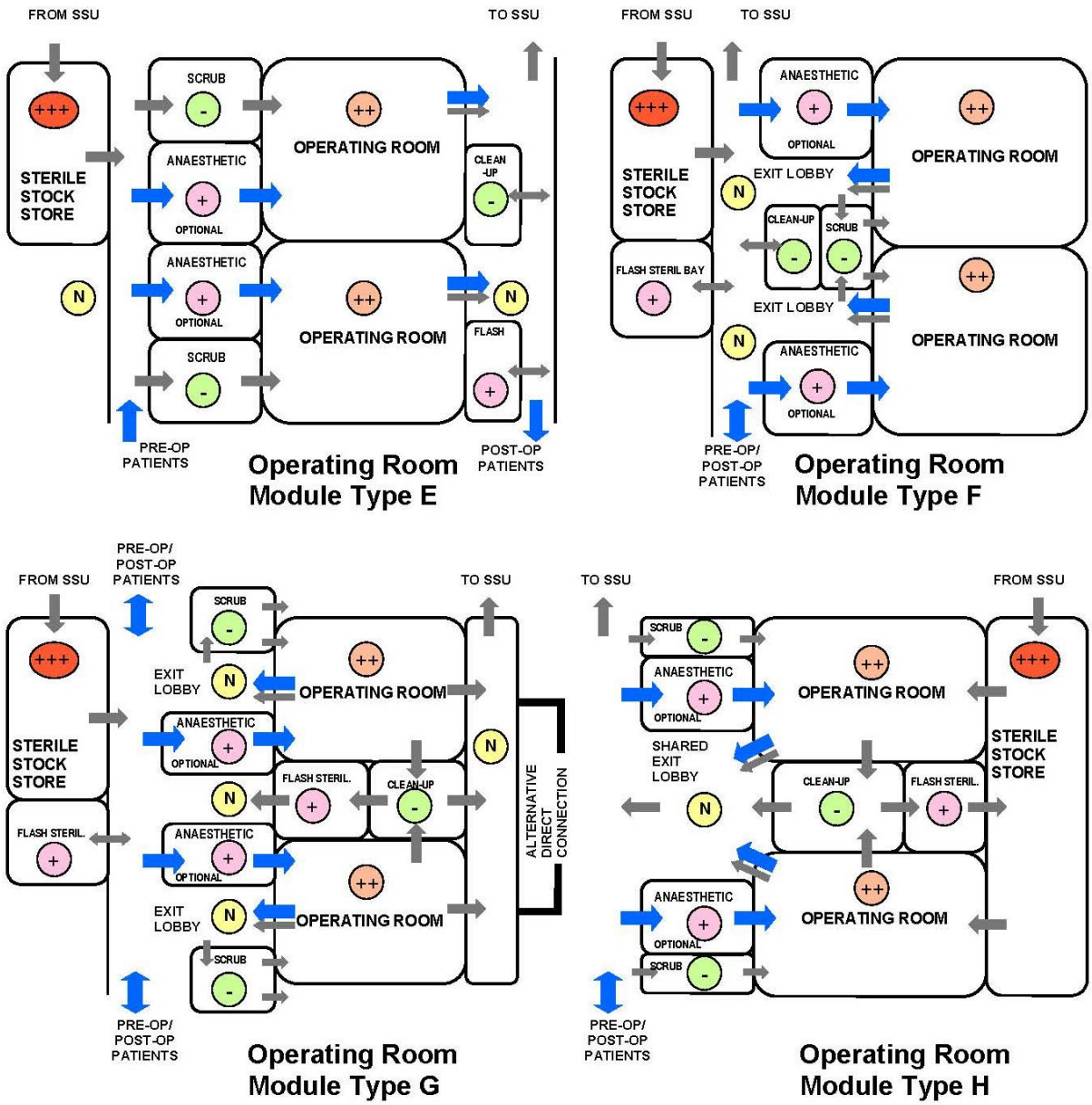


Figure 8 Air Pressurisation Diagrams: Operating Theatres – Modules E to H

6 Design Considerations

Patient Treatment Areas

The Day Surgery/ Procedure Unit should be designed to accommodate all types of patients using the Unit as determined by the operator's clinical service plan. This may include paediatric, bariatric or disabled patients.

The design should also be able to accommodate changes in equipment technology as well as changing workload and variability to throughputs. Use of modular components and standard rooms sizes are recommended to provide flexibility of design.

Environmental Considerations

Acoustics

Design should consider reduction of the ambient noise level within the unit, particularly waiting areas.

Acoustic privacy treatment will be required to:

- Consulting / interview rooms
- Preparation rooms where patient pre-treatments may be undertaken
- Operating/ Procedure Rooms

The transfer of sound between clinical spaces should be minimized to reduce the potential of staff error from disruptions and miscommunication and to increase patient safety and privacy. Noisy areas such as Staff rooms should be located away from procedural areas.

It should be noted that it is common to have sound systems to provide piped music in operating rooms. Therefore, the acoustic design should take this into consideration.

Natural Light

The need for an external view from the Operating Room is an important consideration. Provision of windows need to consider the following:

- Fixed windows to operating rooms are welcome and desirable when possible. However windows are not mandatory.
- Vision from the Operating Room could be through a corridor, set up area or directly to the external environment.
- All windows will require a screening device for light control, including full blackout. However, such devices may not be inside the operating room. They can only be within double glazing or outside the operating room.
- There are heating, cooling, and shading implications for windows in the Unit located on the outside of the building that may have an impact on the design of the mechanical systems inside the operating room.
- Viewing windows from a corridor to the Operating Room can be useful for supervision and training purposes. However, increasingly these are replaced with multiple cameras which provide a better view, un-obstructed by the surgeons and nurses.
- Windows to Recovery areas, Staff Lounge and TSSU or SSU are not mandatory but highly desirable.

Privacy

The design of the patient areas within the Day Surgery Unit needs to consider the contradictory requirement for staff visibility of patients while maintaining patient privacy.

Unit design and location of staff stations will offer varying degrees of visibility and privacy. The expected patient acuity, age, gender, and level of dependency should be considered.

Each bed bay or recliner bay in pre-op and post-op areas shall be provided with bed screens (curtains) or solid walls to ensure privacy of patients when needed. Refer to the Standard Components Room Data Sheets and Room Layout Sheets for examples.

The following features shall be integrated to the design of the Unit:

- Doors and windows to be located appropriately to ensure patient privacy and not comprise staff security.
- Discreet spaces to enable confidentiality of discussions related to a patient and storage of patient’s medical records.
- Consultation and Interview rooms should not be directly visible from the public or waiting areas

Space Standards and Components

Accessibility

In a stand-alone Day Surgery facility or for a Unit located within a hospital but with its own direct entry, a weatherproof vehicle drop-off area for patients with limited mobility or wheelchair-bound should be provided.

Patient areas within the Unit must provide sufficient clearance for wheelchair-bound patients and comply with the local accessibility requirements. Reception counters and Staff Station counters are to include a low section suitable for wheelchair users.

Doors

All entry points, doors or openings requiring bed/trolley access including Operating Rooms are recommended to be a minimum of 1400 mm wide, unobstructed. Larger openings may be required for special equipment, as determined by the Operational Policy, to allow the maneuvering of equipment without manual handling risks and risk of damage.

For individual door clearances please also refer to the relevant Room Layout Sheets.

Also refer to Part C – Access, Mobility, OH&S of these Guidelines.

Ergonomics/ OH&S

Design of clinical spaces including Operating and Procedure rooms must consider Ergonomics and OH&S issues for patient and staff safety and welfare.

Refer to Part C – Access, Mobility, OH&S of these Guidelines for more information.

Size of the Unit

The size of the Day Surgery Unit (number of operating rooms) will be determined by the Clinical Services Plan establishing the intended services scope and complexity. Nothing in this FPU or within the iHFG dictates the minimum or maximum number of operating rooms required.

Typical Schedules of Accommodation have been provided for typical units at role delineation levels 2 (less complex services) to 6 (teaching/ research facilities).

Curtains and Blinds

Windows that require screening within the entire Unit shall be double glazed with internal blinds. Surface mounted blinds or window curtains are not permitted in Day Surgery/ Procedure Unit due to difficulty in cleaning and maintaining a dust free environment.

Privacy bed screens must be provided to each bed bay in Holding and Recovery areas. Privacy bed screens must be washable, fireproof and cleanly maintained at all times. Disposable bed screens may also be considered.

Drug Storage

The storage for controlled or dangerous drugs is commonly regulated by a local Authority. In addition to this, each facility will have its own operational and drug storage policy.

A lockable refrigerator or a refrigerator located within a lockable room is required to store restricted substances.

Safety and Security

The Day Surgery/ Procedure Unit shall provide a safe and secure environment for patients, staff and visitors, while maintaining a non-threatening and supportive atmosphere conducive to recovery.

Internal spaces and zones should offer a high standard of security through grouping functions, controlling access and egress from the Unit and providing optimum observation for staff. Patient holding, procedural and recovery areas will require restricted and controlled access to prevent unauthorised entry by visitors or others.

Finishes

The aesthetics of the entrance, reception, waiting and office areas within the Unit should be warm, relaxing and non-clinical as far as possible.

In all areas other than the entrance, reception and waiting, the finishes including fabrics, floor, wall and ceiling finishes, should be appropriate to the highly clinical nature of this unit including the following considerations:

- Easy of cleaning
- Infection control
- Durability

- Fire safety
- Movement of equipment floor finishes should be resistant to marring and shearing by wheeled equipment.

Day Surgery/ Procedure Units clinical areas shall have the following finishes:

- Floors should be smooth, monolithic, slip resistant, impervious and washable. In wet areas, the floor material should be graded to fall to the floor waste. Ideally the floor finish should be coved against the wall up to a height not less than 125 for easy cleaning.
- In areas such as scrub and operating room, where staining chemicals such as iodine may be used, the floor material should resist staining and be easy to clean.
- Wall finishes should be smooth, monolithic, impervious and washable.
- For wall finishes, seamless material will be preferred such as scrubbable paint (epoxy paint) welded sheet vinyl, PCV, welded resinate and similar.
- Panelised wall systems (referred to as Modular Theatres) may be used subject to highly reliable gasket systems which require no maintenance and are impervious to air and liquids. Modular Theatres or metal panels in general are not mandatory.
- Ceiling finishes to the operating rooms and recovery areas should be smooth, monolithic, impervious and washable. Tiled ceilings or any panelised ceiling system with joints are not desirable.

Refer to Part C – Access, Mobility and OH&S of these Guidelines for further details.

Fixtures, Fittings and Equipment

Equipment, furniture, fittings and the facility itself shall be designed and constructed to be safe, robust and meet the needs of a range of users. All furniture, fittings and equipment selections for the Operating Unit should be made with consideration to ergonomic and Occupational Health and Safety (OH& S) aspects. Particular consideration should be given to compactus units for sterile items, storage and movement of loan equipment and shelving for storage of heavy items.

Refer to Part C of these Guidelines, the Room Layout Sheets (RLS) and Room Data Sheets (RDS) for more information.

Building Services Requirements

Information Technology (IT) and Communications

The Day Surgery/ Procedure Unit will require special consideration of the following IT/ Communication system:

- Electronic Health Records (EHR) which may form part of the Health Information System (HIS), incorporating Patient Administration System (PAS)
- Hand-held tablets and other smart devices
- Picture archiving communications systems (PACS) and location of monitors
- Paging and personal telephones replacing some aspects of call systems.
- Voice and data cabling for telephones and computers/ DECT
- Bar coding systems for supplies, x-rays and records
- Wireless network requirements
- Videoconferencing requirements for meeting rooms
- Digital operating room requirements particularly linkages to seminar and education facilities for teaching purposes
- Communications rooms and server requirements
- Scheduling systems to manage Procedure or operating room sessions.
- Management and statistical information required for administration and quality assurance.

Heating, Ventilation and Air conditioning (HVAC)

The Operating Rooms will require special air-conditioning with positive pressure, HEPA filtration. Temperature, humidity and air changes per hour are to comply with relevant standards and guidelines established in these guidelines as well as other standards and guidelines referenced. Individual Operating Room temperatures should be controllable by staff from within the room.

Refer to Part E – Engineering Services in these Guidelines for specific details.

Hydraulics

Warm water supplied to all areas accessed by patients within the Unit must not exceed 43 degrees Celsius. This requirement includes all staff handwash basins and sinks located within patient accessible areas.

Medical Gases

The Day Surgery Unit shall provide medical gases and quantities of outlets identified in Standard Components Room Data Sheets and Room Layout Sheets to Operating/ Procedures rooms and Post-op bed bays.

Medical Gases must be dedicated to each patient. Gas outlets may not be shared between two patients in bed/chair bays.

Radiation Shielding and Radiation Safety

All Operating Rooms require radiation shielding. A certified physicist or qualified expert will need to assess the plans and specifications for radiation protection as required by the relevant local radiation/nuclear safety authorities. A radiation protection assessment will specify the type, location and amount of radiation protection required for an area according to the equipment types, the layout of the space and the relationship between the space and other occupied areas. It should be noted that the x-ray equipment may change over time. So, the shielding provision should take this into consideration and make a general provision for the present and the future.

Incorporate all radiation protection requirements into the final specifications and building plans and re-evaluate radiation protection if the intended use of a room changes, equipment is substantially upgraded, or surrounding room occupancy is altered. Consideration should be given to the provision of floor and ceiling shielding when rooms immediately above and below are occupied.

Staff Call

Patient, Staff Assist and Emergency Call facilities must be provided in all patient areas (e.g., Anaesthetic Induction Room, Holding bays, Recovery bay, Lounges, Change Rooms and toilets) in order for patients and staff to request an urgent assistance.

The individual call buttons will alert to a central module situated at or adjacent to the Staff Station. Calls must be audible in Utilities, Staff Room and Meeting Rooms within the Unit. The alert to staff members should be done in a discreet manner at all times. Calls left unanswered should have be escalated by the system automatically. In modern facilities, individual hand-held devices may be used and carried by clinical staff.

Infection Control

Infection control issues are paramount in the Day Surgery Unit and require careful attention to planning models and separation of clean and dirty workflows.

The need for Isolation rooms (Positive and Negative Pressure) in Holding and Recovery areas is to be evaluated by an infection control risk assessment and will reflect the requirements of the Service Plan. As a minimum, the provision of Negative Pressure isolation room including ante-room within the Recovery areas is required.

By default, Operating Rooms will require Positive Pressure. The need for Negative Pressure Operating Rooms shall be determined by the Service Plan and Operational Policy of the Unit. Such a provision must be restricted to certain patient types.

Hand Wash Basins

Clinical hand-washing facilities shall be provided within all patient holding and recovery areas and convenient to the Staff Stations. The ratio of provision shall be a minimum of one clinical hand-washing facility for every four patient bays in open-plan areas.

Refer to Part D – Infection Control of these Guidelines for the requirements of hand wash basins.

Antiseptic Hand Rubs

Antiseptic hand rubs should be located so they are readily available for use at points of care, at the end of patient beds and in high traffic areas. The placement of antiseptic hand rubs should be consistent and reliable throughout facilities. Antiseptic hand rubs are to comply with Part D – Infection Control, in these guidelines.

Antiseptic Hand Rubs, although very useful and welcome, cannot fully replace Hand Wash Bays. Both are required.

Refer to Part D – Infection Control of these Guidelines for further information.

7 Components of the Unit

Standard Components

Standard Components are typical rooms within a health facility, each represented by a Room Data Sheet (RDS) and Room Layout Sheet (RLS). Sometimes, there are more than one configuration possible and therefore, more than one room layout sheet can be found in the Standard Components for a room with same function. They may differ in room size and/or the requirement of FF&FE items.

The Room Data Sheets are written descriptions representing the minimum briefing requirements of each room type, described under the following categories:

- Primary Room Information - includes Briefed Areas, Occupancy, Room Description, relationships and special room requirements.
- Building Fabric and Finishes - required fabric and finishes for the room's ceiling, floor, walls, doors and glazing requirements.
- Furniture and Fittings - a list of fittings and furniture typically located in the rooms; furniture and fittings are identified with a group number indicating who is responsible for providing the item and/ or installation. Their definitions are shown below:

Group	Description
1	Provided and installed by the Builder/ Contractor
2	Provided by the Client and installed by the Builder/Contractor
3	Provided and installed by the Client

- Fixtures and Equipment - includes all the serviced equipment commonly located in the room along with the services required such as power, data, water supply and drainage; Fixtures and Equipment are also identified with a group number as above indicating who is responsible for provision.
- Building Services - indicates the requirement for communications, power, HVAC (Heating, Ventilation and Air Conditioning), medical gases, nurse/ emergency call and lighting along with quantities and types where appropriate. Provision of all services items listed is mandatory.

The Room Layout Sheets (RLS's) are indicative plan layouts and elevations illustrating an example of good design. The RLS indicated are deemed to satisfy these Guidelines. Alternative layouts and innovative planning shall be deemed to comply with these Guidelines provided by the following criteria are met:

- Compliance with the text of these Guidelines
- Minimum floor areas as shown in the schedule of accommodation
- Clearances and accessibility around various objects shown or implied
- Inclusion of all mandatory items identified in the RDS.

The Operating Unit will consist of Standard Components to comply with details described in these Guidelines. Each FPU should be designed in compliance with Standard Components - Room Data Sheets and Room Layout Sheets, nominated in the Schedules of Accommodation below.

Non-Standard Rooms

Non-standard rooms are those which have not yet been standardized within these guidelines. As such there are very few Non-standard rooms. These are identified in the SOA as NS and are separately covered below.

Exit Bay

The Exit Bay is an area adjacent to the Operating/ Procedure rooms which is designed to hold the patient bed/trolley during the procedure. The Exit Bed Bat should consider and include the following:

- 1 Exit Bay must be provided per Operating/ Procedure Room
- Adequate space to accommodate patient bed without encroaching on circulation corridor.
- Adequate power should be provided to recharge the bed and any equipment attached.

8 Schedule of Equipment (SOE)

The Schedule of Equipment (SOE) below lists the major equipment required for the key rooms in this FPU.

Room Name		
Operating Room - General, Room Code (or-gn-i)		
Air flowmeter	Infusion pump: single channel	Pump: suction/ aspirator, surgical
Anaesthesia unit: standard	Infusion pump: syringe	Stool: adjustable, OR
Cabinet: storage, instrument, OR	Integration system: OR	Suction adapter
Control panel: surgical	Light: surgical, ceiling, with monitor arms & camera	Supply unit: ceiling, anaesthesia
Defibrillator: with monitor	Medication dispensing system: automated, anaesthesia	Supply unit: ceiling
Endoscopy tower: laparoscopy	Monitor: physiologic, operating theatre/ cardiac	Tracking system: instrument tray
Headlight: surgical	Operating table: electric, general	Warming cabinet: 500L
Hypo-hyperthermia unit: general	Oxygen flowmeter	
Infusion pump: rapid, blood/ solution warming	Pump: suction/ aspirator, portable	
Operating Room - Minor, Room Code (or-ms-i)		
Air flowmeter	Infusion pump: single channel	Sequential compression device
Anaesthesia unit: standard	Infusion pump: syringe	Stool: adjustable, OR
Cabinet: storage, instrument, OR	Light: surgical, ceiling, with monitor arms & camera	Suction adapter
Control panel: surgical	Monitor: physiologic, operating theatre/ cardiac	Supply unit: ceiling
Defibrillator: with monitor	Operating table: electric, general	Warming blanket unit: patient
Endoscopy tower: laparoscopy	Oxygen flowmeter	Warming cabinet
Headlight: surgical	Pump: suction/ aspirator, portable	
Infusion pump: rapid, blood/ solution warming	Pump: suction/ aspirator, surgical	
Patient Bay-Recovery Stage 1, Room Code (pbtr-rs1-12-i similar)		
Air flowmeter	Light: procedure	Stretcher: procedure/ recovery
Infusion pump: single channel	Monitor: physiologic, critical care	Suction adapter
Infusion pump: syringe	Oxygen flowmeter	

9 Schedule of Accommodation

The Schedule of Accommodation (SOA) provided below represents generic requirements for this Unit. It identifies the rooms required along with the room quantities and the recommended room areas. The sum of the room areas is shown as the Sub Total as the Net Area. The total area comprises of the sub-total areas of these rooms plus an additional percentage of the sub-total applied as the circulation (corridors within the Unit). Circulation is represented as a percentage is the minimum recommended target area. Any external areas and optional rooms/ spaces are not included in the total areas in the SOA.

Within the SOA, room sizes are indicated for typical units and are organized into functional zones. Not all rooms identified are mandatory, therefore, some rooms are found as optional in the corresponding Remarks. These Guidelines do not dictate the size of the facilities and the SOA provided represents a limited sample based on assumed unit sizes. The actual size of the facilities is determined by the Service Planning or Feasibility Studies. Quantities of rooms need to be proportionally adjusted to suit the desired unit size and service needs.

The Schedule of Accommodations are developed for particular levels of services known as Role Delineation Level (RDL) and numbered from 1 to 6. The table below shows three alternative SOAs for 3 sizes, 2 OR's 4 OR's and 12 OR's. Due to the nature of a Day Surgery Centre, it may apply to all Role Delineation Levels (RDL's) from 2 to 6. RDL's. Role Delineation Levels 1, being Primary Care does not apply.

Any proposed deviations from the mandatory requirements, justified by innovative and alternative operational models may be proposed within the departure forms included in Part A of these guidelines for consideration by the health authority for approval.

For stand-alone facilities, designers may add any other FPU's required such as Main Entrance Unit, Medical Imaging Unit etc based on the business model.

Note: For Dedicated Endoscopy units SOA refer to Endoscopy FPU provided in these Guidelines.

The following should be considered in conjunction with the SOA/s provided below:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the Standard Components.
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation and/ or capacity required for the clinical service.
- Exact requirements for room quantities and sizes reflect Key Planning Units (KPU) identified in the Service Plan and the Operational Policies of the Unit.
- All areas shown in the SOA follow the No-Gap system described elsewhere in these Guidelines. Refer to Part B Preliminaries.
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit.
- 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.
- Offices to be provided according to the number of approved full-time positions within the Unit.

Stand-alone Day Surgery/ Procedures Unit

Room / Space	Standard Component Room Codes	RDL 2-6 Qty x m2 2 Rooms			RDL 2-6 Qty x m2 4 Rooms			RDL 2-6 Qty x m2 12 Rooms			Remarks
Entry/ Reception											
Reception/ Clerical	recl-10-i similar recl-15-i	1	x	12	1	x	15	1	x	15	2, 3 & 4 staff respectively
Waiting Male/Female	wait-30-i wait-50-i similar	1	x	30	1	x	30	1	x	60	
Store - Files	stfs-8-i stfs-10-i	1	x	8	1	x	10	1	x	10	Optional if electronic records in use
Store - Photocopy / Stationery	stps-8-i	1	x	8	1	x	8	1	x	8	Include secure paper/ recycling bin as required
Toilet - Accessible	wcac-i	1	x	6	1	x	6	1	x	6	Include baby change facilities as necessary; May share with common areas if close
Toilet - Public	wcpu-3-i	1	x	3	2	x	3	2	x	3	May share toilets in common areas if close
Consult/ Exam Room	cons-i	1	x	14	1	x	14	2	x	14	
Interview Room	intf-i similar	1	x	9	1	x	12	2	x	12	
Patient Holding/ Preparation											
Bay - Handwashing, Type B	bhws-b-i	1	x	1	1	x	1	3	x	1	
Bay - Linen	blin-i	1	x	2	1	x	2	1	x	2	
Change Cubicle - Accessible	chpt-d-i	2	x	4	4	x	4	8	x	4	Optional if holding bays provided, Male/ Female
Patient Bay - Holding	pbtr-h-10-i	2	x	10	4	x	10	12	x	10	1 per OR; may also be used for recovery
Property Bay	prop-2-i prop-3-i	1	x	2	1	x	3	2	x	3	Patient lockers
Staff Station	sstn-5-i sstn-14-i	1	x	5	1	x	14	1	x	14	
Toilet - Accessible	wcac-i	1	x	6	1	x	6	1	x	6	For Patient
Toilet - Patient	wcpt-i							1	x	4	
Shower - Patient	shpt-i	1	x	4	1	x	4	1	x	4	Optional
Waiting - Sub	wait-sub-i similar wait-10-i	2	x	5	2	x	7	2	x	10	Optional, Changed waiting space
Operating/ Procedure Area											

Room / Space	Standard Component Room Codes	RDL 2-6 Qty x m2 2 Rooms			RDL 2-6 Qty x m2 4 Rooms			RDL 2-6 Qty x m2 12 Rooms			Remarks
Operating Room - Minor	or-ms-i				2	x	36	6	x	36	For minor operations including general anaesthetic, 42m2 is recommended for greater flexibility
Procedure Room	proc-25-i				1	x	25	1	x	25	For local anaesthetic
Operating Room - General	or-gn-i	2	x	42	2	x	42	6	x	42	OR size dependent on clinical service provided
Anaesthetic Induction Room	anin-i	2	x	15	4	x	15	12	x	15	Optional, depending on operational policy
Scrub Bay	scrb-6-i	2	x	6	4	x	6	12	x	6	1 per OR
Exit Bay	NS	2	x	8	4	x	8	12	x	8	1 per OR; bed parking during procedures
Clean-up Room	clup-7-i	1	x	7	2	x	7	6	x	7	**Note 2**: 1 shared between 2 ORs
Store - Sterile Stock	stss-20-i sstn-40-i similar	1	x	20	1	x	40	2	x	60	10m² per general surgery ORs
Recovery Areas											
Patient Bay-Recovery Stage 1	pbtr-rs1-12-i	4	x	12	8	x	12	24	x	12	2 bays per OR in Stage 1; separate M / F
Patient Bay-Enclosed Recovery Stage 1	pbhe-is-n-i							2	x	14	As required for Class S isolation, paediatrics etc
Patient Bed Bay - Recovery Stage 2	pbtr-rs2-12-i	4	x	12	8	x	12	24	x	12	2 Bed Bays per OR in Stage 2, may separate M/ F. A minimum of 2 bed bays is required. **Note 1**
Patient Chair Bay - Recovery Stage 2	lnpt-rs2-i similar	2	x	6	4	x	6	12	x	6	1 chair Bay per OR., may separate M / F. Minimum acceptable is multi-movement recliners at 70% of overall total. **Note 1**
Anteroom	anrm-i							2	x	6	
Bay - Blanket/ Fluid Warmer	bbw-1-i	1	x	1	1	x	1	1	x	1	Optional
Bay - Handwashing, Type A	bhws-a-i	4	x	1	8	x	1	22	x	1	1 per 4 bed/ chair bays
Bay - Linen	blin-i	1	x	2	1	x	2	2	x	2	
Bay - Resuscitation Trolley	bres-i	1	x	1.5	1	x	1.5	2	x	1.5	
Clean Utility/ Medication	clum-14-i similar	1	x	12	1	x	14	2	x	14	
Dirty Utility	dtur-12-i dtur-14-i	1	x	12	1	x	14	2	x	14	Includes Waste Disposal
Staff Station	sstn-14-i similar	1	x	10	1	x	14	2	x	14	To oversee all recovery spaces

Room / Space	Standard Component Room Codes	RDL 2-6 Qty x m2 2 Rooms			RDL 2-6 Qty x m2 4 Rooms			RDL 2-6 Qty x m2 12 Rooms			Remarks
Toilet - Accessible	wcac-i	1	x	6	1	x	6	2	x	6	For Patient
Toilet - Patient	wcpt-i	1	x	4	2	x	4	6	x	4	
Support Areas											
Bay - Mobile Equipment	bmeq-4-i	1	x	4	2	x	4	4	x	4	
Cleaner's Room	clrm-6-i	1	x	6	1	x	6	2	x	6	
Store – Equipment/General	steq-14-i stgn-14-i steq-20-i stgn-20-i	1	x	14	1	x	20	2	x	20	With access for Recovery
Staff Areas											
Change - Staff, Male/ Female	chst-12-i chst-20-i	2	x	12	2	x	12	2	x	20	
Office - 2 person	off-2p-i				1	x	12	1	x	12	Clerical/ administrative support
Office - Clinical/ Handover	off-cln-i similar	1	x	12	1	x	15	1	x	20	Medical/ Nursing workstations
Office - Single Person	off-s9-i	1	x	9	1	x	9	1	x	9	Unit Manager
Meeting Room	meet-9-i meet-l-15-i	1	x	9	1	x	15	1	x	15	May share with an adjacent unit
Staff Lounge	srm-15-i srm-20-i srm-25-i	2	x	15	2	x	20	2	x	25	May be shared with the Operating Unit
Sub Total		**554.5**			**940.5**			**2356**			
Circulation %		**40**			**40**			**40**			
Area Total		**776**			**1317**			**3298**			

Note 1: Stage 2 Recovery 3 Bays per OR may be all in recliners or a mix of chairs and beds. The recommended percentage of each is 70% multi-movement comfortable recliners and 30% bed bays. The minimum acceptable is just multi-movement recliners.

Note 2**:** Offices to be provided according to the number of approved full-time positions within the Unit.

Note 3: This sample SOA does not include Endoscopy. If Endoscopy is to be integrated, check and include the special requirements of Endoscopy Unit within these Guidelines and incorporated in the SOA.

Please also note the following:

- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the Standard Components.

- All the areas shown in the SOA follow the No-Gap system described elsewhere in these Guidelines.
- 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.

10 References and Further Reading

This FPU should be read in conjunction of other parts of the Guidelines in particular Part C - Access, Mobility, OH&S, Part D - Infection Control and Part E - Engineering Services.

In addition, the following may be found useful by the readers:

- AHIA, Australasian Health Facility Guidelines, Part B Health Facility Briefing and Planning, HPU B.0270 Day Surgery Procedure Unit, Revision 6, 2016; refer to website: https://healthfacilityguidelines.com.au/health-planning-units
- Guidelines for Design and Construction of Health Care Facilities; The Facility Guidelines Institute, 2018 Edition, refer to website: www.fgiguidelines.org
- DH (Department of Health) (UK) Health Building Note HBN 10-02 Facilities for day surgery units, 2007, refer to website: https://www.gov.uk/government/publications/day-surgery-facilities-buildings-guidance